

Use Rations

On the monthly use stats, the ratio you see is cpu time divided by connect time. The average is 2.0 to 2.5 percent for most groups. If you are under two, you are probably sleeping at the terminal. If you are over three, you are a candidate for cycle pig of the year (I am about four, Oink). Basically, this ratio just tells you how hard you are banging at the system..... as to the stuff in groupstat, your guess is as good as mine. I think, however, that an efficiency ratio (or whatever they call it) is how effective you are at grabbing resources compared to people in other slices. Because many of us at ARC work nights (not management), our efficiency ratio is outasight, well around 3.7 anyway. A high ratio means two things, first that you have gotten your use out of the system and second that you aint gonna get no windfall if the system can help it.

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David A. Potter, Special Jhb Feedback,

PAY TELEVISION AND FREE TELEVISION;
A POLICY ASSESSMENT BASED UPON A PROJECTION OF FUTURE
CONSUMER DEMAND FOR PAY TELEVISION

1a

A DISSERTATION
SUBMITTED TO THE DEPARTMENT OF COMMUNICATION
AND THE COMMITTEE ON GRADUATE STUDIES
OF STANFORD UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

1b

By
Ra3y Panko
August 1974

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ABSTRACT

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Knowledge of consumer demand for pay television - or rather the lack of this knowledge - has long influenced the regulation of pay television. When the Federal Communications Commission originally authorized pay television in 1968, it could not predict the outcome of open competition between pay television and conventional television. Faced with the possibility of immediately destructive competition, the FCC imposed a set of strongly anticompetitive rules on the new medium.

3a

By 1973, however, data on consumer demand were beginning to emerge rapidly. This study analyzes currently available data and projects an upper bound for consumer demand to 1985. Special emphasis is given to demand parameters needed to analyze potential economic interactions between conventional television and pay television.

3b

The analysis finds that potential economic interactions will not be large; they will be negligible to moderate, especially during the next five years, but also throughout our projection period. While this analysis must be tested experimentally, it implies that the basis for the FCC's current regulatory approach, namely a danger of immediate and serious harm to conventional television - is not well-founded.

3c

The FCC and Congress should begin to reconsider the current regulatory policy as soon as possible, to prevent inertia from cementing intellectual and legal precedents. The FCC and Congress should consider pay television broadly, as a part of a total system for financing television. Current regulations were designed to protect consumers from paying for what they now see free. But consumers already pay \$5 billion per year<1> - \$75 per household on the average - to finance conventional television's production and distribution. Although these payments are made indirectly, through taxes and premiums on advertised products, and although they might not be recoverable if television were not present, they are still large.

3d

Historically, other media have not relied upon advertising alone, and the results have not been

inimical to the public interest. For example, a full system of financing, including advertising, subsidies and direct consumer payments, has brought extensive diversity and quality to the print medium. The Federal Government should determine whether the same would happen in the television medium under a competitive and perhaps nondisjoint financing system involving pay television, advertiser-supported television and public television. At the very least, the Federal Government should not automatically place advertising support in a position of primacy,

3e

It is important to continue the analysis of data in the future. Our current projections are not sufficiently precise to generate long-term regulations, only to probe general regulatory assumptions. Fortunately many data will be generated in the near future. If these data are collected and analyzed, the time horizon of projections can be lengthened greatly during the next three to five years.

3f

One action must be taken immediately by the FCC, however, if future regulatory improvement is to be ensured. The FCC must immediately create a program of experimental relaxations to the current anticompetitive regulations. These regulations now prohibit key market

tests that are critical to the creation of an effective long-term regulatory policy toward pay television. In the past, the FCC has opposed experimental relaxations on grounds of practicality and value to the regulatory process. While it is true that there are difficulties attendant to such a program, these difficulties are not severe. And without experimental relaxations, only cosmetic changes to the FCC's current regulatory approach are likely to be possible before time sets the FCC's original ad hoc policy into a form that will severely resist fundamental change.

3g

The study does not consider antitrust or First Amendment implications of the antisiphoning rules.

3h

PREFACE

The economic analysis for this study was completed in late 1974. Since then, several events bearing on the analysis have occurred, and it seems fitting to comment upon them. One is a continuing inflation; the reader is cautioned to add about 10 percent to quoted prices when interpreting the results in terms of 1975 prices.

Second, the Federal Communications Commission has recently revised the antisiphoning rules that are the focus of this study. These revisions were very minor, however, and should not have a significant bearing upon our analysis, conclusions or recommendations.

Third, new consumer demand information has become available, as our analysis indicated they would. These new data require no reestimation of our original estimation and in fact serve to confirm our original analysis. Our analysis was intended to produce

reasonable upper-bound estimates for consumer demand, and none of these new data suggest that our results are not reasonable upper bounds,

4c

pay cable television's performance has improved substantially since our base data were collected. However we overestimated demand when interpreting those original data. The net result is that our upper-bound estimation of current demand has become instead a close estimate of consumer demand. In fact, our entire model for pay cable's impact on cable television today has been confirmed to a degree that must be attributed to good fortune,

4d

Looking toward the future, Home Box Office has recently announced the creation of a national satellite network for pay television; although this came somewhat more quickly than anticipated, our projected growth rate for pay cable's market size was sufficiently high that no reestimation is needed,

4e

In one area we have erred to a substantial extent. Broadcast pay television has not yet entered the marketplace, and our estimate for its time of emergence may be one to three years early. Underestimating STV's

emergence date, of course, does not harm the integrity of our analysis as an upper-bound projection.

