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OFFICE OF THE SECRETARY

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Carriage of the Transmissions of Digital Television Broadcast Stations	)	CS Docket No. 98-120
	)	
Amendments to Part 76 of the Commission's Rules	)	

TO: The Commission

**REPLY COMMENTS OF  
THE ASSOCIATION OF AMERICA'S PUBLIC TELEVISION STATIONS,  
THE PUBLIC BROADCASTING SERVICE, AND  
THE CORPORATION FOR PUBLIC BROADCASTING**

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December 22, 1998

## SUMMARY

In their opening comments, public broadcasters urged the Commission to proceed without delay to implement must carry requirements for the digital signals of public television stations and outlined an approach to cable carriage requirements for public television during the transition period that would minimize any burden on cable. Although numerous parties filed comments in this proceeding — including many that opposed application of cable carriage requirements to digital broadcast signals during the period of transition from analog to digital broadcasting — these commenters barely mentioned public television, and they failed to address the special reasons supporting mandatory cable carriage of public television stations' digital signals.

Strong governmental interests support the carriage requirement for digital signals of public television stations. It is widely recognized that public television stations are particularly vulnerable to being omitted from cable line-ups and must rely on carriage requirements to obtain broad access to cable subscribers. Congress' goal of universal access to public television services is a unique governmental interest supporting digital must carry for public television.

Contrary to the position of some commenters, there is no effective alternative to cable carriage requirements. Dependence on over-the-air reception and the A/B switch would impose significant disadvantages

on public television stations. Due to public television's unique circumstances and the pragmatic approach public broadcasters have proposed for the transition period, cable carriage requirements for public television stations' digital signals should not impose any substantial burden on cable.

Digital cable carriage opponents fail to acknowledge the plain words of the 1992 Cable Act, which require carriage of all "signals" of local broadcast stations, not just analog signals. Their efforts to find a different meaning in Congress' words are without merit. In addition, attempts to reanalyze the constitutionality of the 1992 Cable Act are misguided. The Supreme Court's ruling that the must carry provisions are constitutional applies fully to the carriage of digital broadcast signals. There is no basis for commenters' attempts to reargue legal and policy issues. Congress has made the policy judgment that must carry requirements are in the public interest, and the Supreme Court has affirmed the constitutionality of Congress' action. These determinations provide the basis for the Commission's action in this rulemaking.

Prompt implementation of must carry requirements for digital broadcast signals is of critical importance to public television and to the success of the digital transition. As described in public broadcasters' opening comments, public television has exciting plans for digital broadcasting, including plans for the innovative use of digital capabilities to expand public television's ability to fulfill its educational and public service

missions. Public television stations are proceeding with expensive digital conversions, and beginning to assume the substantial burdens of operating dual analog and digital services. They need assurance now that all viewers will be able to access the important new digital services public television will offer.

No commenting party has provided a valid reason against carriage of public television digital signals during the transition period. The Commission should act promptly to implement public broadcasters' carefully considered approach to cable carriage of public television stations' digital signals during that period, thereby ensuring that public television will be able to continue to fulfill its mission in the new digital world.

**TABLE OF CONTENTS**

**Page**

SUMMARY .....	i
I. THE OPENING COMMENTS OF OTHER PARTIES FAIL TO ACKNOWLEDGE THE EXISTENCE OF PUBLIC TELEVISION AND ITS UNIQUE CIRCUMSTANCES.....	2
II. STRONG GOVERNMENTAL INTERESTS SUPPORT MUST CARRY PROTECTION FOR THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS.....	6
A. Future Viability of Public Television Stations .....	7
B. Preservation of a Multiplicity of Information Sources .....	8
C. Fair Competition .....	11
D. Additional Interests Supporting Carriage Requirements for Public Television .....	11
III. USE OF ANTENNAS AND A/B SWITCHES IS NOT AN EFFECTIVE SUBSTITUTE FOR CABLE CARRIAGE OF THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS. ....	14
IV. CARRIAGE OF PUBLIC TELEVISION STATIONS' DIGITAL SIGNALS WILL NOT ENTAIL ANY SIGNIFICANT BURDEN ON CABLE.....	19
A. Carriage of Public Television Digital Signals.....	20
B. Cable Capacity .....	21
C. C-SPAN .....	24
V. THERE IS NO LEGAL BASIS FOR DELAYING APPLICATION OF MUST CARRY REQUIREMENTS TO PUBLIC TELEVISION STATIONS' DIGITAL SIGNALS. ....	26
A. The 1992 Cable Act Requires Cable Carriage of Digital Signals of Public Television Stations.....	26
B. Provision of Must Carry Protection for Public Television Stations' Digital Signals Does Not Raise Constitutional Concerns. ....	30
VI. THE COMMISSION MUST ACT PROMPTLY TO APPLY THE MUST CARRY REQUIREMENTS TO THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS.....	34
CONCLUSION.....	37

Exhibit 1 – Maryland Public Television and Oregon Public Television –  
Prototype Digital Schedules

Exhibit 2 – Affidavit of John Tollefson, Vice President and Chief Technology  
Officer, Public Broadcasting Service

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The Association of America's Public Television Stations ("APTS"), the Public Broadcasting Service ("PBS"), and the Corporation for Public Broadcasting ("CPB") (collectively, "public broadcasters") hereby reply to the initial comments in this proceeding. As in their opening comments, public broadcasters have focused primarily on matters of particular concern to public television and on the unique nature and needs of public television.

Public broadcasters' opening comments explained that the Commission should move promptly to implement must carry requirements for the digital signals of public television stations and presented an approach to cable carriage requirements for public television during the transition period designed to

minimize any burden on cable.<sup>1</sup> The opening comments filed by other parties make no effective argument to the contrary; indeed, they barely mention public television. As explained below and in public broadcasters' opening comments, Section 5 of the 1992 Cable Act<sup>2</sup> and the strong governmental interests that underlie it mandate carriage requirements for public television stations' digital signals, and there is no effective alternative to such requirements. The Commission should act now to ensure that all Americans will have access to the important new digital services public television will offer.

**I. THE OPENING COMMENTS OF OTHER PARTIES FAIL TO ACKNOWLEDGE THE EXISTENCE OF PUBLIC TELEVISION AND ITS UNIQUE CIRCUMSTANCES.**

Most of the opening comments ignore public television and its unique circumstances. Most of the comments cite only Section 4 of the 1992 Cable Act, the must carry requirements for commercial television stations; they do not even mention Section 5, the separate provision governing noncommercial television stations.<sup>3</sup> In addition, a number of commenters describe retransmission consent as an integral part of the regulatory scheme, suggesting that retransmission consent

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<sup>1</sup> See APTS/PBS/CPB Comments, pp. 26-28 & Ex. F.

<sup>2</sup> Cable Television Consumer Protection and Competition Act of 1992, Pub. L. 102-385, 106 Stat. 1460 (1992) ("1992 Cable Act").

<sup>3</sup> Only the comments submitted by the United Church of Christ Office of Communications, et al. provide a substantial discussion of cable carriage for public television stations' digital signals. These comments generally support must carry requirements for public television digital services. See UCC, et al. Comments, (continued...)

negotiations will provide an adequate substitute for must carry requirements in the digital world.<sup>4</sup> As stressed in public broadcasters' opening comments, however, the retransmission consent provisions do not apply to public television.

Moreover, one of the primary arguments put forward by opponents of cable carriage requirements for digital signals during the transition — that carriage of digital television signals is a matter best left to the market — does not fit public television's circumstances at all.<sup>5</sup> Over 30 years ago, Congress recognized that the commercial marketplace will not support public television's noncommercial services, stating that "the economic realities of commercial broadcasting do not permit widespread commercial production and distribution of educational and cultural programs which do not have a mass audience appeal."<sup>6</sup> In enacting separate must carry protections for public television in 1992, Congress pointed out

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pp. 11-16.

<sup>4</sup> *E.g.*, Comments of GTE ("GTE Comments"), pp. 22-23.

<sup>5</sup> *E.g.*, Comments of the National Cable Television Association ("NCTA Comments"), pp. 39-40; Comments of Time Warner Cable ("Time Warner Comments"), p. 6; Comments of Tele-Communications, Inc. ("TCI Comments"), pp. 16-17.

