

- “[A] company cannot build a business on infringements and then argue that enforcing the law will cripple that business.” (May 13 Order at 33.)

In light of these findings, the federal Court in Miami last week filed a supplemental order setting forth in detail the steps that PrimeTime 24 and its distributors must take to come into compliance with the Copyright Act. See July 10 Order.

In another case against PrimeTime 24, brought by ABC, Inc. in North Carolina over retransmission of ABC programming in the Raleigh-Durham area, the Court yesterday granted ABC's motion for summary judgment. The Court found that “no reasonable fact finder could fail to find that PrimeTime 24's actions constitute a pattern or practice of statutory violation. Although PrimeTime has over 11,000 subscribers in the Raleigh-Durham market, it can show that of these only five meet SHVA's criteria for eligibility.” Memorandum Opinion, ABC, Inc. v. PrimeTime 24 (July 16, 1998), at 27. The Court pointed out that even after the lawsuit was filed, PrimeTime 24 signed up more than 200 new subscribers in towns less than seven miles from the local ABC station's broadcast tower. Id. at 25-26.

Each of the hundreds of thousands (if not millions) of copyright violations committed by the PrimeTime 24/DirecTV/NRTC group is also a violation of the Communications Act and of the Commission's rules. Like cable systems, satellite carriers are required to obtain retransmission consent before retransmitting the signal of a broadcast station. 47 U.S.C. § 325(b); 47 C.F.R. § 76.64. Although there is a narrow exception for retransmissions to “unserved households,” see 47 U.S.C. § 325(b)(2)(C), the delivery of network station by the PrimeTime 24/DirecTV/NRTC group to vast numbers of served households is a

blatant violation of the Communications Act and of the Commission's rules. If the Commission wishes to become enmeshed in the ongoing disputes over delivery of network stations to satellite dish owners, it should take aggressive action to stop these massive violations of the Communications Act and its own rules.

IV. PrimeTime 24 and its Distributors Aggressively Market Distant Network Signals as a Way to Time-Shift and To Obtain Non-Local Sports and Other Programming

PrimeTime 24 and its distributors such as DirecTV and NRTC do not market their distant network packages as an “unserved household” service. To the contrary, the satellite companies bury in fine print the fact that there are any legal restrictions on their network packages.

Because it knows the market for “unserved households” is very small, PrimeTime 24 aggressively promotes other benefits of its service to the public and to satellite retailers. One of PrimeTime 24's recent advertisements illustrates its cynical strategy: under the headline “Everyone Watches Television. Some Watch When They Choose,” PrimeTime 24 promotes use of its service to watch network programs earlier or later than they are available locally. Another PrimeTime 24 advertisement promotes use of PrimeTime 24 to get “All the Football you Need,” including more than 100 games from various cities.^{2/} These “benefits,” of course, have nothing to do with living in an unserved household.

^{2/}

Copies of these advertisements are enclosed.

PrimeTime 24's motivation for selling to "served" households -- maximizing its (unlawful) profits -- is thus easy to see. From the viewers' perspective, there are a number of reasons -- totally unrelated to living in an "unserved household" -- why viewers pay to receive network programs by satellite:^{10/}

a. Time-shifting: PrimeTime 24 has both East Coast and West Coast feeds. As a result, PrimeTime 24 subscribers have a range of options in viewing network programming that are not available to them if they watch their local stations. For example, PrimeTime 24 subscribers on the West Coast can watch network programs such as "Ally McBeal" (Fox), "Touched by an Angel" (CBS), "E.R." (NBC), and "Dharma & Greg" (ABC) three hours earlier by watching East Coast network stations. Similarly, PrimeTime 24 subscribers in the Mountain Time Zone can watch the David Letterman show at 9:30 p.m. local time (from WSEE-Erie, Pennsylvania, on PrimeTime 24), at 10:30 p.m. local time (from their local CBS station), or at 11:30 local time (from KPIX-San Francisco, on PrimeTime 24). These types of time-shifting cannot be achieved through use of a videotape recorder: these subscribers can view network programming before it is shown on their local stations, leaving the local stations effectively in the posture of offering a "rerun" to their own local viewers. And the ability to see programs after they are broadcast locally -- without the inconvenience (and need for advance planning) of using a VCR -- is also valuable to viewers.

