

subscribers, advertising-supported services provide an immediate source of revenue during the difficult start-up period. More importantly, it is much easier to persuade consumers to purchase receivers when they are able to receive a number of channels without any cost beyond the cost of the receiver. Once enough consumers have acquired receivers and become familiar with the capabilities of DARS, it may be possible to build a separate base of subscribers for the provision of subscription-only services.

46. While advertising-supported channels are particularly crucial at system start-up, AMRC believes that such channels will continue to serve a purpose in the long-term service mix of its system. AMRC therefore strongly disagrees with the Commission's suggestion in the NPRM that the Commission should regulate the types of service provided by DARS licensees. In particular, the suggestion in the NPRM to the effect that all DARS licensees be required to provide subscription services unnecessarily limits the ability of the licensees to adjust to the needs of the market. For example, it is expected that rural populations will be a major beneficiary of DARS services, which, unlike broadcast services, are not clustered around population centers. Rural areas, however, tend to have smaller per capita incomes than large cities. As a result, DARS licensees may find that their best market for listeners -- rural America -- may not be the best place to sell subscriber services. Similarly, competition with cable-based digital music subscription services might push DARS licensees to focus on advertiser-supported services.

47. In such circumstances, it might be perfectly reasonable for a DARS licensee to switch to an entirely advertiser-supported format. While AMRC is confident that a market for subscription audio services exists, it is quite possible that the service mix desired by the public can best be met by some DARS licensees operating entirely advertiser-supported services, and

other DARS licensees operating all subscription services. In short, it is impossible to predict the evolution of DARS as it responds to marketplace forces, and the Commission should not foreclose licensees from service options that may prove vital to providing a viable service to the public.

B. Imposition of Public Interest Obligations on DARS Licensees Operating as Broadcasters Is Appropriate

48. The NPRM raises the issue of whether DARS licensees, particularly those offering advertiser-supported services, should have public interest obligations. As the Commission correctly notes, to the extent that DARS is operated as a subscription service, the imposition of such obligations raises questions of a constitutional nature. AMRC does not seek to address those questions herein, as it believes that, as a matter of policy, the Commission should not impose such obligations on subscription services, which will be oriented toward specialized niches of the listening public. AMRC does believe, however, that imposition of public interest obligations on DARS licensees operating advertiser-supported systems is reasonable. While AMRC believes that the Commission should use a flexible standard for evaluating the public interest nature of DARS broadcast programming, it does not believe that the basic requirement of public interest programming on broadcast-style DARS services is improper. It should be noted, however, that it is AMRC's intent to include such programming on its system regardless of whether the Commission establishes a formal requirement. Similarly, AMRC believes that market forces will drive all DARS licensees to provide some form of public interest programming for broadcast-style services. It therefore may be reasonable but unnecessary for the Commission to establish specific public interest requirements for DARS systems.

C. The Technical Parameters of System Operations Should Be Regulated Only to the Extent Necessary to Prevent Interference

1. The Commission Should Not Attempt to Regulate System Link Margins

49. AMRC is unaware of any other satellite service where the Commission has regulated a system's service link margin and sees no reason for the Commission to do so with respect to DARS. Different DARS systems will likely utilize different link margins depending on a number of factors, including receiver design, transmission scheme, intended audience, and the extent to which terrestrial repeaters are used. The marketplace will ensure adequate system link margins, as a DARS system that cannot be reliably received will not survive. DARS licensees must therefore be allowed to make their own determinations as to the appropriate link margins.

2. The Commission Should Not Attempt to Regulate the Number of DARS Channels Nor the Data Rate for DARS

50. The NPRM requests comment as to how many channels can be carried in the available spectrum. While this is a seemingly simple question, it is greatly complicated by a myriad of system design choices, including the error correction system used, the degree of compression, the size of the link margin, the data rate utilized, the capabilities of the receivers (particularly mobile receivers), and the amount of satellite power available to the system. Because constantly advancing technology has made all of these factors, and many other relevant factors, moving targets, any statements as to the number of channels that will be available are clearly subject to future revision. Given the interrelationship of all of these factors, a licensee might, for example, choose to increase the data rate or link margin by reducing the number of

channels. Similarly, there is significant debate as to the data rate that will be necessary to satisfy consumer desire for “CD quality” sound.

51. With this in mind, AMRC estimates that currently-available technology will allow its two satellite system to transmit between 36 and 44 “CD quality” channels utilizing 12.5 MHz of the allocated spectrum. To the extent AMRC intends to include some non-CD quality channels in its system, the overall number of audio channels will be increased. The precise number of channels will, however, vary depending on available technology and the needs of users as indicated by the marketplace.

52. For this reason, AMRC agrees with the Commission’s proposal in the NPRM not to establish a standard data rate for DARS channels. As the NPRM correctly notes, it is likely that DARS licensees will use various data rates within their systems depending on the type of programming being transmitted, and it is also likely that the four proposed DARS systems will utilize different data rates based on each licensee’s system technology and view of consumer demand for higher data rates. The Commission should encourage such variations in data rate as a way of ensuring maximally efficient spectrum use and determining the data rate necessary to satisfy public demand.