4f

Since the analysis was completed, a book entitled Television Economics, by Bruce M. Owen, Jack H. Beebe and Willard G. Manning has been published by D. C. Heath. Several sections will be of interest to readers concerned with the economics of pay television and free television.

4g

4h

This dissertation is based in large part on a study conducted by the author while at Stanford Research Institute, under a contract to the Office of Telecommunications Policy, in the Executive Office of the President. The author was project leader of this study. However this dissertation has different aims than the OTP study, and we wish to state these differences clearly.

4i

The OTP contract required SRI to project an upper bound on national consumer demand for pay television and also to project upper bounds on certain specific aspects of demand. The study was not directed specifically at the antisiphoning rules that govern pay television, and SRI was not to make policy

interpretations or recommendations on the basis of the results.

4j

This dissertation, on the other hand, was intended to be an analysis of current pay television regulations, that is, the antisiphoning rules. While it includes the economic analysis performed at SRI as a large portion of its total substance, it interprets these results in a policy setting and makes specific recommendations for future regulatory actions. We wish to note that the views, conclusions and recommendations contained in this document are those of the author and should not be interpreted as necessarily representing the official policies, either expressed or implied, of Stanford Research Institute, of the Office of Telecommunications Policy, or of the U.S. Government.

4k

In summary, this dissertation embodies the economic analysis completed at Stanford Research Institute, but this is its only connection with the Institute or with the Federal Government.

4l

4m

It is impossible to acknowledge and thank all of the people who have assisted me in this long study, but

I would like to mention at least some of the people to whom I am deeply grateful.

4n

During early 1973, the author was project leader for a student group studying pay television at Stanford University. This project was part of a two-quarter course conducted by Professor William K. Linvill of the Department of Engineering Economic Systems. Professor Edwin B. Parker, the author's advisor in the Communication Department, was the team's advisor, Professor Bruce B. Lusignan, of Electrical Engineering, also provided valuable advice. The students in this course, in addition to the author, were Thomas Crowley, John Haptas, and Carol (Wilder) Warfield. During the winter and spring of 1973, this group surveyed the emerging pay television industry.

4o

In mid-1973, the Office of Telecommunications Policy issued a Request for Proposal to conduct a demand projection for pay television demand. The author wrote a proposal for SRI and became project leader when the effort was funded. The project supervisor at SRI was Dr. Robert F. Daly, Director of SRI's Telecommunications Sciences Center. Other SRI employees who contributed to the project were Gwen C. Edwards, Kenneth Penchos, and Steven P. Russell. The

technical contract monitor at OTP was Dr. Vincent Sardella. Dr. Sardella and James Alleman of the Department of Commerce provided many helpful suggestions for the study,

4p

Before the proposal was funded, however, the author and his dissertation committee had outlined a course for research that would continue whether or not the proposal was funded. In addition to the economic analysis required in the OTP study, the author was to place this analysis in a suitable policy setting and to make recommendations, as appropriate, for changes in future regulations. The dissertation committee, to which the author is especially grateful, consisted of Professor Parker, Professor Linvill, and Professor Lyle M. Nelson of the Communication Department,

4q

4r

I hope that this study will be of value to the Federal Communications Commission and to Congress, in whose hands rests the future of the television industry. Our results indicate that the joint regulation of pay, advertiser-supported and public television will be a difficult task to execute in the best public interest, but that this difficulty will be

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a small price to pay for the potential public benefits
of insightful and decisive policy formulation,

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I INTRODUCTION

A. Overview

Pay television regulation has been dominated by a single regulatory issue: the impact that pay television might have on conventional television service. In 1968 the Federal Communications Commission created regulations designed to allow pay television to exist but at the same time designed to protect advertiser-supported and public television, which are usually referred to together as free television.

When pay television regulations were first formulated in 1967, there were virtually no data on consumer demand for pay television, and the FCC could not rule out the possibility that pay television might cripple or even kill free television in the absence of anticompetitive regulations. As a result, the Commission sharply restricted pay television, through a set of regulations popularly called the antisiphoning rules because they were

designed to prevent pay television from "siphoning away" free television's programs. The FCC has twice reconsidered these rules. Yet in both instances the Commission was plagued by the fundamental problem that first necessitated the rules: in all the oral and written testimony presented to the Commission, there were only a few scraps of demand information.

8a2

Until consumer demand is better known, it is unlikely that the Commission can take any strong actions to reconsider its original regulatory approach, even though that approach was created from necessity rather than long-range planning. Of course demand cannot be projected precisely into the very distant future with today's data, but such projections are not needed for regulatory improvement. At present, it would seem to be sufficient, given existing practical constraints upon what regulators can accomplish today, if we could characterize demand as falling into one of three levels.

8a3

In the first level, pay television demand would be so high as to swamp free television. In the second, pay television demand would be high enough, in an upper-bound analysis, to interact significantly, although moderately, with free television. In the third, pay television

demand, in an upper-bound analysis, would be so low as to leave conventional television virtually untouched.