<sup>6</sup> H.R. Rep. No. 572, 90th Cong., 1st Sess. 1 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1799, 1801. *See also* Third Notice of Further Proposed Rulemaking on Television Assignments, 16 Fed. Reg. 3072, 3079 (1951) (noting that reservation of channels for noncommercial educational users was intended to promote a television service "of an entirely different character from that available on most commercial stations").

that cable operators are not eager to negotiate carriage of public television stations, but instead seek out more lucrative programming. The House committee observed:

Because cable operators are for-profit enterprises, they necessarily seek to provide customers with the package of programming and services that will maximize the operators' profits. As commercial enterprises, cable operators ordinarily lack strong incentive to carry programming that does not attract sufficient dollars or audiences. Traditionally, public television has provided precisely the type of programming commercial broadcasters and cable operators find economically unattractive.<sup>7</sup>

According to some of the comments, cable operators are negotiating with some broadcasters regarding carriage of digital signals, and Commission action will inappropriately interfere with these attempts at a commercial resolution.<sup>8</sup> It now appears that cable officials are citing a recent agreement between CBS and Time Warner Cable for carriage of the digital signals of local CBS affiliates as support for their position that digital must carry regulation is unnecessary.<sup>9</sup>

Such "deals" between cable companies and the major broadcast networks plainly do not suggest that cable carriage requirements for public television are unnecessary. Cable systems have always been willing to carry the

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<sup>7</sup> H.R. Rep. No. 628, 102d Cong., 2d Sess. 70 (1992).

<sup>8</sup> *E.g.*, Comments of MediaOne Group, Inc. ("MediaOne Comments"), pp. 6-9; TCI Comments, p. 12.

<sup>9</sup> *See Communications Daily*, Dec. 9, 1998, at 1 ("NCTA Pres. Decker Anstrom saw [the CBS-Time Warner digital television] deal as another reason why must-carry regulations aren't necessary.").

signals of the major network affiliates; that was true in 1992, when Congress enacted the must carry requirements. Clearly, protection of the local affiliates of major networks was not Congress' primary purpose. Instead, Congress was seeking to preserve the entire broadcast industry, including public television stations and others that were most vulnerable to cable abuses.

Now, as in 1992, public television stations cannot depend on private negotiations and "deals" to ensure cable carriage. There is already some evidence to confirm that conclusion. Although some public television stations have already begun digital broadcasting, public television has not been included in any industry-wide negotiations, and initial indications from the cable industry are that a voluntary nationwide carriage agreement is not an option for public television.<sup>10</sup>

The opening comments advance other arguments that are not relevant to public television. For example, some commenters argue that broadcasters cannot show a significant governmental interest in cable carriage of digital

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<sup>10</sup> Earlier this year, APTS approached the National Cable Television Association, in an effort to begin a dialogue regarding cable carriage of public television stations' digital signals. At that time, NCTA stated that there would be no national-level agreement between NCTA and public television regarding digital signal carriage. NCTA's president advised APTS that each public television station should attempt to negotiate with local cable operators for carriage of its digital signal. As described below, most of those public television stations that have attempted to initiate such discussions at the local level have not been successful. Most cable systems approached by public television stations have stated that they are waiting for Commission action before responding to digital carriage requests.

broadcast signals because they have not yet developed digital business plans.<sup>11</sup> However, public television has spent extensive time and resources formulating service plans for digital broadcasting. Public broadcasters described these service plans — which include multicasting to increase public television stations' ability to meet diverse educational and public service needs, expansion of the availability of instructional programming, and integration of data and other digital capabilities that will enhance educational programming — at length in their opening comments.<sup>12</sup> The Commission has more than enough information to conclude that cable carriage of public television's digital signals will further the public interest.

## **II. STRONG GOVERNMENTAL INTERESTS SUPPORT MUST CARRY PROTECTION FOR THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS.**

Opponents of digital cable carriage requirements argue that the governmental interests invoked by Congress in 1992 do not support mandatory cable carriage of digital signals.<sup>13</sup> But the Supreme Court in *Turner*<sup>14</sup> found these

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<sup>11</sup> *E.g.*, Comments of the Cable Telecommunications Association ("CATA Comments"), pp. 14-17; MediaOne Comments, pp. 40-41.

<sup>12</sup> *See* APTS/PBS/CPB Comments, pp. 5-8, 37-40, Exh. A. *See also* Albinak, "HDTV: Launched and Counting," *Broadcasting & Cable*, Nov. 2, 1998, at 6, 8 (characterizing PBS as "the surprise leader in original HDTV programming"). It appears that, unlike public television stations, most commercial television stations do not plan to use their digital capacity for multicasting. *See id.* at 8.

<sup>13</sup> *E.g.*, NCTA Comments, pp. 5-6; Time Warner Comments, p. 19; TCI Comments, pp. 8-9.

<sup>14</sup> *Turner Broadcasting System, Inc. v. FCC*, 117 S.Ct. 1174 (1997) (continued...)

interests to be substantial and to be served by the must carry requirements Congress enacted. The Court's decisions were not confined to analog signals; rather, it rejected a facial challenge to carriage requirements that apply to all signals transmitted by local broadcast stations. The Court's conclusion that must carry requirements serve substantial government interests is determinative. There is no basis for revisiting the conclusion here; any such argument must be directed to Congress.

Moreover, the argument is clearly wrong in the case of public television. Carriage requirements for public television stations' digital signals serve all of the interests cited by Congress, including the unique interests applicable to public television.

**A. Future Viability of Public Television Stations**

The future viability of public television depends on cable carriage of digital signals. As the *Turner* evidence demonstrated, public television stations face particular difficulty in obtaining cable carriage.<sup>15</sup> In addition, public television stations have limited financial resources, making cable carriage (and the associated viewer contributions and underwriting revenue) a significant factor in public

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(*"Turner II"*); *Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 622 (1994) (*"Turner I"*).

<sup>15</sup> See, e.g., H.R. Rep. No. 628, at 70; *Turner Broadcasting System, Inc. v. FCC*, 117 S.Ct. 1174, 1193 (1997) (citing data showing that 36 percent of noncommercial stations were not carried by the typical cable system when must carry requirements were not in effect).

television's financial future. In this respect, carriage of its digital signals will be as important to a public television station as carriage of its analog signals.<sup>16</sup>

Public television stations' viability is best defined in terms of the ability to fulfill their educational and public service missions. Public television stations are not "viable" if a substantial number of Americans cannot access all of their services. As described in public broadcasters' opening comments, cable carriage of public television stations' digital signals will be central to public television's ability to fulfill its mission in the coming years. That mission will be frustrated if cable operators can block access by over two-thirds of public television's potential audience.

**B. Preservation of a Multiplicity of Information Sources**

Carriage of public television's digital signals will unquestionably serve the governmental interest in preserving a multiplicity of information sources. Some commenters argue that in recent years broadcasters have offered less local programming, while cable programmers have increased their local programming and added programming geared to niche audiences. Public television, however, continues to offer significant amounts of local programming, as well as services that fill many of the niches cable now claims to fill.<sup>17</sup> Moreover, public television's

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<sup>16</sup> The suggestion of some comments that local television stations are thriving financially and therefore do not need must carry protection for their digital signals clearly does not apply to most public television stations.

<sup>17</sup> Long before a cable service covering Michigan government activities (continued...)

services continue to be unique, due to their noncommercial nature. Each public television station provides a separate information source, presenting programming geared toward a specific audience.<sup>18</sup>

There can be no doubt that carriage of public television digital signals will enhance the diversity of programming. As described in public broadcasters' opening comments, for at least part of the time, most public television stations plan to use their digital capacity for multicasting in order to meet additional needs of their viewers, *e.g.*, for a full schedule of instructional programming or for Spanish language programming.<sup>19</sup> Where a public television station is multicasting, it will be

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came into existence, WKAR, a public television station located in East Lansing, Michigan, provided coverage of Michigan state government activities as part of its locally produced programming. See Declaration of Steven K. Meuche, General Manager of WKAR, ¶¶ 1-3. See also Declaration of Daniel Alpert, Senior Vice President and Assistant General Manager of WTVS (Detroit, Michigan), ¶¶ 1-3 (describing weekly programs addressing current issues facing Detroit). And, while various ethnic and foreign language cable services have started up in recent years, WNVC, a public television station located in Northern Virginia, provides services geared to international expatriates in the Washington, D.C. area, including substantial foreign language programming. See Declaration of M. Peter Downey, Senior Vice President of Program Business Affairs, PBS, ¶ 14. The Declarations of Messrs. Meuche, Alpert, and Downey, part of the record in *Turner II*, were lodged with the Secretary's office as part of Exhibit C to public broadcasters' opening comments.