^{10/} The points set forth here are adapted from the Expert Report of Paul Bortz in the Southern District of Florida case.

b. Access to out-of-town sports events: Network stations carried by PrimeTime 24 provide viewers with sports events that are not televised by their local stations. By retransmitting FoxNet, WNBC (New York City), and KNBC (Los Angeles) to viewers across the United States, for example, PrimeTime 24 has made available many NFL games that were not available to viewers from the broadcast stations in their local markets. With CBS's recent re-acquisition of rights to NFL football, PrimeTime 24 subscribers will shortly be able to view out-of-town NFL games from the two CBS stations (WSEE and KPIX) that PrimeTime 24 carries, as well as from FoxNet.^{11/} When college sports are offered on a "regionalized" basis, access to PrimeTime 24 also offers out-of-town college games that are not available to viewers from their local stations.

c. Ability to receive network programming without use of an antenna. Although over-the-air antennas are not particularly costly, purchasing and installing an antenna does involve a degree of trouble and expense. And as cable television has become the most popular method of obtaining television programming, many viewers have relatively little familiarity with rooftop antennas. A subscription to PrimeTime 24 permits a viewer to watch ABC, CBS, Fox, and NBC programming without making any of these investments of time and money in over-the-air antennas. And even for dish households that retain access to local television stations -- through an over-the-air antenna or by cable -- a subscription to PrimeTime 24 permits a viewer to watch ABC, CBS, Fox, and NBC network programming "on the

^{11/} The ability to obtain out-of-town NFL games clearly has substantial appeal to viewers: the NFL sells a package of out-of-town NFL games to satellite dish owners called "NFL Sunday Ticket" at prices up to \$159 per season for residential subscriptions.

satellite,” in the same channel lineup as nonbroadcast programming offered by CNN, ESPN, Nickelodeon, USA Network, HBO, and other channels.

d. **Digital format.** PrimeTime 24 subscribers to Direct Broadcast Satellite services such as DirecTV and Echostar enjoy the ability to receive network programming in a digital format, as opposed to the analog format in which television stations broadcast today. This advantage is likely to be especially attractive to videophiles, such as viewers with large-screen televisions.

In a lawsuit pending in federal court in New York City, PrimeTime 24 itself has overtly acknowledged that the attractiveness of its package has nothing to do with living in an “unserved household”:

Satellite delivery of network television programming is capable of providing consumers with many advantages over conventional over-the-air broadcasts, including a crystal-clear image and stereo sound. Moreover, by allowing consumers to view network stations other than their local station, satellite delivery of network television programming can and does enhance consumer choice. The availability of a distant network television station can provide several distinct advantages. For example . . . the non-network programming (e.g., local sports, news, and weather) on the distant station may be particularly desirable, or the network programming

on the distant station may occur at a more convenient time than that offered by the local network station.^{12/}

If it intended to comply with the Copyright Act, PrimeTime 24 and its distributors such as DirecTV and NRTC would have implemented objective standards to ensure that only true "unserved households" -- not served homes seeking to subscribe for other reasons -- could sign up for its service. Instead, PrimeTime 24 markets directly to, and welcomes the business of, hundreds of thousands of plainly ineligible customers. Its "compliance" system, which relies entirely on a patently unreliable system of self-reporting, is a sham. Subscribers are well aware that, in order to receive PrimeTime 24's network package, all they need to do is say "no" to PrimeTime 24's "compliance" questions.^{13/}

PrimeTime 24 and its distributors have no objective check whatsoever on the answers they receive from customers over the telephone. Far from representing a genuine effort

^{12/} Complaint, ¶ 29, PrimeTime 24 Joint Venture v. National Broadcasting Company, Inc., 97 Civ. 3951 (S.D.N.Y. filed May 30, 1997).

^{13/} See David Hatch, Coalition Sets Sights on Satellites: Primetime Hit with Suit over Network Signals, Electronic Media, Jan. 2, 1997, at 3 ("Satellite sources point out that some customers who are capable of receiving local signals lie and tell satellite companies they cannot receive them."); Mark Robichaux and Bryan Gruley, Battle in the Air, Wall Street Journal, Jan. 30, 1997 ("At present, DBS customers in the middle of cities and suburbs, who can easily get strong local signals, are fibbing about 'poor' picture quality to satellite-dish services and retailers so they can get out-of-market signals."); Rick Redding, Area TV Stations Challenge Thousands of Satellite Users, Business First Of Louisville, Jan. 27, 1997 ("many viewers apparently can't resist the temptation to tell a white lie or two."); *id.* (quoting satellite dealer as saying "It's up to the customer - he can call and lie through his teeth, that's up to the mentality of the customer"); TV's Changing Picture, Consumer Reports, Dec. 1996, at 14 ("You can order broadcast network service on your dish, providing you say you can't receive local channels well with an antenna") (emphasis added).

at compliance, PrimeTime 24's system -- implemented by its distributors such as DirecTV and NRTC -- is simply an attempt to create the appearance of a compliance effort while enrolling as many customers as possible to maximize profits.