8a4

If consumer demand will be high enough to severely damage conventional television in the absence of regulation, then the present regulatory course, which essentially grants absolute protection from competition to conventional television, is almost certain to be retained. But if economic interactions between pay television and conventional television will be negligible to moderate, then the FCC's current regulatory approach will no longer be firmly grounded in obvious benefits to the public. The FCC would not be justified in continuing its stringent anticompetitive policy without serious consideration of other courses of action.

8a5

While few data on consumer demand for pay television were available in 1967, the picture in 1973 was changing rapidly. Several pay television operations were underway and more were being built. Their collective experience would rapidly become sufficient to form a good bracket around demand for today's program mix, which is about 120 movies per year in most operations, although some systems offer a significant number of sports events. In addition, data were available from situations analogous to pay television, and these data appeared to allow an analysis

of revenue growth as the program mix broadens in the future to encompass sports, other entertainment and "nonentertainment" programs. Overall, at the beginning of 1973, prospects for projecting reasonable upper bounds on consumer demand for pay television appeared to be good,

8a6

This study examines demand data needed to probe whether pay television would cause substantial harm to free television under open competition. The FCC has focused on this question in the past when reconsidering the antisiphoning rules. But the current rules may also be challenged on other grounds, such as compliance with the First Amendment or antitrust statutes. The Justice Department, for example, has already admonished the FCC for neglecting antitrust statutes<0>. Although demand information is required in the assessment of antitrust issues, it is fair to say that our study examines only one aspect of the reassessment of pay television regulation. This restriction of focus was accepted first to keep the scope of the study reasonable and second because antitrust arguments, and perhaps even First Amendment arguments, seem, to the author, to have little chance of changing the current rules until the rough magnitude of potential economic interactions between pay television and free television are known.

8a7

There were two parts to the demand analysis in this study. The first projected reasonable upper bounds for national pay television subscribership and revenues to the year 1985. The second projected reasonable upper bounds on specific demand parameters relevant to the analysis of potential economic interactions between free television and pay television. By reasonable upper bounds we mean estimates that include assumptions and interpretations of data that tend to overstate demand, yet which are not highly unrealistic. Upper bounds were calculated because most regulators are interested in a "worst case" analysis of potential economic interactions between pay and free television in the absence of anticompetitive rules.,

8a8

Table III-16 (Page 101) presents our upper-bound estimates for national pay television subscribership and revenues. At the beginning of 1980, we project up to 7 million subscribers and \$583 million in national revenues. By the end of 1985, we project up to 16.2 million subscribers and annual revenues of \$1.9 billion. Our sensitivity analysis indicates that our long-term upper bounds are less precise than our 1980 projections,

8a9

Free television now costs consumers \$5 billion per year<1>, while our long-term projections would place pay television at about 40 percent of that figure. This might

indicate that potential economic interactions between the two media are rather likely, but size alone is misleading. For example, the movie theater industry has revenues of \$1.4 billion dollars (see Table III-9), while we project movie revenues on pay television at only \$0.4 billion. Yet historically it was the theater industry that suffered competition from television, and in fact the theater industry pays for the bulk of movie production expenses, generating for free television its most popular programming. So size alone does not measure potential economic interactions; it is necessary to model interactions, identify specific demand parameters in the models and quantify these.

8a10

We did model potential economic interactions in four areas: audience loss and competition for movies, sports and series. Although audience loss is not directly addressed by the antisiphoning rules, it is an important policy concern. Competition for movies, sports and series was specifically addressed in the antisiphoning rules. After developing the models,* we identified key demand parameters and quantified them with the best data available or at least noted the ranges over which there would not be negligible interactions between pay and free

television. We also quantified supply parameters as required by the models.

8a11

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* In general, our modeling involved a "siphoning" paradigm, that is, direct bidding between pay television and advertiser-supported television for individual programs on the basis of rentals each medium could pay. We recognize that a full analysis would compare the marginal revenues and costs that a program would bring to each medium and would simultaneously examine bidding for all types of programs. To some extent we did consider incremental bidding strengths. But full incremental modeling would have been impossible with today's data. Moreover, such a detailed model is not necessary for a preliminary estimation of relevant demand parameters,

8a11a

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From our analysis of potential audience loss, we concluded that advertiser-supported television's prime-time audience loss, even under assumptions that should strongly tend to overstate real losses, would be less than 5.8 percent at the end of 1979, and 11.9 percent at the end of 1985. Population growth alone should approximately offset this level of loss.

8a12

Why is potential audience loss so small, in view of pay television's large projected revenue growth? The answer is found in our analysis of consumers' demand for additional programs like those now shown on network television in prime time. Our analysis, presented in Sections IV-E and in the Appendix of Reference 1, indicates that consumer demand for such programs is very small compared with demand for "box office" programs, that is, programs more expensive to produce than those ordinarily shown on the networks (for example new movies) or appealing to narrow audiences. This same analysis caused us to place a low upper-bound on pay television's ability to compete with free television for conventional-type television programming. However current data are not excellent, and a few market tests of conventional-type television programs would do much to test the validity of our analysis.