<sup>18</sup> Where there is more than one public television station in an area, the different stations provide programming directed toward different audiences that fills different needs in the community. For example, the second public television station in a market may focus on instructional programming, on foreign language programming, or on programs geared to a minority audience. *See, e.g.*, Downey Decl. ¶¶ 13-15.

<sup>19</sup> *See* APTS/PBS/CPB Comments, pp. 35-37.

transmitting one or more streams of programming that do not duplicate its analog programming. As an example, Maryland Public Television expects to use its digital signal to multicast four different streams of standard definition television for daytime viewing — a children's channel (PBS Ready to Learn), a Maryland Public Service channel, an educational/instructional channel, and a business and information channel.<sup>20</sup> In addition, over time, public television's digital program services will include special features not available on the analog channel (*e.g.*, integration of data with video programming or HDTV).<sup>21</sup> Thus, even when a public television station is simulcasting, it will be providing a substantially different service on its analog and digital channels.<sup>22</sup>

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<sup>20</sup> Prototype digital program schedules for Maryland Public Television and Oregon Public Television are attached as Exhibit 1 to these reply comments. PBS is planning several new digital television program feeds starting in 1999. Thus, public television stations will have significant new content for multicasting purposes.

<sup>21</sup> *See, e.g.*, APTS/PBS/CPB Comments, p. 38 (describing the features that could be included in a digital broadcast of this fall's PBS special on Frank Lloyd Wright). As public broadcasters explained in their opening comments, the scope of what a cable system must carry will be much broader in the digital world than it is in the analog world, due to the increased capabilities of digital transmission. *See* APTS/PBS/CPB Comments, pp. 35-42.

<sup>22</sup> Several commenters claim that carriage of some digital broadcast signals will reduce diversity because it may crowd out analog signals of other stations. *E.g.*, NCTA Comments, pp. 40-43; TCI Comments, pp. 19-20; Comments of BET Holdings II, Inc. ("BET Comments"), pp. 15-19. This argument does not apply to public television. While Section 4 incorporates a percentage cap on carriage of commercial television stations, Section 5 imposes a different type of limitation. Section 5 requires a cable operator to carry signals of one, two, or more public television stations, depending on the size of the cable system. Thus, adding (continued...)

**C. Fair Competition**

Carriage of public television stations' digital signals will also further the governmental interest in fair competition. Despite arguments of some commenters to the contrary, cable remains a bottleneck. While a few new competitors (such as DBS) have made limited inroads, cable is still in a position to deny broadcasters access to over two-thirds of their potential viewers.<sup>23</sup> As discussed in Section III below, use of antennas and A/B switches is not an effective substitute for cable carriage of digital broadcast signals, particularly in the case of public television stations. Furthermore, as explained above (pages 3-5), reliance on operation of the market will not be sufficient to provide public television stations with access to cable subscribers. Due to the noncommercial nature of public television, cable operators continue to have significant incentives not to carry public television stations' signals, both analog and digital.

**D. Additional Interests Supporting Carriage Requirements for Public Television**

The opponents of digital must carry requirements, with their focus on commercial broadcasting, have overlooked the additional important governmental

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digital signals of local public television stations will not affect a system's obligation to carry signals of any other broadcast stations qualified for carriage.

<sup>23</sup> As many commenters emphasize, if cable is to face effective competition, broadcasters must not be disadvantaged in accessing cable households. *See, e.g.*, Comments of the Association for Maximum Service Television, Inc. ("MSTV Comments"), p. 4; Comments of the National Association of Broadcasters ("NAB Comments"), pp. 18-22.

interest in assuring access to public television services. Congress has stated that the federal government should "support a national policy that will most effectively make public telecommunications services available to all citizens of the United States" and has declared that "it is in the public interest for the Federal Government to ensure that all citizens of the United States have access to public telecommunications services *through all appropriate available telecommunications distribution technologies.*"<sup>24</sup> This broad interest plainly encompasses access by all Americans to the new digital services that public television stations will be providing.

In enacting must carry requirements in 1992, Congress articulated and confirmed the special reasons that support cable carriage of public television services. Congress stressed that public television services must be available on cable because public television's programming helps to advance a "compelling interest" in educating the nation's citizens.<sup>25</sup> This interest plainly applies to public

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<sup>24</sup> 47 U.S.C. § 396(a)(7), (9) (emphasis added).

<sup>25</sup> Congress' statement of findings in the 1992 Cable Act includes the following:

The Federal Government has a substantial interest in making all nonduplicative local public television services available on cable systems because . . . public television provides educational and informational programming to the Nation's citizens, thereby advancing the Government's compelling interest in educating its citizens. . . .

1992 Cable Act, Section 2(a)(8)(A).

television stations' digital signals. In its planning for the digital era, public television has placed special emphasis on using digital technology to expand the educational services public television can offer.<sup>26</sup> If cable operators deny carriage of public television stations' digital signals, teachers and students will be unable to access the enhanced educational services that public television stations plan to offer on their digital channels.<sup>27</sup> Ensuring access to improved educational programming provides an ample basis for implementing cable carriage requirements for the digital signals of public television stations.

In addition, citizens who provide financial support for public television's digital conversion and digital operations should have access to these digital services. As Congress pointed out in the 1992 Cable Act, over the years local citizens and local, state, and federal governments have provided billions of

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<sup>26</sup> Public television's priorities for use of digital technology include expansion of the Ready to Learn service, technology integration in K-12 services provided to schools, and workforce education and training. See APTS/PBS/CPB Comments, pp. 7-8, 38-40. Several months ago, CPB announced that digital projects that emphasize education would be one of its priorities for future television programming grants.

<sup>27</sup> Our nation's schools depend heavily on public television programming. A recent survey assessment prepared by Research Communications Ltd. for Cable in the Classroom showed that teachers using media in the classroom use PBS programming more frequently than any other programming source. In 1998, 64 percent of these teachers reported using PBS programming. Research Communications Ltd., *An Assessment of the Awareness and Use of Cable in the Classroom Services* (1998). PBS programming was also ranked first in the Cable in the Classroom Survey in 1995 and 1996, the only other years in which the survey was conducted.

dollars to support public television.<sup>28</sup> Congress concluded that the citizens who have supported local public television services with their tax dollars and contributions should have access to these services.<sup>29</sup> Consistent with Congress' intent, these citizens — cable and non-cable subscribers alike — should have access to public television's digital services.

**III. USE OF ANTENNAS AND A/B SWITCHES IS NOT AN EFFECTIVE SUBSTITUTE FOR CABLE CARRIAGE OF THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS.**

Some commenters contend that must carry requirements for digital broadcast signals are unnecessary because cable subscribers will be able to receive these signals over the air through use of antennas and A/B switches.<sup>30</sup> However, Congress in 1992 rejected similar arguments, finding that most cable subscribers do not have antennas or A/B switches, that cable carriage is ordinarily the most efficient way to distribute television programming, and that a government mandate for use of A/B switches and antennas was not a practical substitute for must carry

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<sup>28</sup> In finding that cable carriage requirements for local public television services were in the public interest, Congress pointed out that, in addition to more than \$10 billion in local taxes and voluntary citizen contributions that had supported public television, the federal government had invested more than \$3 billion in public broadcasting since 1969, "in recognition of public television's integral role in serving the educational and informational needs of local communities." 1992 Cable Act, Section 2(a)(8)(B), (C).

<sup>29</sup> See 1992 Cable Act, Section 2(a)(8)(D).

<sup>30</sup> See, e.g., Comments of Adelphia Communications Corp., et al. ("Adelphia Comments"), p. 20; Time Warner Comments, pp. 7-8; Comments of Discovery Communications Inc. ("Discovery Comments"), pp. 25-26.

requirements.<sup>31</sup> The Supreme Court in *Turner II* concluded that Congress' decision was based on substantial evidence and that additional evidence introduced on remand confirmed the reasonableness of that judgment.<sup>32</sup>

Commenters in this proceeding argue that technical improvements since 1992 have made A/B switches more usable and that over-the-air reception is now a viable alternative for digital broadcast signals.<sup>33</sup> They are wrong. As public broadcasters and others pointed out in their opening comments, there continue to be significant drawbacks to the use by cable subscribers of antennas and A/B switches.<sup>34</sup>

At least some of the concerns that Congress cited in 1992 remain valid today. The 1992 House committee report noted, among other things, that cable systems had long encouraged the removal of antennas and that cable subscribers appeared unwilling to bear the additional expense of maintaining

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<sup>31</sup> 1992 Cable Act, Section 2(a)(17), (18).