Conclusion

The spectrum is available, the Commission issued a cut-off notice, four applicants are ready to proceed, and the time for satellite-delivered digital audio is now. There is no issue as to mutual exclusivity, and there is no need nor justification for accepting additional applications or holding an auction to assign the spectrum. By granting 12 ½ MHz of spectrum to each of the existing applicants, the Commission can bring DARS to the listening public in the shortest possible time and also ensure ample competition. AMRC urges the Commission to take these

actions and issue flexible service rules that will accommodate the evolution of DARS and allow licensees to adapt their systems to the demands of the listening public. By taking this approach, the Commission will increase the diversity of audio programming available to the public, promote competition, help to meet consumer demand for higher fidelity audio services, and provide a new service to many rural listeners who are presently unserved or underserved by existing broadcast stations.

Respectfully submitted,

AMERICAN MOBILE RADIO CORP.

By: Scott R. Flick
Bruce D. Jacobs
Scott R. Flick

By: Lon C. Levin
Lon C. Levin
Vice President and Regulatory Counsel

Fisher Wayland Cooper Leader
& Zaragoza L.L.P.
2001 Pennsylvania Avenue, N.W.
Suite 400
Washington, D.C. 20006

American Mobile Radio Corp.
10802 Parkridge Boulevard
Reston, Virginia 22091

Its Attorneys

Date: September 15, 1995

APPENDIX A

SATELLITE DARS IMPACT STUDY

An Assessment of the Impact of Satellite DARS Upon Terrestrial Radio

Prepared for:

Primosphere Limited Partnership and American Mobile Radio Corporation

Prepared by:

**Malarkey-Taylor Associates, Inc.-EMCI
1130 Connecticut Avenue
Suite 325
Washington, D.C. 20036
(202) 835-7800**

September 15, 1995

Copyright 1995 Malarkey-Taylor Associates, Inc.

Table of Contents

Satellite DARS Impact Study

| | |
|---|----|
| 1. Financial Impact of Satellite DARS on Local Radio Industry | 1 |
| 2. General Methodology | 1 |
| Factors Considered..... | 1 |
| 3. Conclusions..... | 2 |
| 4. Projection of Satellite DARS Listeners | 2 |
| 5. Impact of Satellite DARS Upon Traditional Radio Listening..... | 3 |
| 6. Summary Data to Assess Impact of Satellite DARS On Average FM Stations in Selected Markets..... | 4 |
| 7. Individual Market Scenarios | 4 |
| Audience Share Analysis | 5 |
| Revenue Share Analysis | 5 |
| Operating Expense Analysis | 7 |
| Operating Income Analysis..... | 7 |
| 8. Impact of New Technologies on Existing Technologies- Two Examples..... | 46 |
| Case #1 Cable Television and Broadcast Television..... | 46 |
| Case #2 DBS (Direct Broadcast Satellite) and Cable Television | 53 |
| 9. Qualifications of Malarkey-Taylor Associates | 58 |

Tables and Exhibits:

Table 1.1 Growth in Satellite DARS Listeners

Chart 1.1 Growth in Satellite DARS Listeners

Table 1.2 Reduction in FM Radio Listening

Table 1.3 Audience and Financial Impact in 2007

Table 1.4 Impact in Market E in 2007

Table 1.5 Impact on AQH and CPM

Table 1.6 Impact of Market Revenue

Table 1.7 Impact on Station Net Revenue

Table 1.8 Impact on Station Operating Profits

Table 1.9 Impact on Radio Industry in 2000 and 2007

Markets A Through E: *(the following set of Exhibits has been prepared for each market)*

Exhibit A - Audience Analysis

Exhibit B - Revenue Analysis

Exhibit C - Operating Expense Analysis

Exhibit D - Operating Profit Analysis

Table 2.1 Total Day Ratings - Broadcast and Cable Channels

Table 2.2 Prime Time Ratings - Broadcast Networks and Cable Channels - 5/95

Table 2.3 Shares of Total Day Television Viewing

Table 2.4 Hours Per Person Per Year Using Media

Figure 2.1 Network Television Revenues, 1980-1994

Table 2.5 DBS Subscribers 4/95

Figure 2.2 Total Basic Cable Subscribers, 1980-1995

Figure 2.3 Cable TV Penetration, 1980-1995

Figure 2.4 Total Cable Operator Revenue, 1980-1995

Figure 2.5 Cable Advertising Revenue, 1980-1995

Figure 2.6 Cable Subscriber Projections, 1995-2000

Figure 2.7 DBS Subscriber Projections, 1995-2000

Satellite DARS Impact Study

1. Financial Impact of Satellite DARS on Local Radio Industry

The purpose of this study is to forecast the economic impact of the development of Satellite Digital Audio Radio Service (Satellite DARS) on terrestrial radio stations, with a detailed focus on the impact on typical FM stations in a variety of market sizes. The study analyzes the impact of Satellite DARS on FM stations only because the majority of audience share (hence revenue and operating profit) in the industry today is generated by FM stations. Listening on the AM band has stabilized in recent years, and it is reasonable to expect that AM listeners will remain stable because of a combination of factors, including a long tradition of AM listening and satisfaction with AM service, in terms of content and sound quality. MTA-EMCI does not foresee Satellite DARS attracting AM listeners, thereby causing economic impact to AM stations. Consequently, this study addresses only the impact of Satellite DARS on FM radio.