V. Grade B Intensity is An Excellent Proxy for Acceptable Picture Quality, And There is No Better Proxy Available

The Commission specified particular signal intensity levels (e.g., 47 dBu for low-VHF stations) as "Grade B" in the 1950s based on empirical testing about the signal strength needed to produce a picture deemed acceptable by the median, neutral observer. The correctness of the Commission's judgments on that subject are confirmed by much more recent data, which show that, with a properly functioning rooftop antenna, a signal of at least Grade B intensity is very likely to produce a television picture that median, neutral observers will judge to be acceptable.^{14/}

In 1994, researchers from the Field Testing Task Force of the FCC's Advisory Committee on Advanced Television Service conducted field tests in Charlotte, North Carolina. The purpose of these tests was to compare the performance of conventional (analog) TV signals and digital signals. As part of the field work, neutral researchers collected data at about 200 different locations about both (a) the signal strength of the analog signals (in dBu units) and (b) subjective ratings (by several expert viewers) of the resulting picture quality. Although

^{14/} The overwhelming majority of the complaints about the supposed lack of a correlation between Grade B intensity and picture quality arise from viewers who do not have properly functioning and correctly oriented rooftop antennas -- or, in many cases, any over-the-air antenna at all.

collected for a different purpose -- to compare digital and analog broadcasting -- the data show there is in fact a strong relationship between signal strength and picture quality. See Supplemental Declaration of Jules Cohen ¶ 11 (June 17, 1997). In short, far from being an outmoded proxy for acceptable picture quality, Grade B intensity is shown by very recent research data to be an excellent one.

VI. As the Commission Has Recognized, Longley-Rice is the Best Way, Short of Field Testing, to Assess Whether a Particular Location Can Receive a Signal of Grade B Intensity

Traditionally, the Commission has relied on predicted Grade B contours, created pursuant to Section 73.684, for a variety of regulatory purposes. Over the past few years, however, the Commission has recognized that terrain-adjusted propagation models -- and the Longley-Rice model in particular -- provide the best available method, short of field testing, for assessing the strength of signal that is available at a particular location. The Commission has set forth specific parameters (e.g., 50% location and time probability, 30 foot receiving antenna) for creation of Longley-Rice maps for analog television stations. See OET Bulletin 69. The Court in Miami has simply incorporated the standard parameters used by the Commission and routinely applied by broadcast engineers of all stripes.^{15/}

^{15/} See Deposition of Richard Biby [PrimeTime 24 expert witness], Tr. 81 (June 10, 1998) ("[f]or the purposes of attempting to replicate the predicted area coverage, the FCC, as I recall, used a 50 percent time, 50 percent area"); Deposition of Robert Culver [PrimeTime 24 expert witness], Tr. 98 (June 4, 1998) (in preparing Longley-Rice maps of an analog television station for submission to the FCC, he used "50 percent time and 50 percent location" factors).

The Commission's most prominent reliance on Longley-Rice propagation methods has been in connection with the transition to digital television. See FCC, In Re Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-268, FCC 98-24. As part of that process, the Commission has tried to replicate, in its assignments of digital channels, the coverage areas that analog stations enjoy today. Expert Report of Jules Cohen, ¶ 11 (citing Commission sources). To determine stations' current coverage areas, the FCC has relied on Longley-Rice maps created in the same way that the Court has directed PrimeTime 24 to create Longley-Rice maps for purposes of complying with the injunction. See FCC, Office of Engineering and Technology Bulletin No. 69; Supplemental Expert Report of Jules Cohen (May 29, 1998) ("Cohen Supp. Report"), ¶¶ 8-9 (filed concurrently).