<sup>32</sup> *Turner II*, 117 S.Ct. at 1201. The Supreme Court noted, among other things, that cable representatives themselves had previously argued against the use of A/B switches.

<sup>33</sup> *E.g.*, Comments of Ameritech New Media ("Ameritech Comments"), pp. 26-28; CATA Comments, pp. 26-29; Comments of HBO and Turner Broadcasting System, Inc. ("HBO/TBS Comments"), p. 29.

<sup>34</sup> *See* APTS/PBS/CPB Comments, pp. 48-49; Comments of The Association of Local Television Stations ("ALTV Comments"), pp. 78-90; MSTV Comments, pp. 48-49; Sony Comments, p. 9.

antennas.<sup>35</sup> As the attached Affidavit of John Tollefson explains, most cable subscribers today do not maintain terrestrial antennas, and there is still extra cost and inconvenience associated with use of an antenna and A/B switch.<sup>36</sup> At a minimum, a cable subscriber will likely need to purchase, install, and maintain an antenna. Moreover, while A/B switches may be easier to use now than they were six years ago, not all digital sets will have state of the art internal, remote controlled switches. In addition, use of a switch to navigate multiple layers of on-screen menus will present a challenge that many consumers may be unable or unwilling to master. Cable subscribers are still accustomed to receiving all television programming via cable. It will not be easy to modify longstanding habits. Significant consumer re-education would be needed to convince cable subscribers to move back to a more cumbersome method of accessing broadcast signals.<sup>37</sup>

The commenters that argue in favor of antennas and A/B switches as an alternative to must carry requirements also disregard other channel navigation

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<sup>35</sup> H.R. Rep. No. 628, at 54. The report also noted that the Commission's efforts to promote use of A/B switches had been unsuccessful. *Id.*

<sup>36</sup> Affidavit of John Tollefson ("Tollefson Aff.") ¶ 5. Many television viewers subscribe to cable because they are unable to receive a usable over-the-air signal, a problem that digital television may not resolve. *Id.* ¶ 4. The Affidavit of Mr. Tollefson, Vice President and Chief Technology Officer of PBS, is attached as Exhibit 2 to these reply comments.

<sup>37</sup> *Id.*

difficulties. Cable systems present their subscribers with a unified program guide, and subscribers use this program listing to locate channels. Local broadcast channels received over the air will not be part of that program guide and thus will be excluded from the universe to which the subscriber initially turns for guidance. The exclusion from cable's program guide imposes enormous disadvantages on any local broadcaster that must rely on over-the-air reception to reach cable viewers.<sup>38</sup>

Time Warner points out that DBS subscribers must receive local broadcast signals over-the-air and argues that this proves that cable subscribers could do the same.<sup>39</sup> However, DBS subscribers are a relatively small group, and there is no indication that their behavior is necessarily similar to that of cable subscribers.<sup>40</sup> Moreover, there is no evidence that DBS subscribers in fact regularly locate and access local broadcast signals over-the-air. Congress apparently did not believe that over-the-air reception was sufficient to provide these subscribers with

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<sup>38</sup> *Id.* ¶ 8.

<sup>39</sup> Time Warner Comments, p. 8 & attached Affidavit of David J. Large, pp. 17-18. Time Warner also argues that it will be feasible for cable subscribers to use antennas to receive off-air digital signals because the Commission has set aside legal restrictions on the use of antennas, citing 47 C.F.R. § 1.4000. *See* Time Warner Comments, p. 22 n.21. However, not all restrictions have been eliminated; among other things, the Commission decided recently not to require landlords to provide video programming reception equipment to tenants. *See* Second Report and Order, CC Docket No. 96-83 (rel. Nov. 20, 1998), at ¶¶ 33 *et seq.* Those restrictions that have not been preempted could leave large numbers of cable viewers without effective off-air reception.

<sup>40</sup> Tollefson Aff. ¶ 11.

access to public television. At the same time it enacted cable carriage requirements, Congress required DBS operators to carry noncommercial educational programming on a portion of their capacity.<sup>41</sup>

As noted in public broadcasters' opening comments, there is an additional difficulty that public television stations face. There are early indications that digital television signals are vulnerable to the problem of misaligned receive antennas.<sup>42</sup> The transmitters of many public television stations, particularly those operated by state networks and university licensees, are located apart from clusters of commercial station transmitters. Cable subscribers with antennas presumably will orient them toward clusters of transmitters, thereby obtaining the best reception for the greatest number of stations, but causing the local public television station to be "off-beam." Thus, even if they acquired antennas and overcame the other hurdles described above, cable subscribers might be unable to receive their local public television station unless they purchased and used an antenna rotating system.<sup>43</sup> In some cases, however, such as in multiple television households, even an antenna rotating system may not solve the problem.<sup>44</sup> An A/B switch obviously

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<sup>41</sup> See 1992 Cable Act, Section 25. The constitutionality of this requirement was affirmed in *Time Warner Entertainment Co., L.P. v. FCC*, 93 F.3d 957, 973-77 (D.C. Cir. 1996).

<sup>42</sup> See APTS/PBS/CPB Comments, pp. 48-49.

<sup>43</sup> Tollefson Aff. ¶ 9.

<sup>44</sup> *Id.* ¶ 10.

cannot provide access to a digital signal when the antenna is not receiving the signal.

At a minimum, the requirement that a cable subscriber use an A/B switch and antenna places broadcast programming at a distinct disadvantage to cable programming. Because of the need to use a switch, as a practical matter cable subscribers will not access the digital signal transmitted by their local public television station. As a result, Congress' mandate that all citizens have access to public television services will be frustrated.

#### **IV. CARRIAGE OF PUBLIC TELEVISION STATIONS' DIGITAL SIGNALS WILL NOT ENTAIL ANY SIGNIFICANT BURDEN ON CABLE.**

A number of cable commenters argue that requiring cable systems to carry broadcasters' analog and digital signals would be burdensome and detrimental to consumers, cable programmers and cable operators.<sup>45</sup> Proponents of this view completely disregard the minimal nature of public television's carriage needs. They also rely on a static view of the digital environment, ignoring the impact of upgrades and compression techniques on cable's ability to accommodate public television's digital signals.

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<sup>45</sup> *E.g.*, NCTA Comments, pp. 40-43; GTE Comments, pp. 20-23; TCI Comments, pp.19-22. Of course, any burden on cable operators is simply a function of the burden the Commission has imposed on broadcasters to transmit both an analog signal and a digital signal simultaneously.

**A. Carriage of Public Television Digital Signals**

Public broadcasters' opening comments explained that carriage of qualified public television stations' digital signals would not impose any significant burden on cable systems. Only about one fourth of public television licensees expect to begin digital broadcasting by the year 2000, and more than half do not expect to begin until 2003.<sup>46</sup> Moreover, the total number of public television digital signals ultimately carried by cable would be quite small, requiring most cable systems to add only one or two public television digital signals during the transition.<sup>47</sup> These two factors alone — the gradual nature of public television's digital rollout and the limited number of stations eligible for carriage on each cable system — refute any notion that carriage of a qualified public television station's digital signal would be unreasonably burdensome.

Moreover, the approach to cable carriage during the transition that public broadcasters proposed in their opening comments is designed to minimize the burden on cable. Under public broadcasters' proposal, the Commission would employ an exemption/waiver process for those limited instances in which carriage of a public television station's digital signal would be truly burdensome. Under this process, the Commission could take into account the size of the cable system, any technical limitations on the system's ability to transmit digital signals, unusual

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<sup>46</sup> APTS/PBS/CPB Comments, p. 32.

<sup>47</sup> *Id.*, p. 31 & Ex. E.

financial circumstances, and whether the system had unused channels on July 10, 1998, or had added capacity since that date.<sup>48</sup> Such a process would address the concerns raised by small cable systems, including the Small Cable Business Association.<sup>49</sup>

### **B. Cable Capacity**

Those who complain about the great burden that would be imposed by digital must carry requirements erroneously assume that cable capacity will remain static. They assert, for example, that channel capacity restraints "today" would require cable systems to drop more than a dozen or so channels of cable programming, or that digital must carry requirements would "double cable carriage obligations."<sup>50</sup> Of course, due to the phased rollout prescribed by the Commission, there will be no "doubling" of obligations in the near future. Moreover, as explained in a number of parties' opening comments, over the next few years, as digital broadcasting begins, cable systems will have substantially expanded their

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<sup>48</sup> In this context, the Commission should make clear that a cable channel is not "used" simply because, *e.g.*, a cable operator includes a placeholder message on the screen.