2. General Methodology

This study analyzes a typical FM station in each of five market sizes. MTA-EMCI has developed five sets of operating/financial projections for the typical FM station in markets ranging in size from \$100 million to \$5 million in revenue. The projections cover an eight-year period, beginning in 2000. In each market, station net revenue, expenses, and operating profits have been compared under two scenarios. The first scenario assumes a continuation of station operations and no introduction of Satellite DARS. The second scenario assumes an impact on the market and the FM stations by Satellite DARS. Although the markets and stations are hypothetical, the variables which define them portray realistic operating conditions observable in the radio industry. The analyses are presented following this narrative.

Factors Considered

The impact of Satellite DARS on terrestrial FM radio has been projected, taking into account a number of factors, including:

- Satellite DARS listeners will continue to listen to their local FM radio stations.
- The impact of Satellite DARS will be greater in smaller markets, with fewer stations to satisfy a variety of listening preferences.
- Advertisers, including national advertisers, will continue to use local radio as an important advertising outlet because it is familiar, accessible, and the advertising results are validated.

3. Conclusions

Based on the analyses in this study, the projected economic impact of Satellite DARS on terrestrial FM radio is minimal. The reduction of FM radio listening attributable to Satellite DARS in 2007 (the final year of the projection period) is projected to range from 0.64% in the largest market examined to 1.06% in the smallest market examined. The reduction in listening is not directly correlated to the reduction in station revenue. Initially, Satellite DARS is forecast to generate a substantial portion of revenue from advertisers not presently advertising on radio.

The decline in station net revenues generated in 2007 ranges from 0.32% in the largest market to 0.53% in the smallest market. Operating expenses for FM stations, particularly programming and advertising/promotional expenses, are projected to increase in response to Satellite DARS. The resulting decline in operating profit in 2007 ranges from 2.1% in the largest market to 3.5% in the smallest market.

4. Projection of Satellite DARS Listeners

Based on 1) the introduction of FM radio as a new technology and the slow penetration growth of receivers experienced in early years, and 2) the more recent experience of the DBS industry and the aggressive penetration rate achieved during its first year, the number of Satellite DARS listeners is projected at 750,000 in 2000, the assumed first year of operations. Penetration growth is forecast to be relatively slow for the first four years, with rapid growth in penetration thereafter.

To assess the financial impact of Satellite DARS on the average FM radio station, projections of the number of Satellite DARS listeners/receiver owners were required. In order to make such projections MTA-EMCI has examined the development of other new technology-based services and products. The growth pattern of the penetration of FM radio during its early years appears to be the most comparable to the introduction of Satellite DARS. During the first several years after the introduction of the FM receiver, penetration increases were very modest given the requirement that FM listeners purchase new equipment. Steeper growth rates were not achieved until later years when equipment costs were reduced and additional programming became available. Another model considered was the direct broadcast satellite (DBS) multichannel video service. In this industry an aggressive penetration rate was achieved during the first year of operations, with reported sales of approximately 650,000 satellite dish receivers.¹

For purposes of this study, the number of users of Satellite DARS has been forecast at 750,000 in the first year. This is an aggressive projection similar to the experience of DBS. However, the DBS industry has driven its penetration by aggressively promoting itself on broadcast and cable television. Moreover, consumers have historically been willing to spend more to enhance

¹ Paid subscribers (including those renting receivers) to DBS grew to approximately one million in the first year.

television viewing than radio listening. Nevertheless, MTA-EMCI believes an aggressive projection is appropriate given the recent experience of a related industry (DBS) introducing a new technology-based service. The projected Satellite DARS first-year penetration level exceeds the DBS level, given that a portion of Satellite DARS listeners will pay no monthly subscriber fee, as required by users of DBS.

During the second and third years Satellite DARS listeners are projected to increase by 25%, and over the subsequent five years listener growth rates reach 65%. Accordingly, the number of listeners is forecast to reach 10.4 million by the eighth year of operations. These figures are presented in tabular form in Table 1.1 and graphically in Chart 1.1.

5. Impact of Satellite DARS Upon Traditional Radio Listening

To project the impact of Satellite DARS on radio listening, projected Satellite DARS listeners/receiver owners have been viewed as a percentage of the total U.S. population. It has been assumed that the typical Satellite DARS listener will continue to devote the majority of listening time to terrestrial radio. In addition, the smaller market stations have been assumed to be more vulnerable because there are fewer stations to satisfy different listening preferences. Accordingly, listeners in small markets will spend a greater portion of listening time tuned to Satellite DARS.