8a13

For movies, potential economic interactions are critically dependent upon the revenues generated during second, third, and even fourth runs on pay television, not upon their first-run rentals. Our analysis indicated that if revenues from pay television decline with subsequent reissues at about the same rate they do in theatrical exhibition (which has roughly analogous economic

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characteristics), the network premieres of movies will not be delayed more than one year. However under current FCC rules, reruns are sharply curtailed, so we have no direct data on pay television reissue demand,

8a14

For sports, the picture is very complex and differs from sport to sport. In general, our worse-case analyses indicate comparable bidding strengths for the two media in some instances. But our data are very indirect and scatter is high, so worst-case analyses may be rather misleading. Until pay television offers a substantial number of sports events, especially in the case of football, the picture will remain cloudy. Comparability of bidding strengths means that full marginal economic analysis of revenues and costs for the two media should be considered, and we did examine evidence concerning the likely substitutability of different sports events on pay television,

8a15

During the next three to five years, many more data will become available, as pay cable probes new markets, as STV operations begin and as sports and other programs are offered on pay television. These data should do much to improve our estimations. Section V discusses the future availability of data,

8a16

Yet even after three or five years, a substantial irreducible core of uncertainty will remain, simply because of the FCC's antisiphoning rules. These rules prohibit the paycasting of programs in uncertain areas and as a result tend to systematically prevent precisely the kinds of market tests needed to assess whether the antisiphoning rules are necessary or desirable. In movies, the situation is particularly bad. Unless some pay operators are permitted to show second, third and even fourth runs of movies, it seems doubtful that much improvement of our current estimates of potential economic interactions under open competition will be possible,

8a17

In sports, the nature of consumer demand is currently known only poorly, so it is difficult to assess the impact of the current rules on data collections. However the greatest uncertainty exists in the critical category of professional football, and the current rules probably inhibit the market testing of professional football games to a considerable extent; they certainly do in markets where many games are now shown.

8a18

The new series rule, created since this study was completed, effectively prohibits the paycasting only of series that have been shown on free television. Yet as our analysis indicates, demand for conventional-type

television programming appears to be low, and pay operators are not likely to produce any series programs like those now shown on television for many years. The only way to probe series demand in the near future is to telecast off-network reruns. While such programs are likely to have substantially lower demand than new series, they should be sufficiently close surrogates to test the validity of our basic conclusions about the demand for conventional-type television programming. If such testing invalidates our basic conclusions, our analysis will have to be substantially revised,

8a19

Although allowing variances to the current rules, in order to generate needed market data, will produce different benefits in the three cases of movies, sports and series, there is a pattern to the benefits that would be gained. These tests would be most conclusive where potential interactions would be most immediate under any relaxation of the antisiphoning rules, i.e., for movies, and least conclusive where potential interactions are unlikely to occur for many years, i.e., for series. For longer-term potential dangers, there is less need for accuracy, but at the same time, uncertainties are greater and tests can greatly reduce current uncertainties,

8a20

In light of the potential benefits that could be

gained from market tests now prohibited by the antisiphoning rules, and in light of the potential paralyzing effects if these market tests are not made, we are led to recommend that the Federal Communication Commission immediately embark upon a program to selectively relax the antisiphoning rules. In Section VI we discuss how the FCC might implement a program of market testing without damaging its long-term options.

8a21

This study has concentrated on data collection and analysis, because this is the most pressing need facing the FCC in its attempts to improve pay television regulation. Yet it is obvious that at some point data analysis must lead to changes in regulatory philosophy. In fact our conclusions indicate that the FCC, if it is to continue acting in the public interest, may have to substantially alter its basic philosophy in the near future. Our findings indicate that interactions between pay and free television will be negligible to moderate; yet current rules were created to cope with a pay industry having a high potential for destruction. Of course our findings must be tested and improved, yet it is not premature to consider new regulatory directions.

8a22

To discuss how the FCC might approach pay television in the future is a large project, far beyond the scope of

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this study. However we would like to present some background considerations that would have to be built into future regulatory approaches if open competition between pay and free television would be benign or at least moderate. Before doing this, however, it seems best to summarize the organization of this dissertation,

8a23

B. Organization of the Dissertation

8b

Our projections are presented in Sections II through IV. Section II presents general background information about pay television and introduces the data used in the analysis. Section III discusses the projection of national subscribership and revenue growth. Section IV examines specific aspects of demand relevant to audience and program siphoning. Because this analysis is lengthy and complex, we present a summary of our approach, conclusions and the outlook for future data collection in Section V. Sections II through V are taken virtually intact (there are no changes in substance at all) from the Stanford Research Institute final report to the Office of Telecommunications Policy<2>.

8b1

Section VI presents our recommendations. This Section briefly discusses the probable need for a major reassessment of the FCC's basic regulatory approach to pay

television (a topic discussed in the following subsection), then considers the need to organize the data that will be generated in the near future. The Section also presents an immediate recommendation: that the FCC should initiate a program of experimental relaxations to its current antisiphoning rules. Considerations concerning a program of experimental relaxations are discussed,

8b2

C. Considerations for Future Regulatory Policy

8c

1. The Primacy of Advertising Support

8c1

The FCC and Congress have given "free" television a position of primacy, in which no competition from pay television is to be allowed. This is understandable, because viewers really appear to be getting something for free. Although they must watch at least eight minutes of commercials each prime time and more during other hours, people seem to consider this a modest price to pay.