There is nothing inappropriate about use of the FCC's standard parameters (e.g., 50% of locations *at the outermost edge*, 50% of the time *at the outermost edge*, receiving antenna at 30 feet above ground level) for creating Longley-Rice maps.^{16/} As the Commission has explained, its purpose in using Longley-Rice with these standard parameters was to predict station coverage areas accurately so as to "ensure that *broadcasters have the ability to reach the audiences they now serve* and that *viewers have access to the stations that they can now receive over the air.*" Sixth Report & Order, In Re Advanced Television Stations and Their Impact Upon the Existing Television Broadcast Service, FCC 97-115, ¶ 29, 12 FCC Rcd. 14588, 14605

^{16/} As NRTC acknowledges (Petition at 7), "50/50" is really "50/90" because the Commission built several extra dBu into the Grade B minimums as a safety factor for time variability.

(1997) (emphasis added); see Separate Statement of Reed Hundt, Chairman, FCC, In Re Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-268, 11 F.C.C. Rcd. 10968, 1996 WL 465110 (released Aug. 14, 1996) (referring to Longley-Rice data as “even more precise calculations”). In the digital proceeding, the Commission specifically rejected the use of non-standard software as a substitute for the Longley-Rice program available from U.S. Government sources. FCC 98-24, at ¶ 180.

Moreover, the accuracy of the FCC Longley-Rice procedure in predicting which households will actually receive a signal of Grade B intensity has been confirmed by comparing Longley-Rice predictions to the actual test results that plaintiffs in the Florida litigation have obtained (using the FCC measurement procedure approved by the Court) at the locations of more than 500 PrimeTime 24 subscribers in five different markets. Id. at ¶¶ 29-33.

The following is a chart showing the accuracy of Longley-Rice in predicting whether particular randomly selected households would be able to receive a signal of Grade B intensity:

TELEVISION MARKET AND STATION(S)	LONGLEY-RICE SUCCESS RATE
Miami (CBS, Fox) (Ch. 4, 7)	100%
Charlotte (CBS) (Ch. 3)	99%
Pittsburgh (Fox) (Ch. 53)	73%
Baltimore (CBS) (Ch. 13)	94%
Raleigh / Durham (ABC) (Ch. 11)	99%

See Supplemental Report of Jules Cohen, ¶ 32.

In addition, it is critical to appreciate that Longley-Rice is the beginning -- not the end -- of the analysis. Under the Order issued by the federal Court in Miami on July 10, 1998, PrimeTime 24 and its distributors are free to sell network programming to any household that is tested (using procedures based on the FCC's own Section 73.686) and found to be unable to receive a signal of Grade B intensity.

VII. NRTC's "100% / 100%" Proposal Does Not Even Purport to Implement the SHVA, and if Adopted Would Disastrously Shrink the Protection Granted to Local Affiliates

NRTC urges the Commission to adopt new regulations that would define "Grade B intensity" specifically for purposes of the SHVA. (Petition at 16-19.) NRTC's proposal makes no sense. It does not urge the Commission to revise the signal intensity levels that the

FCC has long defined as “Grade B,” such as 47 dBu's for low-VHF channels. For the Commission to change the dBu levels specified in Section 73.683(a), of course, would have enormous ripple effects throughout its regulatory system, since many key FCC regulations are based on Grade B contours -- and the distance from a television tower to its Grade B contour is determined by the dBu levels specified in Section 73.683(a). See, e.g., 47 C.F.R. § 73.3555(b) (multiple ownership rules based on “overlap of the Grade B contour”); § 73.622(e) (digital television service); § 74.705(a) (protection from interference from low power TV stations); § 74.731(j) (permissible service area for TV booster stations); § 76.54(c) (determination of “significantly viewed” signals); § 76.92(d) (network nonduplication rules); § 76.156(a) (syndicated exclusivity exceptions); § 76.501(a) (cable TV cross-ownership); Petition of Time Warner City Cable Group, 11 FCC Rcd. 6514, ¶ 24 (1996) (petition for market modification), aff'd, 12 FCC Rcd. 12262 (1997).

Although Congress made “unserved household” status dependent on an individual household's ability to receive a signal of a specified number of dBu's, the NRTC proposes something completely different. The NRTC would have the Commission “define “an over-the-air signal of Grade B intensity” as “the level of coverage provided within a Grade B contour encompassing a geographic area in which 100 percent of the population, using readily available, affordable receiving equipment, receives over-the-air coverage by network affiliates 100 percent of the time.” Petition at 19.