Table 1.2 projects the impact of Satellite DARS on the amount of terrestrial FM radio listening. The number of Satellite DARS listeners (Table 1.1) is divided by the total U.S. population as projected over eight years. The percentage of the population using Satellite DARS grows from 0.27% in 2000 to 3.53% in 2007. These percentage figures were then applied to Average Quarter Hour (AQH²) levels, after adjustments were made for the projected percentage of radio listening time devoted to Satellite DARS.

The percentage of radio listening time devoted to Satellite DARS by Satellite DARS receiver owners was forecast to increase as market size declines. It is reasonable to anticipate that the impact of Satellite DARS will be felt most strongly in smaller markets with fewer stations to serve listening needs and preferences. Because larger markets provide listeners with more programming choices, MTA-EMCI has forecast the typical Satellite DARS listener in Market A, the largest market, to devote 3% of his or her radio listening time to Satellite DARS. The remainder is spent listening to terrestrial FM. This figure grows to 18% by 2003. In Market E, the smallest market, the typical Satellite DARS listener is forecast to devote 15% of radio listening time to Satellite DARS. By the fourth year of operations, Satellite DARS listeners in small markets are forecast to spend 30% of their radio listening time tuned to Satellite DARS.

² Average Quarter Hour (AQH) of listening represents the increment in which ratings and audience share data is measured per station by Arbitron Ratings Service.

In projecting the radio time spent listening to Satellite DARS, MTA-EMCI has considered the cable television industry experience with broadcast television. Over the course of approximately 30 years, cable television has increased its share of television viewing in all TV households to roughly 30%, leaving the majority of viewing with traditional over-the-air broadcasters (see Exhibit 2.3, p. 56).

6. Summary Data to Assess Impact of Satellite DARS On Average FM Stations in Selected Markets

Tables 1.3 through 1.8 present, in summary form, the impact of Satellite DARS on certain market variables. These data are taken directly from the five separate operating projections developed for average FM stations in markets ranging in size from \$100,000,000 to \$5,000,000 in annual revenue. Table 1.3 presents the listening and financial impact of Satellite DARS for all markets in 2007, the last year of the projection term. As shown, the reduction in average FM station operating profits ranges from 1.60% in Market A to 2.65% in Market E. Table 1.4 summarizes the station impact in Market E, the smallest market examined. In Tables 1.5 through 1.8 data are compiled for the impact upon the AQH levels of listening, the Cost Per Thousand³ (CPM), Market Revenue, Average Station Revenue, and Average Station Operating Profit.

Table 1.9 summarizes the projected impact of Satellite DARS on revenue generated by the terrestrial radio industry as a whole, in the years 2000 and 2007. The industry is segmented into groups with ranges corresponding to Markets A through E. As shown, in 2000, the industrywide revenue impact is projected at 0.09%. Over the eight-year period ending in 2007, the impact increases to 1.28%.

7. Individual Market Scenarios

For each of the Markets A through E, MTA-EMCI has developed operating projections to measure the economic impact on a typical FM station of the introduction of Satellite DARS into the market. The operating projections take into account market size (revenue and population), expected levels of AQH listening (for terrestrial and Satellite DARS), the CPM for radio advertisers, audience shares, operating expenses and operating profits. The operating parameters for these markets were based on information published in the 1995 edition of Duncan's Radio Market Guide, BIA's Investing In Radio '95 Market Report, and the 1992 National Association of Broadcasters (NAB) Radio Financial Report.

The operating scenarios cover an eight-year period, based on a typical FM radio valuation scenario. The methodology does not vary among the markets. A detailed discussion of the

³ Cost Per Thousand (CPM) refers to the cost to an advertiser to reach 1,000 listeners in a given market.

operating scenario developed for an average FM station in Market A with \$100,000,000 in annual revenue, follows.

Audience Share Analysis

The audience share analysis for each of the markets (Exhibit A) was based on population and the average quarter hours (AQH) of listening. The impact on radio listening (as forecast in Table 1.2) was applied directly to the AQH level in the market. Exhibit A also illustrates radio listening patterns by location (car, home, other) and the impact of Satellite DARS upon listening location patterns.

Exhibit A presents an Audience Analysis and illustrates the effect of Satellite DARS on the market's AQH of listening. Markets with approximately \$100,000,000 in advertising revenue are generally supported by a population base ranging from 2.5 to 3.5 million. Total population was forecast to grow by 1.0% annually. Population forecasts for the U.S. as a whole increase by 0.89% annually through 1999 in Market Statistics' Demographics USA County Edition 1995.

The break-out of terrestrial radio listening (vehicle, home, other) was based on information published in Veronis, Suhler & Associates Communications Industry Forecasts, July 1995. The forecast trends merely continue those previously identified. The terrestrial market AQH was based on the level of AQH seen in similar sized markets. These data are published on a per market basis by Arbitron.