8c1a

But having to watch commercials is not the only price people pay. Viewers must eventually pay the costs of television production and distribution. They do this by paying premiums on advertised products. These premiums, if they offset costs, must run about \$5 billion

each year<1> -- \$75 for each American household, So the "free" nature of television, in the end, is an illusion.

8c1b

Compared to this \$75 annual cost of free television, which is borne by all Americans, pay television fees now run about \$100 per year and are borne only by actual subscribers. So if the real costs of free television to the consumer are taken into account, the position of primacy given to advertiser-supported television relative to pay television is not simple to defend. Given this rough equality of demand between the two media, even if pay television were to substantially cut into free television, the effects of this competition might be highly beneficial to the public.

8c1c

Advertiser-support does more than burden Americans with a \$5 billion annual cost. It also constrains what television can show. Advertisers are willing to pay only about 3.2 cents per household viewing hour<1>. But television's costs are high, and this low level of per-household support can only bring mass audience, comparatively low-priced programming,

8c1d

A concrete example is the CBS telecast of Much Ado About Nothing in 1972. Nearly a tenth of all American households watched this program<3>, a tremendous triumph

for the arts. But for CBS Ado was a disaster. It cost \$948,400<4> to produce -- \$472,400 per hour for the two-hour show. But two standard one-hour series episodes could have captured 15 percent of the nation's household and cost only \$400,000 to produce. As a result of the Ado "disaster," the network revised its plans to offer other quality programs<5>.

8c1e

In the evening hours, advertiser-supported television can only show programs costing about \$200,000 per hour and attracting about 18 percent of the nation's households when they are telecast. Television does offer some better programs, but these exceptions only prove the rule. Blockbuster movies can only be shown during sweep weeks, when the networks can use their high ratings to manipulate the ratings system. Such excellent dramatic programs as the Autobiography of Miss Jane Pittman can attract good ratings but, like Pittman<6>, they cost about \$500,000 per hour to produce, too much to be a television staple. Even educational programs, such as The Ascent of Man (\$350,000<7> per hour) and National Geographic (\$335,000<8> per hour) are more expensive than run-of-the-mill series, and they attract smaller audiences.

8c1f

This is not to say that television cannot offer

excellent programs. There is nothing in the nature of the video medium that holds cost per viewer hour to 3.2 cents. Movies are a video product (in an extended but relevant sense), and they cost about \$2 million. The Ascent of Man was also a video product, and its cost, as noted above, was much higher than the \$200,000 series average,

8c1g

Television's problem is the 3.2 cent per viewer hour ceiling that advertising support places on television viewing. Pay television experience has proven that consumers value some of their time, although not a great deal of it, at more than 3.2 cents per hour. For certain excellent programs, a substantial number of people are willing to pay over \$1.00 per hour for their family's entertainment or education.

8c1h

In summary, free television is not free. It costs the typical family about \$75 years, requires viewers to watch eight or more minutes of commercials each hour, and forces television to offer only mass-audience programs of limited quality. This may still be a fair price to pay, but it is not so low that advertiser-supported television should without question be given a place of absolute primacy by the FCC and Congress. With pay television, even in the long term, costing only about half as much per capita, the FCC should examine instead whether

pay television should not only be allowed to compete with free television but even encouraged to do so,

8c11

2. The Historical Development of Advertiser Support

8c2

How did advertiser support come to dominate television? The answer is largely historical and begins with the earliest days of radio, in the 1920's. After World War I, the government created a virtual monopoly in radio production and distribution^{<9>}. It created the Radio Corporation of America as a joint subsidiary of AT&T, General Electric and Westinghouse. This monopoly was to create a commercial radio industry in the United States.

8c2a

Among the early pioneers was David Sarnoff of RCA. Sarnoff developed a plan in which the radio manufacturers would pay for radio production and distribution out of the profits from receiver sales^{<10>}. For a time, it seemed that fees paid on receivers would be the dominant mode of financing for radio. But AT&T, which did not manufacture receivers, would not have shared expected profits; in 1923 (after leaving RCA), AT&T began to sell commercials on its New York station^{<9>}.

8c2b

AT&T's competitors and the government strongly opposed the commercialization of radio^{<9>}, but the

Government had no effective power over the industry then, and AT&T maintained its commercials. Other station owners quickly followed suit and radio was commercialized before any government action could be taken.

8c2c

In retrospect, receiver profits alone would probably have been insufficient to finance radio. Performers began to demand payment for air play, not being content with the free publicity it gave them, and costs in general rose very rapidly.

8c2d

But if commercial support was opposed, why was direct consumer payment ignored? The answer is simple. In the 1920's, when basic transmission hardware was barely available, the technology to charge for programs was completely unavailable. Direct consumer payment was probably never considered.

8c2e

When television emerged after World War II, the situation was very different. In the late 1940's, pay television hardware was developed, and three companies undertook field tests in 1950 and 1951. In 1952, the Zenith Radio Corporation formally petitioned the FCC to make pay television a national broadcast service. But by the 1950's, the FCC had forgotten the arguments against advertiser support in radio and had come to expect this

method of financing as natural and self-evident. Not until 1955 did the Commission even act on the Zenith request, and by then advertiser-supported television was well-entrenched. Although Zenith and other potential pay suppliers fought continuously for pay television, it was not until 1970 (see Section II) that the legal barriers to pay television were lifted.