The NRTC proposal has nothing to do with the statute enacted by Congress. Congress made very clear in enacting (and extending) the Satellite Home Viewer Act that

whether a household can receive a “Grade B intensity” signal is an individualized matter that can be determined through actual testing. See, e.g., H.R. Rep. 103-703, at 13 (1988) (“This is an objective test, accomplished by actual measurement.”). The NRTC would instead create irrebutable presumptions based on “geographic areas” in which “100 percent of the population” can receive a signal “100 percent of the time.” That is not remotely what Congress directed: under the Act, eligibility depends on whether an individual household can receive a signal of Grade B intensity. 17 U.S.C. § 119(d)(10)(A). Although use of Longley-Rice maps is a sensible starting point for assessing which households can receive a signal of Grade B intensity, the predictions embodied in those maps can always be overridden by actual test results. See July 10 Order; July 16th Memorandum Opinion at 18.

Even if the Act established conclusive rules based on the overall “geographic area” in which a household is located -- which it does not do -- NRTC's “100% / 100%” proposal would make no sense. The proposal does not bear even the remotest resemblance to any methodology previously recognized by the FCC or sound engineering practices. Consider the following:

(a) NRTC does not indicate whether it is referring to a subjective standard of picture quality or to an objective test of signal strength. If the former, there is a broad consensus -- joined by the Copyright Office as well as the satellite industry's own expert witnesses -- that a subjective standard is completely unworkable. In particular, PrimeTime 24's experts agree:

- that views about whether a TV picture is “acceptable” are personal and subjective;

- that because “acceptability” is subjective, multiple observers are required to obtain valid data;
- that the stated opinions of people who have a stake in the outcome (in this case, dish owners who would like to get additional channels) are biased and unreliable; and
- that it would be necessary to use standardized, properly functioning equipment to do the tests, rather than the homeowner’s own equipment, which often does not include a rooftop antenna at all and may not be properly installed if a rooftop antenna is present.^{17/}

(b) Alternatively, NRTC might be suggesting that “Grade B intensity” should be conclusively determined by Longley-Rice maps created in a newly-invented way whose sole purpose is to shrink station coverage areas to a fraction of their true coverage. As previously discussed, to conclusively determine eligibility based on overall geographic areas would be completely inconsistent with the language of Section 119. And even if the proposal were consistent with the Act -- which it is not -- its effects would be disastrous.

First, the Commission has already determined the appropriate parameters (specified in OET Bulletin 69) for using Longley-Rice to accurately predict the propagation of television broadcast stations. See Sixth Report & Order, In Re Advanced Television Stations and Their Impact Upon the Existing Television Broadcast Service, FCC 97-115, ¶ 29, 12 FCC Rcd. 14588, 14605 (1997) (goal of replication process is to “ensure that *broadcasters have the ability to reach the audiences they now serve* and that *viewers have access to the stations that*

^{17/} at 31 n.17.

See Report & Recommendation, CBS Inc. et al. v. PrimeTime 24 (July 2, 1997),

they can now receive over the air.”) (emphasis added). **Second**, use of anything approaching 100% / 100% parameters would shrink stations' predicted coverage areas far inside their predicted Grade A contours. The resulting drastic assault on the core areas of station markets would have a major impact on their revenues and their ability to fulfill their public service obligations, particularly in small markets in which stations are licensed to serve many of the “rural” viewers that NRTC purports to represent. **Third**, as the chart above shows, the data collected by Jules Cohen provides concrete validation, at hundreds of randomly selected households, that the Longley-Rice model run in the conventional way approved by the Commission is an excellent predictor of actual ability to receive at least a Grade B signal. **Fourth**, Mr. Cohen has shown that a similar, and indeed *less* radical proposal advanced by PrimeTime 24 (97% / 97%) would grossly understate the true coverage area of television stations as measured by actual signal intensity tests. See Additional Declaration of Jules Cohen, May 29, 1998.

The July 10 Order issued by the United States District Court for the Southern District of Florida properly takes advantage of standard tools developed by the Commission. Whether a household can receive a signal of Grade B intensity is determined in the first instance through Longley-Rice maps created in the standard manner specified by the FCC; and if the satellite carrier wishes to challenge that presumption, it may do so by conducting a signal intensity test in the standard manner specified by the FCC. This is not “usurpation” of the Commission's role; it is a sensible use of accepted engineering tools to enforce the Copyright Act against chronic scofflaws.