<sup>49</sup> *See, e.g.*, SCBA Comments, pp. 3-4; Comments of Armstrong Holdings, Inc. and InterMountain Cable, Inc., pp. 42-43; Comments of John D. Pellegrin, Chartered, pp. 4-5. The exemption/waiver process proposed by public broadcasters would not require large filing fees and would not be any more burdensome (and, indeed, would be more reliable) than the "certification" process proposed by SCBA. *See* SCBA Comments, pp. 18-19.

<sup>50</sup> NCTA Comments, pp. 41-42 (describing capacity restraints today); HBO/TBS Comments, p. 27 (same).

capacity.<sup>51</sup> In addition, likely improvements in digital encoding and compression techniques will enable cable systems to dramatically increase their useable channel capacity.<sup>52</sup> These upgrades should readily accommodate public television's digital signals throughout the transition and permit the addition of new cable services.

Cable operators argue that they have plans to fill up any new capacity with (primarily cable) programming for which there is consumer demand.<sup>53</sup> Cable programmers further claim that mandatory cable carriage of broadcasters' digital signals would impair the ability of "emerging cable networks to obtain additional carriage."<sup>54</sup> But there will always be more cable networks than cable capacity; the

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<sup>51</sup> According to their own descriptions, the largest cable systems, which together serve the most subscribers, have undertaken substantial efforts to increase their capacity. For example, Time Warner has spent over \$2 billion to upgrade its systems to 750 MHz and expects 70 percent of its systems to be upgraded by the end of 1998; TCI has announced that by year-end 2000, all TCI metropolitan areas will have a 750 MHz plant and TCI suburbs will have at least a 550 MHz plant; and Comcast has estimated that by year-end 1998 approximately 80 percent of its plant will be upgraded, with a majority of its systems providing 750 MHz capacity. See APTS/PBS/CPB Comments, pp. 29-32, nn.49-51; NAB Comments, p. 34 (attaching study prepared by Strategic Policy Research, Inc.); MSTV Comments, pp. 50-51. See also Cauley, "TCI Group Tallies Digital Subscribers at 1 Million and Posts \$52 Million Net," Wall Street Journal, Nov. 16, 1998, at B11 (TCI expects 80% digital penetration over five years).

<sup>52</sup> As NAB and other commenters emphasize, current digital encoding methods allow cable systems to send two broadcast digital signals over one 6 MHz cable channel. See, e.g., NAB Comments, pp. 30-31. "Statistical multiplexing" can also be used to allow even more signals to be carried in one 6 MHz channel. *Id.*

<sup>53</sup> See, e.g., NCTA Comments, pp. 40-42.

<sup>54</sup> E.g., Discovery Comments, p. 21. Discovery is vertically integrated (continued...)

comments indicate that, in addition to new cable programmer entrants, existing cable networks aspire to place multiple services.<sup>55</sup> Moreover, cable's insistence on reserving all of its new capacity disregards the strong governmental interest in universal access to public television services. Unless cable carries public television's digital signals, the two-thirds of consumer households that receive television only through cable will not have access to important new services, and public television will be unable to fulfill its educational and public service missions. Moreover, without cable carriage, public television digital services will not be viable, making them unavailable to non-cable households as well.

Moreover, in some cases, the alleged shortage of cable capacity flows directly from the conscious business decisions that cable operators have made, rather than from any technical barriers. For instance, while cable commenters decry a shortage of capacity, their comments indicate that some systems now possess unused channel capacity that they intend to use to offer high-speed data services, including "modem and telephony services," as well as pay-per-view and

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with cable operators Liberty Media, Cox Communications and Newhouse Communications.

<sup>55</sup> See Discovery Comments, pp. 3-4 (describing, in addition to Discovery Channel, The Learning Channel, and Animal Planet, plans for future networks, including Discovery Kids Channel, Discovery Science Channel, Discovery Home & Leisure Channel, Discovery Civilization Channel, Discovery Wings Channel, and Discovery Health Channel).

"near video on demand services."<sup>56</sup> In comments filed with the Commission in other proceedings, TCI, Cablevision, MediaOne, and Time Warner have all proclaimed a desire to use their excess bandwidth to engage in commerce of this kind.<sup>57</sup> In particular, TCI has expanded its cable capacity to provide not only "hundreds of new video channels,"<sup>58</sup> but "high-speed interactive and cable Internet services"<sup>59</sup> and "cable telephony,"<sup>60</sup> as well as "shopping, on-line banking and other electronic commerce transaction."<sup>61</sup> It is disingenuous for the cable commenters to complain in this proceeding about a shortage of capacity they themselves are creating.

**C. C-SPAN**

C-SPAN in particular argues vehemently against must carry requirements, predicting that its programming will be dropped from some systems

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<sup>56</sup> NCTA Comments, p. 42.

<sup>57</sup> Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 7065 of the Telecommunications Act of 1996, CC Docket No. 98-146, Comments of Tele-Communications, Inc., pp. 4-9; Comments of Cablevision, pp. 2-3; Comments of MediaOne, pp. 3-7; Comments of Time Warner, p. 4. *See also* NCTA Comments, Appendix 1, in the same docket.

<sup>58</sup> Comments of Tele-Communications, Inc., p. 5, in CC Docket No. 98-146.

<sup>59</sup> *Id.*, p. 5.

<sup>60</sup> *Id.*, pp. 5, 7.

<sup>61</sup> *Id.*, p. 7.

if cable operators are required to carry digital broadcast signals. As explained above, most cable systems should be able to carry the digital signals of public television stations without dropping any cable programming. Even if its predictions were credited, however, C-SPAN would likely recoup any losses quickly, particularly in view of the fact that it enjoys cable industry sponsorship. Indeed, the *Turner II* evidence showed that, after the 1992 Cable Act went into effect, C-SPAN's programming was dropped by only a few cable systems and that, within a year, both C-SPAN and C-SPAN 2 had experienced significant increases in cable carriage compared with pre-must carry levels.<sup>62</sup>

Public broadcasters are by no means unsympathetic to the concerns C-SPAN expresses. Indeed, public television's situation is similar in certain respects. Like public television, C-SPAN provides a valuable public service and should be available to cable subscribers. And, like public television, C-SPAN is a noncommercial service; thus, cable operators have incentives not to carry it, finding it more lucrative to carry the Golf Channel, the Playboy adult channel, a pay-per-view service, or some other commercial service.

Of course, C-SPAN has one important advantage over public television stations – it is owned and subsidized by cable companies. Public television stations, without such influential sponsorship, are at much greater risk of being excluded from cable line-ups. C-SPAN's concerns simply reinforce the conclusion

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<sup>62</sup> See NAB Comments, Appendix F.

that public television stations have a strong need for must carry protection for their digital signals.

If cable carriage of public television's digital broadcast signals during the transition in fact causes some cable systems to drop C-SPAN or C-SPAN 2, those public television stations that obtain carriage of their digital signals may be in a position to assist C-SPAN. At least during the transition period, a public television station might find it feasible to carry C-SPAN or C-SPAN 2 on one of its multicast channels. This would allow viewers to have access both to the digital programming provided by the public television station and to C-SPAN programming that might otherwise be dropped.

**V. THERE IS NO LEGAL BASIS FOR DELAYING APPLICATION OF MUST CARRY REQUIREMENTS TO PUBLIC TELEVISION STATIONS' DIGITAL SIGNALS.**

**A. The 1992 Cable Act Requires Cable Carriage of Digital Signals of Public Television Stations.**

Cable commenters argue that the cable carriage requirements Congress enacted in 1992 do not extend to digital broadcast signals. However, Sections 4 and 5 of the 1992 Cable Act on their face are not limited to analog signals. Both sections provide that the "signals" of local broadcast stations must be carried,<sup>63</sup> and neither the language nor the legislative history of the statute indicates that Congress meant to refer only to analog signals. The contention that

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<sup>63</sup> For example, Section 5(a) of the 1992 Cable Act, 47 U.S.C. § 535(a), states that "each cable operator of a cable system shall carry the signals of qualified noncommercial educational television stations in accordance with the (continued...)"

such a limitation should be inferred is (to use NCTA's phrase) a "wish-upon-a-statute" argument.<sup>64</sup>

Some cable commenters cite language in Section 4(b)(4)(B) of the 1992 Cable Act as support for their interpretation.<sup>65</sup> They argue that Congress' reference to revision of cable carriage rules for broadcast signals that "have been changed" to conform with modified standards indicates that any digital must carry rules are to apply only to the period following completion of the digital transition.<sup>66</sup> There is no basis for such a reading, and it is contrary to the sense of the section as a whole.