8c2f

In summary, advertiser-support has come to dominate television service only because of historical inertia. It was strongly opposed at the time of its creation but eventually became accepted as natural by the FCC.

8c2g

3. A Financing Viewpoint

8c3

In the preceding subsections, we have noted that advertiser-supported television costs the average household about \$75 per year and that this form of financial support for television was largely a historical accident, opposed at the time of its creation in the early days of radio and transferred to television primarily out of inertia. But these are largely negative comments. They do not address how the FCC may consider pay television in its deliberations.

8c3a

To offer a rough but useful paradigm, we

turn to the print medium. In print, there has always been a three-fold system of financing: direct consumer payments, advertiser support, and subsidy by foundations or the government. In print, this versatile system of financing has brought considerable diversity by combining consumer and advertiser demand. In essence, a magazine is a tool for bringing together an audience, production talent and advertisers who share common interests. In magazines, as in newspapers, advertising and direct payments contribute roughly equal shares of total revenues.

8c3b

Print has two lessons to offer. The first is that advertising support and direct payments are not antithetical. For some products, both can pay roughly equal shares of costs without causing problems. For other products, such as books, costs are so high as to make advertising more of a nuisance than a help, so direct payment dominates. Consumer demand, in the end, dictates how the two contributors can interact in the public interest.

8c3c

The second lesson is more fundamental. It is that advertising support, direct payments and subsidy are really only different ways to achieve the same end -- financing the production and distribution of products.

These three financial mechanisms form, in essence, a full system of financing for print, achieving together a greater diversity and quality of product than any one form could achieve alone.

8c3d

For television, these three modes of financing may also be able to work together to create a more diverse and higher quality product than we now enjoy. Television has, historically, not been very creative compared to its traditional pay-to-view counterpart, theatrical movies. Pay television may also stimulate diversity and act jointly with advertiser-supported television (just as theaters do now) to create a better product than either medium alone could produce.

8c3e

But exactly what would the outcome of full open competition look like? With current data we cannot tell. But by asking the question "what would a full system of financing for television bring?" instead of "how can we best provide absolute protection to advertiser-supported television?" the FCC and other interested parties can begin what is likely to be a long task: the creation of a full system of financing for television that best serves the public interest,

8c3f

VI RECOMMENDATIONS

A. Overview

Our findings have both longer-term and immediate action implications for the Federal Communications Commission. For the long term, our results indicate that the FCC, if it is to create beneficial regulations in the public interest, will probably have to alter radically its basic regulatory approach to pay television, because the central premise of the current rules--that open competition would produce destructive competition--is unsupported by the evidence. For the intermediate term, the next five years or so, the FCC should act to gather the information needed for this change. Immediately, however, the FCC should counteract one highly undesirable feature of the current antisiphoning rules that might delay or even seriously compromise long-term regulatory improvement; this will involve a major program of experimental relaxations of the current antisiphoning rules.

In this final section of the report, we discuss why our findings lead us to these policy conclusions. We also discuss in some depth the immediate actions that we feel the FCC must take if continuing regulatory improvement in the long term is to be ensured. Although we would prefer to present an extensive discussion of longer-term actions the FCC should take, this would be far beyond the scope of this study. Also, because this study did not address antitrust or First Amendment considerations, its recommendations for FCC actions may be more limited than a full policy analysis, embracing the statutory desirability of open competition and constitutional desirability of freedom from program restrictions, would require,

9a2

B. Results Having Major Action Implications

9b

Section V presented conclusions in considerable detail. It is useful, however, to explicitly note conclusions that hold major policy implications.

9b1

1. Viewing Time

9b2

Pay television viewing time, according to our analysis, is likely to be restricted by the high price that will be charged on pay television (Pay television now costs over \$1.00 per viewer hour). In addition, not all

households will take pay television. Our analysis indicates that only about a fifth of all households will be pay subscribers in the long term. Even assuming that prices fall to a quarter of their current levels, and that every hour of pay television viewing comes at the expense of one hour of free television viewing in prime time, free television's prime time audience would decline by only 11.9 percent in 1985. With more reasonable cross-impact assumptions, the effect would be much smaller. These conclusions are obviously dependent upon the analysis (noted below) that consumers have relatively little demand for additional conventional-type television programming.

9b2a

2. Movies

9b3

In theatrical exhibition, movies collect most of their ultimate rentals on the first run. The first reissue generates less than 30 percent of the first run rentals, and subsequent reissues generate even less. As a result, network television can usually outbid theaters for movies after one or two theatrical reissues. Our analysis shows that if rentals decline with pay television reissue at something near the rate they do with theatrical reissue, then the normal network premiere dates of movies will be only slightly affected. It does seem likely that pay television reissue declines will approximate those of

theatrical reissues. In both exhibition modes, the audience is offered the program many times on each run, so the audience tends to be saturated quickly.

9b3a

Unfortunately, current rules (including those adopted since the data analysis was completed) effectively forbid second and higher reissues on pay television. As a result, unless the FCC allows experimentation forbidden under current rules, there will be no adequate data with which to verify or invalidate our analysis.