**VIII. NRTC's Partner, DirecTV, Itself Acknowledges that
Over-the-Air Antennas Are A Workable Way to Get Network Signals**

The proposed destruction of the exclusivity rights of local network stations is completely unnecessary to achieve the purposes NRTC purportedly wants to advance. Contrary to what NRTC has told the Commission, existing law and technology provides NRTC and its partners such as DirecTV with ample means to enable the great majority of viewers to combine local over-the-air stations with nonbroadcast satellite-delivered program services. As NRTC's partner DirecTV says on its current World Wide Web page (as of July 15, 1998): **"Enjoy local channels and DirecTV too! . . . A new generation of off-air antennas can seamlessly deliver high-quality signals from free local TV broadcasters directly to your DSS system with just a push of your remote."**) Similarly, a spokesman for United States Satellite Broadcasting, which shares satellite space with DirecTV, has assured satellite dealers that "[t]oday's antennas (you probably sell them in your store) are capable of bringing in a high quality signal for just about every urban or suburban homeowner. And it will almost always be a clearer, more stable, and more reliable signal than cable TV!" Bob Shaw, Customers Get Local Channels Free With Every DSS, DSS Insider (Winter 1997).

IX. There is Nothing "Immeasurable" About Grade B Intensity

NRTC contends that "Grade B intensity" is "immeasurable." To the contrary: the reason Congress chose the objective standard of "Grade B intensity" -- rather than an endlessly debatable, subjective "picture quality" standard -- is that it *is* measurable. Indeed, the Commission has long specified procedures for measuring signal intensity, see 47 C.F.R.

§ 73.686, which the Court has endorsed as the proper method for measuring signal intensity at individual households. See May 13 Order at 25-26; id. at 26 n.16. To the extent that NRTC or its allies DirecTV and PrimeTime 24 believe that a particular Longley-Rice map is inaccurate, therefore, they can conduct signal intensity tests using specific, Court-approved procedures.

X. NRTC's "Implied Consent" Argument is Without Merit

NRTC argues that stations have somehow waived their rights to have NRTC and its allies comply with the Copyright Act. That is not remotely correct. It is the obligation of PrimeTime 24 and its distributors to comply with the Copyright Act, and Congress expressly placed the burden of proof on satellite carriers to show that each of their customers is in fact "unserved." 17 U.S.C. § 119(a)(5)(D). Although many stations have filed challenges to illegal customers signed up by PrimeTime 24 and its distributors -- in what is typically a fruitless effort to obtain compliance -- there is no obligation on stations to do so.

XI. To Foster Lawful Competition Between Cable and Satellite, the Commission Should Encourage Enactment of an Appropriate Regulatory Regime for Local-to-Local Satellite Transmissions of Broadcast Stations

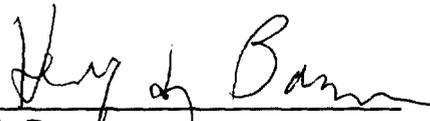
It is obviously improper for satellite companies to seek to "compete" with cable systems by violating the Copyright Act and jeopardizing the viability of local over-the-air stations. Indeed, this type of "competition through infringement" gives a huge and unfair regulatory advantage to satellite companies over cable companies: satellite companies (unlike cable) have no obligation to carry local stations, but they can (unlike cable) deliver distant network stations (unlawfully) to their customers.

If Congress and the Commission create an appropriate statutory and regulatory regime, however, satellite companies will be able to compete with cable systems by offering local broadcast stations -- not distant ones -- to local viewers, just as cable systems do. The local-to-local solution, if properly implemented, is a win/win situation for satellite companies, broadcasters, and consumers. We urge the Commission to lend its strong support to adoption of an appropriate local-to-local regime.

Conclusion

For the foregoing reasons, the Commission should take no action with respect to NRTC's ill-considered, self-serving, and factually inaccurate petition.

Respectfully submitted,



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Dated: July 17, 1998

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

CBS Broadcasting Inc., et al.,)	
)	
Plaintiffs,)	
)	
v.)	CIV-Nesbitt No. 96-3650
)	Magistrate Judge Johnson
)	
PrimeTime 24 Joint Venture,)	
)	
Defendant.)	