Under Section 4(b)(4)(B), the Commission is to modify its must carry rules pursuant to a proceeding begun at the time the Commission prescribes modification of the standards for broadcast signals, *i.e.*, at a point before the digital transition begins. There would be no reason to require initiation of a rulemaking at this early stage if the revised must carry rule were not to become effective until years later, when the transition was complete. Moreover, contrary to the suggestion of some commenters, the change in the rules is to apply to "signals"

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provisions of this section."

<sup>64</sup> See NCTA Comments, pp. 18-19.

<sup>65</sup> *E.g.*, NCTA Comments, pp. 9-10; CATA Comments, pp. 11-13; TCI Comments, pp. 8-9; Time Warner Comments, pp. 31-33.

<sup>66</sup> *E.g.*, NCTA Comments, p. 10; Time Warner Comments, p. 31.

that have been changed, not to "stations" that have been changed.<sup>67</sup> Thus, the new rule would apply to any "advanced" television signal, whether or not a station was still broadcasting an old (analog) signal. In addition, since analog signals themselves do not "change" as part of the transition, Section 4(b)(4)(B) cannot refer to the point at which a station ceases analog broadcasting.

The House Report makes clear that the point of Section 4(b)(4)(B) was merely to authorize the Commission to establish "technical standards" for carriage of advanced television signals, not to negate the application of the must carry requirements to some signals during the transition period.<sup>68</sup> Such technical standards presumably would be applied whenever a station begins to broadcast a digital signal and seeks cable carriage for it. The Senate and Conference Reports confirm that Section 4(b)(4)(B) was not designed as a vehicle for cutting back on the basic mandate for cable carriage of "signals," but was intended to "ensure that cable systems will carry" the signals that comply with the Commission's advanced television standards.<sup>69</sup>

In support of their statutory interpretation argument, some commenters also point to Section 4(b)(7), which requires that cable subscribers be

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<sup>67</sup> The legislative history confirms that this is the proper reading of the statutory language. *See, e.g.*, S. Rep. No. 92, 102d Cong., 1st Sess. 85 (1991) (referring to "television signals complying with such modified standards").

<sup>68</sup> H.R. Rep. No. 628, at 94.

<sup>69</sup> *See* S. Rep. No. 92, at 85; H.R. Rep. No. 862, at 67.

able to receive all signals subject to the cable carriage requirement, even if this requires provision of a converter box. These commenters claim that Congress could not have meant to require carriage of digital broadcast signals, because consumers cannot view digital signals without additional equipment.<sup>70</sup>

This argument turns Section 4(b)(7) on its head. The point of that provision is to ensure that cable operators take the steps (including purchase of conversion equipment) necessary to ensure that every subscriber is able to view broadcast signals subject to the carriage requirement. The point is not to permit the operator to *avoid* the carriage requirement on the ground that a cable subscriber would need conversion equipment to view the signal.

Cable commenters also seek support for their statutory interpretation in Congress' failure to state explicitly that cable carriage requirements will apply to both analog and digital broadcast signals during the transition period.<sup>71</sup> But the statute on its face refers to carriage of "signals," not to carriage of a particular type of signal. In these circumstances, there is no reason for Congress to state, either in statutory language or legislative history, that both types of signals are to be carried during the transition.

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<sup>70</sup> *E.g.*, NCTA Comments, p. 15; Time Warner Comments, p. 47.

<sup>71</sup> *E.g.*, NCTA Comments, p. 8; Time Warner Comments, p. 34; CATA Comments, p. 11.

In fact, because the statute broadly requires carriage of all signals, it is logical to expect that Congress would speak only if it did *not* intend that cable operators carry both analog and digital signals during the transition. In both Section 4 and Section 5, Congress explicitly placed various limitations on the basic cable carriage obligations. It did not refer to any limitation for the transition period, although it was then aware of the Commission's plans for the introduction of advanced television.<sup>72</sup> The 1992 Cable Act should therefore be read consistently with its plain terms – to require carriage of all signals transmitted by qualified local broadcast stations, both during the transition period and thereafter.

**B. Provision of Must Carry Protection for Public Television Stations' Digital Signals Does Not Raise Constitutional Concerns.**

Cable commenters also argue that application of the must carry requirements to digital broadcast signals would be unconstitutional under the Supreme Court's *Turner* decisions.<sup>73</sup> As shown above and in public broadcasters' opening comments, however, digital must carry requirements for public television

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<sup>72</sup> Again appropriating NCTA's phrase (NCTA Comments, p. 9), this is the "dog that did not bark."

Committee reports accompanying the 1996 Telecommunications Act and the 1997 Balanced Budget Act state that the provisions of those statutes were not intended to address the must carry status of advanced television. See H.R. Rep. No. 458, 104th Cong., 2d Sess. 161 (1996); H.R. Rep. No. 217, 105th Cong., 1st Sess. 577 (1997). Those reports make no reference to, and in no way undercut, the basic must carry requirements of the 1992 Cable Act.

<sup>73</sup> *E.g.*, NCTA Comments, pp. 21-22; Time Warner Comments, pp. 14-15.

are entirely consistent with the *Turner* standard. Such requirements serve substantial government interests; there is no alternative that would serve those interests as effectively; and any burden imposed on cable will be minimal.

Some commenters insist, however, that digital must carry requirements could not be found constitutional because, in contrast to the extensive record in *Turner*, there is no factual record with respect to digital broadcast signals.<sup>74</sup> This argument is without merit. The Supreme Court has already ruled on the constitutionality of the 1992 must carry provisions, based on an extensive factual record. No further factual showing is needed in connection with the application of those same provisions.

Moreover, as explained in public broadcasters' opening comments, much of the record compiled by Congress in connection with passage of the 1992 Cable Act, as well as the additional evidence submitted by broadcasters in *Turner II*, supports the application of must carry requirements to the digital signals of public television stations.<sup>75</sup> The problems public television stations encountered in obtaining carriage of their analog signals are themselves clearly sufficient to support a prediction of even greater difficulties with digital signals. The same market dynamics and cable operator incentives with respect to public television

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<sup>74</sup> *E.g.*, NCTA Comments, pp. 22-23; CATA Comments, p. 16; TCI Comments, p. 12.

<sup>75</sup> APTS/PBS/CPB Comments, pp. 16-19.

operate in the digital world as in the analog world of 1992. Indeed, as public broadcasters' opening comments note, cable operators today have even greater incentives not to carry public television services.<sup>76</sup>

Furthermore, although digital broadcasting is just beginning, there are already signs that public television stations will have difficulty persuading cable operators to carry their digital services. Just a few months ago, NCTA's president orally advised APTS' president that NCTA would not support mandatory carriage of public television stations' digital signals. And early overtures by some public television stations to their local cable systems have been largely unsuccessful. Most cable operators have responded that they will not provide carriage until the Commission orders it.

Of course, even if the Supreme Court had not determined the constitutionality of the must carry requirements in *Turner II*, and even if there were no factual record relevant to public television stations' digital signals, this would not bar the application of the statute to those signals. It is well established that Congress may legislate to prevent future evils based on predictive judgments when a complete factual record is not available.<sup>77</sup> Likewise, Congress may regulate new and rapidly changing technologies, even before there is a full record of experience

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<sup>76</sup> *Id.* at 21-22.

<sup>77</sup> *See Turner II*, 117 S.Ct. at 1189.

with those technologies.<sup>78</sup> The Commission may also regulate in areas where it is difficult to compile a record of specific abuses or in a rapidly developing field where the agency must draw on analogies.<sup>79</sup>

Here the Supreme Court, in response to a facial challenge, has ruled that the must carry requirements are constitutional, and there is extensive support for the conclusion that application of those requirements to public television's digital signals satisfies the *Turner* standard. In these circumstances, there can be no constitutional objection to such regulation.<sup>80</sup>

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<sup>78</sup> See *id.* at 1189, 1203.

<sup>79</sup> See *FCC v. National Citizens Committee for Broadcasting*, 436 U.S. 775, 797, 813-14 (1978); *Melcher v. FCC*, 134 F.3d 1143, 1152 (D.C. Cir. 1998); *Tribune Co. v. FCC*, 133 F.3d 61, 64 (D.C. Cir. 1998).