9b3b

3. Sports

9b4

For sports, we had mostly indirect data on consumer demand. We did, however, estimate the relative attractiveness of individual events in different sports compared to the attractiveness of average movies on pay television. For sports that have been shown in substantial numbers on pay television, mainly basketball and hockey, our predictions are in excellent agreement with the results of pay television exhibition. Unfortunately, for the two most important American sports, baseball and football, there is strong disagreement in our underlying data, and there have been no significant field tests on pay television. For football, projections from our two best data sources differed by more than a factor

of two. All of our conclusions concerning sports are therefore imprecise,

9b4a

To probe the sensitivity of our analysis of this imprecision, we compared current free television rentals and likely Pay television rentals for baseball and football, using projections based upon different data sources. We performed this analysis for several types of national and regional networks. In general, our highest projections would imply rough equality of rentals between pay and free television in three to five years, while our lower projections would indicate substantially lower rentals from pay television even in the long term. Thus it seems imperative to collect a significant amount of actual market test data from pay television and to redo our analysis with the aid of these data.

9b4b

A major question in sports is whether different sports events will be treated as different program categories by consumers. If they are not, then the very large number of sports events available in a typical region would probably saturate demand to the extent that pay operators would only be willing to show some of them. Our analysis of two data sources indicated that consumers do, in fact, view different types of major sports events as being reasonably close substitutes. This finding

indicates that analysis of bidding between pay and free television in the case of sports is likely to be very complex,

9b4c

4. Additional Conventional-Type Television Programming

9b5

Our analysis found rather low demand among consumers for programs like those already offered on the networks. Essentially, our analysis indicated that the networks have saturated the public's desire for such programs, so that pay television, like theatrical exhibitors, will be pressed to offer more expensive or select audience programs,

9b5a

This analysis is, in many ways, the pivotal portion of our study. If demand for additional conventional-type television programs is not small but rather comparable to, say, demand for new movies on pay television, then many aspects of our analysis would have to be redone. It is essential, therefore, to test this part of our analysis as soon as possible,

9b5b

Practically, there is only one way to do this: by offering a large enough number of representative programs on pay television. The data source used in this analysis, consumer purchases of additional network service

by means of cable television subscription, seems to be as accurate an analogous data source as possible,

9b5c

Unfortunately, no program producers seem willing to create network-like series for pay television. While this is understandable, in light of our demand analysis, it means that it will probably take several years to check this crucial portion of our analysis if testing has to be done with made-for-pay-television product.

9b5d

One form of testing, however, does seem possible in the near future; this is the exhibition of off-network reruns, in substantial numbers, on pay television. Reruns will almost certainly have lower demand than new series, but paycasting reruns can at least determine whether our analysis is grossly in error. The exhibition of reruns on pay television will require a relaxation of current antisiphoning rules.

9b5e

C. Action Implications for the Long-Term

9c

As noted in Section I, the Federal Communications Commission's approach to pay television regulation is predicated on a single principle: absolute protection for advertiser-supported television. Historically, this principle was adopted for pragmatic reasons, not theoretical ones. The FCC created the stringently

anticompetitive antisiphoning rules primarily because it could not tell whether pay television would destroy free television under free competition or less stringent rules. Demand data were virtually nonexistent, and no other course of regulatory action seemed desirable.

9c1

There are two reasons why absolute protection might validly be maintained indefinitely as the FCC's guiding principle. The first is that free television might be considered a uniquely valuable service. Certainly, consumers do value free television highly. But this reasoning is superficial. As noted in Section I, the average American family is paying about \$75 per year⁽¹⁾ for free television. Although these charges are indirect, they are large and cannot be lightly neglected. Also, the public may be willing to pay more than the 3.2 cents⁽¹⁾ per viewing hour that sponsors can profitably pay, in order to spend part of their viewing time watching programs of greater interest to them than standard network and independent television fare.

9c2

A second reason to preserve the current regulatory approach would be if pay television really would cause severe damage to free television, or even modest harm not offset by greater gains. In other words, if the FCC's concerns when it created the antisiphoning rules prove

well-founded, then something akin to absolute protection would seem desirable,

9c3

But if consumer demand for pay television is only moderate, so that even under open competition advertiser-supported television would be harmed only modestly and there would be simultaneous gains to the public under open competition, then the FCC would probably be forced to take a broad view of television, seeing it as a system of service financed by a full complement of mechanisms, including direct consumer payments, advertising, and public grants,

9c4

This salutary-competition outcome would certainly not be new in regulatory history. For example, when the Interstate Commerce Commission first regulated trucking, it viewed highway transport merely as a competitor to a uniquely valuable rail system. Where there was a rail line between two points, trucking was routinely forbidden, even if rail service was poor^{<23>}. In time, of course, a more balanced view was forced upon the ICC. First, it became clear that trucking also had unique and complementary benefits; while rail was slow but inexpensive, trucking was fast but expensive. Second, it became increasingly obvious that the public would not be harmed if considerable competition were allowed, because

benefits from an excellent trucking system were being understood by the Commissioners. While it can be argued that competition eventually did cripple the railroads, it is difficult to say whether this crippling was inevitable under open competition or whether the ICC's lack of a systems viewpoint prevented the emergence of a sound cooperative transportation industry. In addition, although the decline of the railroads may be lamentable, the trucking industry's vigor has created a value to society that was totally unanticipated by the ICC. It would be unfortunate if the FCC were to similarly underestimate the value of pay television.