EXPERT REPORT OF JULES COHEN

1. This is an expert report submitted in compliance with Rule 26(a)(2) of the Federal Rules of Civil Procedure and Local Rule 16.1(K).
2. My qualifications as an expert witness in the field of broadcast engineering are set forth in the attached description of my professional background. I have been a professional engineer with particular emphasis on the fields of broadcasting and signal propagation since the end of 1945 upon my release from active duty as a commissioned officer in the U.S. Navy. I was awarded the degree of Bachelor of Science in Electrical Engineering by the University of Washington (Seattle) in 1938. My initial employment in the field of broadcasting was as a Senior Engineer in the consulting firm of Weldon and Carr. Since 1952, I have been either a sole practitioner, partner or officer

of a firm in consulting practice. Among the many clients I have served are the five television broadcast networks (ABC, NBC, CBS, PBS and Fox), group owners of radio and television stations, the Association for Maximum Service Television, Inc., the National Association of Broadcasters (NAB), and the Electronic Industries Association. My testimony as a qualified professional engineer has been accepted by Federal and State courts, the Federal Communications Commission (FCC), and various local boards. I hold professional engineer licenses issued by the District of Columbia, the location of my office, and by the Commonwealth of Virginia, the place of my residence. I am a Life Fellow in both the Institute of Electrical and Electronics Engineers and the Society of Motion Picture and Television Engineers. I am a member of the National Society of Professional Engineers and the American Association for the Advancement of Science. I was elected to membership in Tau Beta Pi, the engineering scholastic honorary. I received the 1988 Engineering Achievement Award of the NAB and the 1992 Engineering Achievement Award of the Broadcast Pioneers Washington Chapter.

3. I have been asked by counsel for the plaintiffs to supervise two efforts -- the creation of maps and signal intensity testing -- designed to assess whether, and to what extent, PrimeTime 24 is delivering programming to households capable of receiving a signal of Grade B intensity from a local CBS or Fox station.

Background

4. My understanding is that the Copyright Act authorizes satellite carriers, such as PrimeTime 24, to deliver distant network stations (including CBS and Fox stations) to satellite dish owners, but only to “unserved households” for private home viewing. The definition of “unserved household” includes, among other things, the requirement that the household “cannot receive, through the use of a conventional outdoor rooftop receiving antenna, an over-the-air signal of Grade B intensity (as defined by the Federal Communications Commission) of a primary network station affiliated with that network.” Long ago, the FCC defined the term “Grade B field strength” (intensity) in its regulations: the term is defined as the number of decibels (dB) above a field intensity of one microvolt per meter. The unit is expressed by the FCC as “dBu.” (The “u” is actually the Greek letter “μ,” but for simplicity it is usually written and pronounced as a “u.”)

5. Television stations use towers -- either very tall towers or shorter towers placed at high locations such as mountaintops -- to broadcast their signals over the air to viewers. For example, the CBS station in Miami, WFOR, and the Fox station in Miami, WSVN, operate from towers approximately 1,000 feet in height from an “antenna farm” in North Dade County, Florida.

6. The FCC defines three levels of intensity of over-the-air signals -- “City Grade,” “Grade A,” and “Grade B.” The FCC’s definition of Grade B intensity -- which

the Satellite Home Viewer Act incorporates by reference -- is a median signal strength level of 47 dBu (224 microvolts per meter) for television channels 2-6 (low VHF), 56 dBu (631 microvolts per meter) for channels 7-13 (high VHF), and 64 dBu (1,585 microvolts per meter) for channels 14-69 (UHF). 47 C.F.R. § 73.683(a).

7. The decibel is a unit of measurement originally applied to the intensity of sound. Unlike a more familiar ("linear") measuring scale such as temperature in degrees Fahrenheit, dBu's are a highly compressed, "logarithmic" scale. For example, an increase in field intensity from 60 to 80 dBu is a tenfold increase in intensity. A dBu reading of 100 reflects an intensity 100 times stronger than a dBu reading of 60.

Maps of Predicted Signal Intensity

8. The traditional method of predicting a station's signal intensity is to use maps showing contours representing the outer boundaries of grades of service. The prediction method, as specified by the FCC, places particular emphasis on the terrain between two and ten miles from the transmitter and assumes "average" terrain roughness beyond that distance. Each station is required to file a map, or maps, with the FCC showing its predicted service grades. In the case of some stations, such as WFOR and WSVN in Miami, these contours appear as concentric circles.