Several commenters cite *Century Communications Corp. v. FCC*, 835 F.2d 292 (D.C. Cir. 1987), *cert. denied*, 486 U.S. 1032 (1988), and *Quincy Cable TV v. FCC*, 768 F.2d 1434 (D.C. Cir. 1985), *cert. denied*, 476 U.S. 1169 (1986), for the proposition that a more extensive factual record concerning digital broadcasting is required. However, the court in *Century* suggested that the Commission would be entitled to use analogies to related situations to support its judgments (835 F.2d at 300) and that deference to the agency's judgment would be appropriate where "complete factual support . . . is not possible" (*id.* at 304). See also *Quincy*, 768 F.2d at 1457-58. Thus, *Century* and *Quincy* support the Commission's reliance on the experience with analog signals and its exercise of predictive judgment where digital broadcasting is in its infancy.

<sup>80</sup> Arguments that imposition of digital must carry requirements would amount to a violation of the Fifth Amendment are without merit. Time Warner pressed such a theory in the *Turner* litigation, but it was not accepted. There is no basis for a different result here.

**VI. THE COMMISSION MUST ACT PROMPTLY TO APPLY THE MUST CARRY REQUIREMENTS TO THE DIGITAL SIGNALS OF PUBLIC TELEVISION STATIONS.**

As explained in public broadcasters' opening comments, the Commission should act promptly to implement must carry requirements for digital signals of public television stations.<sup>81</sup> The expensive process of digital conversion will strain the limited financial resources available to public television. In order to obtain the necessary funding, public television stations will need to demonstrate that their signals will be available to cable viewers. Moreover, viewer access to digital signals is critical to public television's ability to provide enhanced educational and public service programming during the transition. Without an assurance of cable carriage, public television stations will be unable to take advantage of digital's promise or complete a successful transition to digital.

Public television strongly supports the digital transition and has significant plans to provide viewers with the benefits of new digital capabilities. The opening comments of cable industry members, however, raise strong concerns about cable's participation in the transition. Cable commenters argue that the technological and commercial uncertainty that surrounds digital broadcasting provides justification for the Commission to refrain from taking action in this proceeding.<sup>82</sup> However, much of the commercial uncertainty associated with

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<sup>81</sup> APTS/PBS/CPB Comments, pp. 2-3.

<sup>82</sup> *See, e.g.,* Adelphia Comments, pp. 24-25; CATA Comments, pp. 4-5; (continued...)

digital broadcasting results from cable's unwillingness to commit to carriage of digital signals. Ultimately, it is crucial that cable recognize the important role it must play in the digital transition.<sup>83</sup>

The lack of digital must carry requirements forces public television stations into an untenable situation, in which they must spend millions of dollars on a service for which they can count on access by only 30 percent of the potential audience. The reality is that, without a requirement of cable carriage for digital broadcast signals, a speedy transition is unattainable, and the Commission's construction deadlines become unreasonable. It is entirely unworkable to wait until the transition succeeds before promulgating digital must carry requirements, as cable commenters suggest. Without such rules, the transition will not succeed.

The cable comments also reinforce the need for the Commission to exert pressure on the cable industry to work with equipment manufacturers and broadcasters to achieve digital interoperability. Public broadcasters are concerned that, given cable's incentives to disadvantage broadcasters, cable will seize on the complexities of interoperability as a reason to delay resolution of critical technical

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TCI Comments, p. 15. Some of these commenters appear not to take seriously the deadlines the Commission has set for the transition.

<sup>83</sup> The Commission has emphasized that "participation by the cable industry during the transition period is likely to be essential to the successful introduction of digital broadcast television and the rapid return of analog spectrum to the Commission." See Fourth Further Notice of Proposed Rulemaking, MM Docket No. 87-268, 10 FCC Rcd. 10540, 10542 (1995).

issues. Public broadcasters agree with MSTV and others that the Commission must ensure that consumers can receive digital transmissions fully and seamlessly.<sup>84</sup> The Commission should establish deadlines for steps toward the achievement of this goal and should make clear that it will impose regulatory solutions if the parties do not achieve prompt, satisfactory progress.

Digital technology is public television's future. Without cable carriage of their digital signals, public television stations will be unable to fulfill their educational and public service missions. Public broadcasters' opening comments set forth a detailed proposal for implementation of must carry requirements during the transition period, reflecting an effort to ensure maximum access to public television stations' digital services, consistent with the congressional mandate of universal access, while minimizing the burden on cable. Public broadcasters urge the Commission to review this proposal promptly, and to implement its terms as soon as possible, so that all Americans will have access to these services.

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<sup>84</sup> See MSTV Comments, pp. 40-44.

## CONCLUSION

For the reasons stated above and in public broadcasters' opening comments, the Commission should act promptly to promulgate rules implementing cable carriage requirements for the digital signals of public television stations.

Respectfully submitted,

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December 22, 1998

**EXHIBIT 1**

**Maryland Public Television  
Oregon Public Television**

**Prototype Digital Schedules**

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# DIGITAL TELEVISION – EXPANDING PUBLIC BROADCASTING’S REACH AND MISSION

Creating a local schedule to meet local needs.

## ANALOG

Current system,  
One channel, No HDTV

### MPT

PBS National Program Service

*Charlie Horse Music Pizza*

*Barney & Friends*

*Sesame Street*

*The Puzzle Place*

*Reading Rainbow*

*Teletubbies*

*Wimzie’s House*

*Arthur*

*Kratts’ Creatures*

*Wishbone*

*Bill Nye the Science Guy*

*The NewsHour with Jim Lehrer*

*Newsnight Maryland*



Maryland Public  
Television

### NOVA

*Great Performances*

*In the Footsteps of  
Alexander the Great*

Maryland  
Public  
Television  
(MPT)  
sample  
program  
schedule  
shown for  
illustrative  
purposes  
only.

## DIGITAL TELEVISION

DTV will allow MPT to multicast four different streams of standard definition television (SDTV) signals simultaneously, and then switch to one high definition television (HDTV) signal during prime time hours.

### MULTICASTING:

#### MPT - 2

Maryland Public Service

*Maryland State Circle*

*Maryland Public Affairs*

*Local*

*Government*

*Hearings*

*Outdoors Maryland*

*Electronic Town Hall Meetings*

*Healthy Community Initiatives*

*State Legislature*

*Maryland Congressional Review*

**NEWSNIGHT MARYLAND**

*In-depth  
public  
affairs  
& state  
news*



#### MPT - 3

Educational / Instructional

*Intro to Spanish*

*French in Action*

**MARYLAND STATE OF  
MIND**

*from  
Univ.  
of  
Md.*



*Computers @ School*

*GED*

*Basic Math*

*Maryland History*

*Space Tech*

*Discovering Psychology*

*Teacher Techniques*

*Nutrition Mission*

*ABC: Learn to Read*

#### MPT - 1

Children’s Channel  
PBS Ready To Learn

*Charlie Horse Music Pizza*

*Barney & Friends*

*Sesame Street*

*The Puzzle Place*

*Reading Rainbow*

*Teletubbies*

*Wimzie’s House*

**ARTHUR**

*Popular  
award-  
winning  
children’s  
show*



*Kratts’ Creatures*

*Wishbone*

*Bill Nye the Science Guy*

*Tots TV*

### HIGH DEFINITION TV:

#### NOVA

*Great Performances*

*In the Footsteps of Alexander the Great*

### DATACASTING OPTIONS:

Available while broadcasting in HDTV or SDTV

- Descriptive Video
- Closed Captioning
- Interactive Q & A
- Web Content
- Spanish
- Curriculum