The percentage loss of AQH by the terrestrial radio station to Satellite DARS is taken from Table 1.2, as discussed earlier. As shown, the amount of Satellite DARS AQH listening, which is equal to the lost terrestrial listening, is forecast to grow from 0.01% in Year 1 to 0.64% in Year 8. MTA-EMCI has projected that 70% of Satellite DARS listening will occur in vehicles given the nature of the technology.

As indicated, the impact upon listening in Market A, the largest market, is slight. Patterns of listening by location (home, vehicle, other) change slightly. The percentage of terrestrial AQH listening in vehicles dips from 31.8% in Year 8 (without Satellite DARS impact) to 31.5% with the Satellite DARS impact. The percentage of terrestrial listening in the home is forecast to rise incrementally, from 37.0% to 37.1%, while other listening increases from 31.3% to 31.4%.

Revenue Share Analysis

In Exhibit B, a portion of the reduction in market AQH was applied to the market's cost per thousand (CPM) paid by market advertisers. The impact is reflected in total market revenue projections. It was assumed that the advertisers attracted to Satellite DARS would generally be new to radio. Over time, it was forecast that additional advertising would migrate to Satellite DARS from terrestrial radio stations. Terrestrial radio stations were expected to maintain their share of terrestrial listening; however, the pool of revenue available will be affected.

Exhibit B projects market and station revenue, as impacted by Satellite DARS. The breakout of market revenue between national and local advertising was based on information taken from BIA's Investing in Radio '94 Market Report. Markets with roughly \$100,000,000 in revenue tend to generate approximately 22% of revenue from national sources and 78% from local sources.

The CPM was calculated by dividing market revenue (\$100,000,000) by the total market AQH (3,500). The resulting annual amount spent by advertisers per AQH (\$28,571.40) was divided by the total market population (2,750,000) and multiplied by 1,000 for a CPM of \$10.39. The cost per thousand was forecast to increase at an annual rate of 5% per year, or at a real rate of 2% annually in addition to 3% inflationary growth. As shown, market revenue without the initiation of Satellite DARS would be \$100,000,000 in Year 1 and would grow annually by 6.1% to \$150,860,211 in Year 8.

The percentage reduction in AQH with the impact of Satellite DARS was taken from Table 1.2. This, however, was not a completely accurate predictor of the impact on the market's CPM. The impact on CPM would be lessened by the fact that, during the early years of operation, Satellite DARS operators are expected to derive the majority of advertising revenue from sources currently not using radio advertising. This assumption was based on the experience of MTV, an alternate provider of a niche market music product offered over cable television. A new body of advertisers with requirements previously unmet was generated.

Accordingly, during Year 1, Satellite DARS operators are projected to generate 80% of revenue from new advertising sources. Over the following four years this percentage declines to 50%. As of Year 5, one-half of Satellite DARS revenue is forecast to be derived from advertisers that have traditionally used terrestrial radio. The resulting percentage decline in the CPM is forecast at 0.01% in Year 2 and grows to 0.32% by Year 8. The impact on the level of market revenues is slight, as shown. Summary information regarding the impact of Satellite DARS upon AQH and CPM levels for all markets, is presented in Table 1.5. Summary information for market revenues is presented in Table 1.6.

The audience share generated by an average FM station in this market size is 4.5%. The extent to which the audience share is matched by revenue share due to less or more favorable audience demographics, is reflected by the power ratio.⁴ The average FM was assigned a revenue share equal to its audience share. Station net revenues were projected with and without the impact of Satellite DARS. Again, the impact in Market A is slight. Summary information regarding the impact of Satellite DARS on station net revenues for all markets, is presented in Table 1.7.

⁴ A station's power ratio reflects the extent to which audience share is converted into revenue share. Generally, a station would be expected to convert a 4.5% audience share into a 4.5% revenue share. However, stations whose listeners fall into very attractive (to advertisers) demographics often convert the audience share into an even greater revenue share. Stations with less attractive demographics often fail to generate a revenue share as large as their audience share.

Operating Expense Analysis

Exhibit C illustrates the projected impact of Satellite DARS on operating expenses. With the initiation of Satellite DARS, terrestrial radio stations were forecast to increase their budgets in the areas of programming and advertising/promotion.

Exhibit C presents average FM operating expenses as they might appear in a market of this size assuming no added competition and alternatively, assuming the impact of Satellite DARS. The forecasts were based on data published in the 1992 NAB Radio Financial Report. Initially, operating expenses for the differing functional areas were projected as a percentage of net revenue. Annual percentage increases were projected at 4% for all expenses, with the exception of Technical expenses which grow by 3% per year. The initiation of Satellite DARS is forecast to spur operators to make increases in their programming and advertising/promotional budgets. These two categories have a more direct bearing on the actual service and listener awareness of the service than do the technical or administrative functions.

Operating Income Analysis

The operating income analysis demonstrates the bottom line impact of Satellite DARS on the terrestrial FM station. The impact hovers between roughly 1.5% to 2.1% over the eight year projection term for Market A. The impact on operating profit increases as the size of the market decreases.