9. In reality, the terrain surrounding any given station's transmitter is unlikely to be "average." For that reason, engineers and scientists have developed signal propagation models that take into account the actual terrain surrounding any given

television transmitter. The most widely-used propagation model is referred to as the "Longley-Rice" model. The Longley-Rice model, now in the form of a computer program, had its origins in Technical Note 101, a publication of the National Bureau of Standards (now the National Institute of Standards and Technology). Technical Note 101 was issued in 1965 and is entitled "Transmission Loss Predictions for Tropospheric Communications Circuits." Its authors were: P.L. Rice, A.G. Longley, K.A. Norton, and A.P. Borsis. The model has been refined over the years by U.S. Government scientists to take into account the availability of improved terrain data bases and the increased sophistication of desktop computers. The Longley-Rice model analyzes the terrain point-by-point along radial paths from the transmitter (usually at one-degree azimuth intervals), determines the nature of the obstructions, and provides a map output with indications of where particular field intensities are exceeded. Alternatively, the area of interest is divided into a large number of cells and, based on the terrain from the transmitter to each cell, the program determines whether the specified field intensity or greater is found in that cell. The field intensity loss in strength at increasing distances from the transmitter is a function of whether the path is unobstructed, is generally irregular (rough), is marked by a single prominent obstruction that may be either "knife edged" or rounded, or by multiple prominent obstructions substantially higher than the intervening terrain. Calculations take into effect the particular frequency transmitted since the effect of an obstruction is frequency dependent. The model also takes into account atmospheric refractivity near the surface of the earth.

10. The Institute for Telecommunications Sciences (ITS), located in Boulder, Colorado, is the chief research and engineering arm of the National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce. Upon request, ITS has been providing field intensity maps, based on the Longley-Rice propagation model, for specific areas and television stations since early in the 1980s. I have personally used the ITS service and also created many Longley-Rice maps using my office facilities in the ordinary course of my work as a broadcast engineer.

11. In connection with the transition to digital television broadcasting, the FCC has adopted the Longley-Rice Irregular Terrain Propagation Model as the best available way to determine the area that stations currently serve through analog broadcasting. (See particularly the Office of Engineering and Technology Bulletin No. 69 describing the employment of the Longley-Rice model, as used by the FCC, in matters involving television service and interference.) The FCC has noted that “the terrain dependent Longley-Rice propagation model . . . [is] well known to the broadcast industry.” FCC, In Re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, MM Docket No. 87-268, FCC 98-24,1998 WL 72379 (F.C.C.) (adopted Feb. 17, 1998). The FCC recently reaffirmed its decision to rely on Longley-Rice for these purposes. Id., ¶ 180.

Creation of Maps Showing Station Signal Levels
and Locations of PrimeTime 24 Subscribers

12. To illustrate PrimeTime 24's service patterns on a national basis, I supervised the creation of maps for forty-three stations around the country. The selection of these forty-three stations was directed by Prof. Seymour Sudman, a professional statistician. A tabulation of the stations mapped is included in Exhibit A. Copies of the maps are included as Exhibit B. The maps generated are for (1) CBS or Fox stations in each of the top 15 Defined Market Areas (DMAs), (2) Fifteen randomly selected stations in DMAs 17-100 (note -- Miami is DMA 16), (3) Five randomly selected stations in DMAs 101-211, (4) Three additional CBS or Fox affiliates in southern Florida, and (5) Five stations that are plaintiffs in this case. Where applicable, service provided by translators or satellite stations, which extend a station's coverage, is included together with the service provided by the "mother" station.

13. For each station mapped, the maps show three things: (a) the station's traditional FCC contours (both A and B); (b) the results of a Longley-Rice analysis of the station's predicted signal intensity; and (c) the locations of new PrimeTime 24 subscribers signed up between July 1996 and November 1997.¹

^{1/} For July through December 1996, the data include only subscribers who signed up for PrimeTime 24 through DirecTV, which I understand to be PrimeTime 24's largest distributor. I understand that the DirecTV data are available in electronic form for the second half of 1996 because DirecTV provided data for that period directly to CBS and Fox. I also understand that for January through November 1997, subscriber data were provided directly by PrimeTime 24 in electronic form.

For the majority of maps shown, the map projection used is one that assumes equal