#### MPT - 4

Business & Information

*Morning Business Report*

*Life on the Internet*

*Ancestors*

*Religion & Ethics Newsweekly*

*Chesapeake Bay Cooking*

*Baking with Julia*

*Healthweek*

*The Parenting Puzzle*

*MotorWeek*

*Wall Street Week*

*The  
NEWS  
HOUR  
with  
Jim  
Lehrer*



*Washington Week in Review*

## OPB-TV ATV Digital Channels Prototype Schedule A

TIME	Ready To Learn	Adult Education	Ready To Earn	How-to & Lifestyles
0600	Plaza Sesamo	Destinos (Beginning Spanish)	OGI Telecourse # 1	Trailside
0630	Storytime	Destinos (Advanced Spanish)	OGI Telecourse # 2	On the Internet
0700	Sesame Street	Alles Gute (German)	Nursing 1	Computer Chronicles
0730		Learn Japanese	Nursing 2	Motorweek
0800	Barney & Friends	French in Action	Business File	Best of Joy of Painting
0830	Lamb Chop	Beginning Chinese (Mandarin)	Business & Law	Simply Painting Watercolor
0900	Shining Time Station	Personal Finances	The Sales Connection	Jenkins Art Workshop
0930	Puzzle Place	Discovering Psychology	Small Business Today	Welcome to My Studio
1000	Wishbone	Pacific Century Telecourse	Oregon Center Advanced Tech Educ (OCATE)	Sewing with Nancy
1030	Newton's Apple		Educational Tech: What's New	Quilt in a Day
1100	Mister Rogers	Economics USA	Rural Communities Legacy & Change	Sewing Connection
1130	Magic School Bus	Inside the Global Economy		The Collectors
1200	Dudley Dragon	Literary Visions	PSU Graduate Level # 1	Victory Garden
1230	Katie & Orbie	Writers Exchange	U of O Microbiology Graduate Course	New Garden
1300	Storytime (R)	News Writing	Paralegal In-Service	Naturescene
1330	Kratt's Creatures	The Earth Revealed		Wild Kingdom
1400	Arthur	Planet Earth	Oregon Center Advanced Tech Educ (OCATE)	Pierre Franey
1430	Dragon Tales	Living With Health	Daycare Provider Training	Hawaii Cooks
1500	Sesame Street (R)	The Western Tradition (Part 2)	Introduction to Computer Programming	Chef Prudhomme
1530		Works in Progress	Intermediate Computer Programming	Yann Can Cook
1600	Reading Rainbow	Faces of Culture	Special Events TBA Video Conferences	Woodwright
1630	Wishbone (R)	College Algebra		New Yankee Workshop
1700	Bill Nye the Science Guy	Ethics in America - Telecourse	Teacher In-Service # 1 (PSU)	This Old House
1730	Where In Time Is Carmen Sandiego?		Teacher In-Service # 2 (PSU)	Hometime

**EXHIBIT 2**

**Affidavit of John Tollefson,  
Vice President and Chief Technology Officer  
PBS**

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554

In the Matter of )  
)  
Carriage of the )  
Transmissions of Digital )  
Television Broadcast ) CS Docket No. 98-120  
Stations )  
)  
Amendments to Part 76 of )  
the Commission's Rules )

AFFIDAVIT OF JOHN D. TOLLEFSON

COMMONWEALTH OF VIRGINIA, )  
)  
CITY OF ALEXANDRIA, ) ss.:

JOHN D. TOLLEFSON, being duly sworn, deposes and states as follows:

1. I am Vice President and Chief Technology Officer of the Public Broadcasting Service ("PBS"), a private, non-profit membership organization that provides national program distribution and other program-related services to virtually all of the nation's public television stations and to the general public. In my position, I supervise PBS's technology, engineering and operations staffs. I have held the position of Vice President and Chief Technology Officer since 1997.

2. Prior to joining PBS, I spent 35 years in a variety of television and radio engineering capacities, including Engineering Manager for Westinghouse Broadcasting, Engineering Manager for Post Newsweek stations, and Vice President and Director of Engineering for Allbritton Communications Company. During that time, I have gained extensive knowledge and experience in AM & FM radio engineering and television engineering. I have worked with transmission, propagation and reception issues and have filed engineering exhibits with the Commission.

3. This affidavit supports the joint reply comments of PBS, the Corporation for Public Broadcasting ("CPB") and America's Public Television Stations ("APTS") in this proceeding. I have reviewed portions of the initial comments submitted in this proceeding and am aware that some parties have argued that cable subscribers' use of A/B switches and antennas to obtain over-the-air reception is an adequate alternative to mandatory cable carriage of digital broadcast signals. Based on my experience, I believe there are a number of problems in relying on this alternative for cable subscribers to receive public television's digital signals.

4. The cable television industry began by providing signals of television broadcast stations to people who could not otherwise receive over-the-air signals. Today, in both rural and urban locations, many television viewers

continue to subscribe to cable because they are unable to receive a usable over-the-air signal due a variety of factors, including distance from the transmitter, hilly or mountainous terrain, shielding from surrounding structures or severe multi-path interference from reflecting surfaces. Any of these conditions may also result in a poor or totally unusable digital television signal. Even in situations where a viewer chooses to watch a poor quality analog signal because that is all he or she can receive, the same reception condition may prohibit the viewer from receiving any digital signal at all.

5. For many years, consumers have been relying on their cable connections, in lieu of an antenna, to receive broadcast services. The move away from antennas to cable was a move to a much more convenient method for consumers to access over-the-air programming. Reintroducing A/B switches and antennas now will require significant consumer re-education both to change a long-standing pattern of behavior and to convince cable subscribers to move back to a more cumbersome method of accessing broadcast signals. The cost and inconvenience will not deter all consumers, but certainly will deter a significant number.

6. Even for cable subscribers who purchase and install external antennas, a number of obstacles remain. Proponents of the use of A/B switches and antennas as an alternative to cable carriage are assuming widespread use of

technological advances that are still in development. While early high-end digital television sets are likely to have internal, remote-controlled input selection switches, it is unlikely that all digital television sets will have these convenient features, just as analog television sets do not all have the most advanced functionality. For those sets manufactured without internal, remote-controlled input selection switches, the same technical difficulties presented by external, mechanical A/B switches will continue to exist.

7. If the television set is equipped with an internal input selection switch, there are still difficulties. Cable subscribers must still navigate through multiple layers of onscreen menus to activate the switch properly. The reality is that for many, perhaps most, consumers finding the switch and understanding how to get from a cable channel to an over-the-air channel is a major obstacle.

8. In addition, if the local public television station's digital channel is not on the cable system, the station will not be in the cable system's onscreen program guide. Therefore, the consumer will not even know the local programming is available and may never attempt to find it. Even if the viewer attempts to find the local public television station, the station's channel number may conflict with a channel number used by the cable system in the onscreen guide. Frustrated and confused, the viewer may never find the desired program.

9. As PBS, CPB and APTS noted in their initial comments, there is at least one special problem that will cause public television to be particularly dependent on cable for transmission of its digital signals. Early indications are that digital television signals are vulnerable to various problems, including misaligned receive antennas. The transmitters of many public television stations, particularly those operated by state networks and university licensees, are located apart from clusters of commercial station transmitters. Cable subscribers forced to use antennas to attempt to receive broadcast signals over-the-air will orient their antennas toward clusters of transmitters, thereby obtaining the best reception for the greatest number of stations, but causing many public television stations to be "off-beam." Thus, even if they acquire antennas and overcome the other hurdles described above, cable subscribers may be unable to receive their local public television station over-the-air, unless they purchase and use an antenna rotating system.

10. Even with an antenna rotating system, today's television viewing patterns pose an additional obstacle to the use of antennas and A/B switches to receive off-air signals. It is common for multiple television sets in a single household to be connected to a single cable or a single antenna, to permit television viewing in different areas of the house and simultaneous viewing of different channels. Because an antenna rotating system cannot rotate to point in

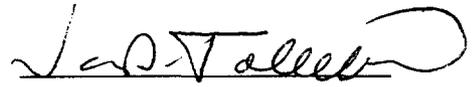
more than one direction at a time, it cannot accommodate simultaneous viewing of different channels on different sets, unless all the desired stations' transmitters are clustered together.

11. Time Warner argues that DBS subscribers have found it convenient to use an antenna to receive off-air signals alongside a DBS receiver. However, DBS subscribers represent only approximately 10 million households of a total of approximately 99.4 million television households. The experience of this relatively small group of DBS subscribers with regard to A/B switches and antennas is not necessarily representative of the behavior of most cable subscribers. Moreover, Time Warner presents no data on how many DBS subscribers actually do access off-air local broadcast signals.

12. I have reviewed pages 77-81 of the initial comments of the Association of Local Television Stations, Inc. In my view, ALTV raises valid concerns about the use of A/B switches and antennas.

13. The barriers described above will deter a substantial number of cable subscribers from viewing local public television stations off-air. The result will be frustration of public television's mission to provide high quality

programming and services to all Americans through all technologies.



John D. Tollefson

Sworn to before me this

21<sup>st</sup> day of December 1998.

  
Notary Public

*Comm exp 10/31/2001*