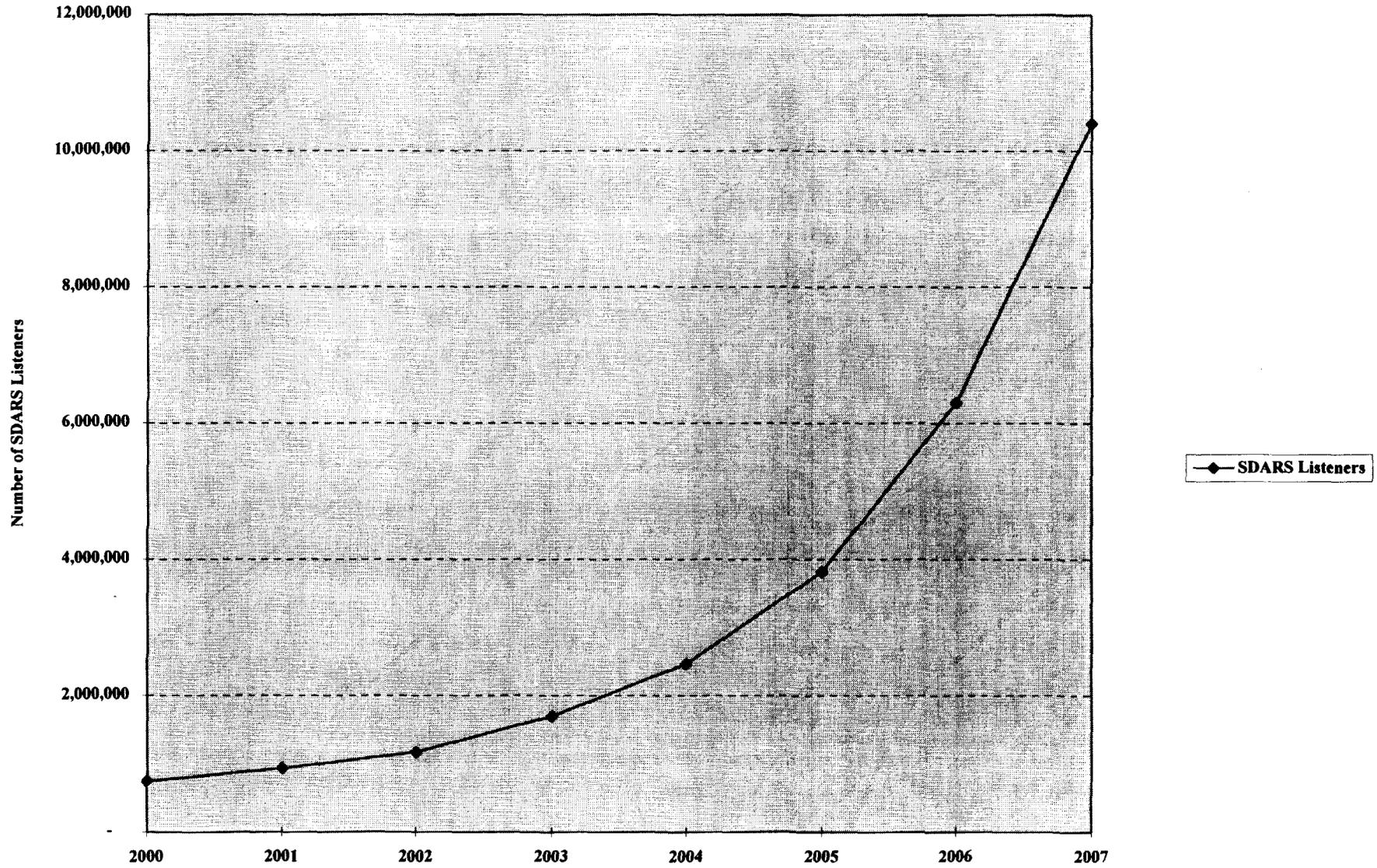
Exhibit D presents the resulting operating income levels and operating margins based on the two scenarios. As shown, the operating margins for both scenarios start at approximately 25% and grow to 35%. The annual difference in operating cash flow for an average FM station in Market A due to the presence of Satellite DARS was projected at \$16,366 in Year 1. The loss of cash flow grows to \$25,484 by Year 5 and \$42,889 by Year 8. On a percentage basis, the operating cash flow difference hovers between 1.5% to 2.1% per year. Summary information regarding the impact of Satellite DARS upon station operating profit for all markets, is presented in Table 1.8. As would be expected, the impact of Satellite DARS upon the average FM station increases as market revenue size grows smaller.

*GROWTH IN SATELLITE DARS LISTENERS
&
REDUCTION IN RADIO LISTENING ATTRIBUTABLE TO
SATELLITE DARS*

Table 1.1 Growth In Satellite Digital Audio Radio Service Listeners

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SDARS Listeners | 750,000 | 937,500 | 1,171,875 | 1,699,219 | 2,463,867 | 3,818,994 | 6,301,340 | 10,397,212 |
| Annual Increase in Listeners | | 187,500 | 234,375 | 527,344 | 764,648 | 1,355,127 | 2,482,346 | 4,095,871 |
| Percentage Increase | | 25% | 25% | 45% | 45% | 55% | 65% | 65% |

Chart 1.1 Growth in Satellite Digital Audio Radio Service Listeners



**Table 1.2 Reduction In Radio Listening Attributable To
Satellite Digital Audio Radio Service**

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total US Population | 276,530,761 | 278,991,885 | 281,474,912 | 283,980,039 | 286,507,461 | 289,057,378 | 291,629,988 | 294,225,495 |
| SDARS Receiver Owners/US Pop. | 0.27% | 0.34% | 0.42% | 0.60% | 0.86% | 1.32% | 2.16% | 3.53% |
| Percentage of Radio Listening Time Devoted to SDARS* | | | | | | | | |
| Market A | 3.00% | 8.00% | 13.00% | 18.00% | 18.00% | 18.00% | 18.00% | 18.00% |
| Market B | 6.00% | 11.00% | 16.00% | 21.00% | 21.00% | 21.00% | 21.00% | 21.00% |
| Market C | 9.00% | 14.00% | 19.00% | 24.00% | 24.00% | 24.00% | 24.00% | 24.00% |
| Market D | 12.00% | 17.00% | 22.00% | 27.00% | 27.00% | 27.00% | 27.00% | 27.00% |
| Market E | 15.00% | 20.00% | 25.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% |
| Impact On Average FM Station** | | | | | | | | |
| Market A | 0.01% | 0.03% | 0.05% | 0.11% | 0.15% | 0.24% | 0.39% | 0.64% |
| Market B | 0.02% | 0.04% | 0.07% | 0.13% | 0.18% | 0.28% | 0.45% | 0.74% |
| Market C | 0.02% | 0.05% | 0.08% | 0.14% | 0.21% | 0.32% | 0.52% | 0.85% |
| Market D | 0.03% | 0.06% | 0.09% | 0.16% | 0.23% | 0.36% | 0.58% | 0.95% |
| Market E | 0.04% | 0.07% | 0.10% | 0.18% | 0.26% | 0.40% | 0.65% | 1.06% |

*Assumes listeners in larger markets will use SDARS less frequently due to greater choice among terrestrial stations.

**SDARS Receiver Owners/US Population times Listening Time Devoted to SDARS

***SUMMARY DATA GAUGING IMPACT OF SATELLITE DARS
ON AVERAGE FM STATION IN SELECTED MARKETS:***

1.3 OPERATING & FINANCIAL IMPACT IN 2007

1.4 IMPACT IN MARKET E IN YEAR 2007

1.5 AQH & CPM

1.6 MARKET REVENUE

1.7 STATION NET REVENUE

1.8 STATION OPERATING PROFIT

1.9 RADIO INDUSTRY IMPACT

SUMMARY DATA TO GAUGE IMPACT OF SDARS ON AVERAGE FM STATION IN SELECTED MARKETS

**Table 1.3 Impact of Satellite DARS on Terrestrial
FM Radio Industry in 2007**

| | <u>Without Satellite DARS</u> | <u>With Satellite DARS</u> | <u>Percentage Difference</u> |
|--------------------------|-----------------------------------|--------------------------------|----------------------------------|
| AQH | | | |
| Market A | 3,500 | 3,478 | 0.64% |
| Market B | 1,200 | 1,191 | 0.74% |
| Market C | 650 | 644 | 0.85% |
| Market D | 400 | 396 | 0.95% |
| Market E | 175 | 173 | 1.06% |
| NET REVENUE | | | |
| Market A | \$5,804,347 | \$5,785,887 | 0.32% |
| Market B | \$2,515,217 | \$2,505,884 | 0.37% |
| Market C | \$1,451,087 | \$1,444,933 | 0.42% |
| Market D | \$1,289,855 | \$1,283,701 | 0.48% |
| Market E | \$773,913 | \$769,811 | 0.53% |
| OPERATING PROFITS | | | |
| Market A | \$2,042,309 | \$1,999,420 | 2.10% |
| Market B | \$830,868 | \$811,169 | 2.37% |
| Market C | \$448,117 | \$436,110 | 2.68% |
| Market D | \$370,566 | \$359,322 | 3.03% |
| Market E | \$202,308 | \$195,168 | 3.53% |

SUMMARY DATA TO GAUGE IMPACT OF SDARS ON AVERAGE FM STATION IN SELECTED MARKETS

**Table 1.4 Impact of Satellite DARS on Terrestrial
FM Radio in Smallest Market in 2007**

| | <u>Without Satellite DARS</u> | <u>With Satellite DARS</u> | <u>Percentage Difference</u> |
|----------------------------|-----------------------------------|--------------------------------|----------------------------------|
| MARKET REVENUE | \$7,543,011 | \$7,503,028 | 0.53% |
| AQH | 175 | 173 | 1.06% |
| STATION NET REVENUE | \$773,913 | \$769,811 | 0.53% |
| OPERATING PROFITS | \$202,308 | \$195,168 | 3.53% |

SUMMARY DATA TO GAUGE IMPACT OF SDARS ON AVERAGE FM STATION IN SELECTED MARKETS

Table 1.5 AQH and CPM

% AQH REDUCTION WITH DARS IMPACT

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Market Size A | 0.01% | 0.03% | 0.05% | 0.11% | 0.15% | 0.24% | 0.39% | 0.64% |
| Market Size B | 0.02% | 0.04% | 0.07% | 0.13% | 0.18% | 0.28% | 0.45% | 0.74% |
| Market Size C | 0.02% | 0.05% | 0.08% | 0.14% | 0.21% | 0.32% | 0.52% | 0.85% |
| Market Size D | 0.03% | 0.06% | 0.09% | 0.16% | 0.23% | 0.36% | 0.58% | 0.95% |
| Market Size E | 0.04% | 0.07% | 0.10% | 0.18% | 0.26% | 0.40% | 0.65% | 1.06% |

% CPM REDUCTION WITH DARS IMPACT

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Market Size A | 0.00% | 0.01% | 0.02% | 0.05% | 0.08% | 0.12% | 0.19% | 0.32% |
| Market Size B | 0.00% | 0.01% | 0.03% | 0.06% | 0.09% | 0.14% | 0.23% | 0.37% |
| Market Size C | 0.00% | 0.01% | 0.03% | 0.06% | 0.10% | 0.16% | 0.26% | 0.42% |
| Market Size D | 0.01% | 0.02% | 0.04% | 0.07% | 0.12% | 0.18% | 0.29% | 0.48% |
| Market Size E | 0.01% | 0.02% | 0.04% | 0.08% | 0.13% | 0.20% | 0.32% | 0.53% |

Note: AQH reduction does not fully impact reduction in CPM. SDARS operators are projected to generate 80% of their revenue, during year one of operation, from advertisers currently not using radio. By year five this figure declines to 50%.

SUMMARY DATA TO GAUGE IMPACT OF SDARS ON AVERAGE FM STATION IN SELECTED MARKETS

Table 1.6 Market Revenue

MARKET REVENUE WITHOUT INITIATION OF DARS

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Market Size A | \$100,000,000 | \$106,050,000 | \$112,466,025 | \$119,270,220 | \$126,486,068 | \$134,138,475 | \$142,253,853 | \$150,860,211 |
| Market Size B | \$30,000,000 | \$31,815,000 | \$33,739,808 | \$35,781,066 | \$37,945,820 | \$40,241,542 | \$42,676,156 | \$45,258,063 |
| Market Size C | \$15,000,000 | \$15,907,500 | \$16,869,904 | \$17,890,533 | \$18,972,910 | \$20,120,771 | \$21,338,078 | \$22,629,032 |
| Market Size D | \$10,000,000 | \$10,605,000 | \$11,246,603 | \$11,927,022 | \$12,648,607 | \$13,413,847 | \$14,225,385 | \$15,086,021 |
| Market Size E | \$5,000,000 | \$5,302,500 | \$5,623,301 | \$5,963,511 | \$6,324,303 | \$6,706,924 | \$7,112,693 | \$7,543,011 |

MARKET REVENUE WITH DARS IMPACT

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Market Size A | \$99,998,373 | \$106,041,447 | \$112,441,677 | \$119,212,413 | \$126,388,171 | \$133,978,975 | \$141,977,218 | \$150,380,418 |
| Market Size B | \$29,999,024 | \$31,811,472 | \$33,730,817 | \$35,760,833 | \$37,911,557 | \$40,185,717 | \$42,579,333 | \$45,090,136 |
| Market Size C | \$14,999,268 | \$15,905,255 | \$16,864,566 | \$17,878,972 | \$18,953,331 | \$20,088,871 | \$21,282,751 | \$22,533,073 |
| Market Size D | \$9,999,349 | \$10,603,183 | \$11,242,482 | \$11,918,351 | \$12,633,922 | \$13,389,922 | \$14,183,890 | \$15,014,052 |
| Market Size E | \$4,999,593 | \$5,301,431 | \$5,620,960 | \$5,958,694 | \$6,316,145 | \$6,693,632 | \$7,089,640 | \$7,503,028 |

PERCENTAGE REDUCTION IN MARKET REVENUE

| | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Market Size A | 0.00% | 0.01% | 0.02% | 0.05% | 0.08% | 0.12% | 0.19% | 0.32% |
| Market Size B | 0.00% | 0.01% | 0.03% | 0.06% | 0.09% | 0.14% | 0.23% | 0.37% |
| Market Size C | 0.00% | 0.01% | 0.03% | 0.06% | 0.10% | 0.16% | 0.26% | 0.42% |
| Market Size D | 0.01% | 0.02% | 0.04% | 0.07% | 0.12% | 0.18% | 0.29% | 0.48% |
| Market Size E | 0.01% | 0.02% | 0.04% | 0.08% | 0.13% | 0.20% | 0.32% | 0.53% |