9c5

It is impossible to say, with today's rough knowledge, what a full system of television financing would bring. We can, however, sketch a few generalities that give the possible flavor of the future.

9c6

It may well be, if our analysis is correct, that harmful competition would be negligible under open competition, i.e., that siphoning is a nonissue. Certainly the movie theater industry, which we noted in the Introduction is very large, has helped rather than harmed free television in the total absence of anticompetitive regulations. Our analysis indicates that the same basic mechanism that caused helpful competition

in the case of theatrical exhibition, namely the public's demand for programs more expensive to produce than those shown of free television, is present in pay television. However before more confident projections can be made, better data are needed.

9c7

Note that helpful competition does not imply negligible interactions. The movie theater industry and the television industry are both buyers for the same product. Instead, helpful competition implies that the two media have synergies. In the case of movies and free television, both media finance the production of more expensive programs than either alone could fund. Yet their audiences are sufficiently disjoint that prior exhibition in theaters does not destroy a movie's value on free television.

9c8

In essence, future regulation will have to focus broadly on the system that finances television production and distribution. Today there are essentially three stages in the flow of products for television: live attendance (for some products), exhibition on a primarily network, and subsequent exhibition on independent television stations. Pay television will probably change the flow of programs through these markets in three ways: by increasing the volume (and perhaps the quality) of

programs, by creating a new set of made-for-pay-television programs, and by changing the timing of flows.

9c9

Needless to say, if pay television demand is negligible, its impacts will be slight. At the same time, if pay television demand is substantial (generally more substantial than our study indicates), the flows will be changed substantially, just as they did when free television changed the flow pattern in the 1950's. However the greater the change in the flow structure, and so the greater the impact on advertiser-supported television, the greater will be pay television's ability to generate the types of programs that free television can offer later, and the greater will be the intrinsic public value of pay television.

9c10

How do the results of our study fit into this overall picture? Basically, our results indicate that pay television demand will not be large enough to cause severe harm to free television, although present data are not sufficiently precise to allow us to project whether potential interactions will be negligible or modest. While this is insufficient to decide among new policy alternatives, it is sufficient to show that the principle of absolute protection for free television, upon which the current rules were predicated, is unsupported. It is also

sufficient to indicate that the FCC's past policy of making relatively cosmetic and "fine tuning" changes to its current rules is probably inappropriate. Unless our analysis is fundamentally incorrect, the FCC will eventually have to deal with a situation of at least rough equality between pay television and free television. In order to avoid the frustrations and problems that faced the ICC in its regulation of highway transport, the FCC should take immediate actions to prepare for fundamental changes in its regulatory approach,

9c11

In this study, we cannot begin to discuss alternative regulatory patterns for pay television. This is a large subject area and, more immediately, the data to even formulate alternatives well is not yet available. Instead we will discuss some general things the FCC should do during the next five years and some immediate actions that are needed.

9c12

The FCC will be faced with difficult tasks in the future that may take it beyond its traditional posture as a disposer of suggestions rather than as a proposer of alternatives. As a practical matter, the FCC will probably have to rely upon outside agencies to make proposals, yet, as we discuss below, the FCC should begin to develop the types of expertise that will allow it to

decide among future alternatives that will be presented to it, and there are certain immediate actions the FCC must take to ensure that sound long-term regulation for pay television will be created,

9c13

D. Action Implications for the Next Five Years

9d

For the FCC to eventually revise its approach to pay television, certain things must be done during the next five years. First, alternative regulatory patterns must be explicated. It is likely that theoretical formulation will come not from the FCC but from agencies freer to initiate major policy changes, for example other governmental agencies, foundations or industry lobbies. It seems essential that the FCC have suitable alternatives to select among when the quantitative data sufficient for reassessment becomes available.

9d1

Second, either the FCC or another agency should assemble the data that will become available during the next five years. As noted in Section V, the pay television industry will generate large amounts of data during the next three to five years. But this data must be collected if it is to be useful,

9d2

To make sense of future data, however, some model for pay television's growth and for economic interactions

between pay television and free television will be needed. In this study, we have modeled these processes to the first approximation only, and future research must include the more sophisticated modeling that will be possible as more detailed information becomes available.

9d3

Although future models will be more sophisticated than our own, they will probably follow the basic steps we took. To quantify national subscribership and revenue growth, five steps will probably be required. First, a model for community demand when some base programming package is available must be generate and quantified. Second, the response of individual households to expansions of the program mix must be modeled. Third, subscribership and revenue growth within a community as the program mix broadens must be modeled. Fourth, the expansion of STV's and pay cable's availability to consumers must be modeled. Fifth, these models must be quantified.

9d4

To quantify economic interactions between pay television and free television, however, much more sophisticated modeling seems needed; first, it is necessary to model "siphoning," in which pay television would get programs if it could provide higher rentals for it than free television. This is sufficient if rentals

for the two media are very different. But if revenues are within an order of magnitude or so, then marginal analysis will be needed. Models will have to take into account that both pay television and free television have many programs available to them, so the marginal revenues and costs of individual programs can only be understood if a broad range of information is available. Furthermore, it is not enough to model bidding alone; regulators are concerned with the effects of competition on the public, so if some programs are lost or gained, the impact upon the public will depend upon the programs presented in their place. It is also necessary, in order to assess the value of competition, to weigh benefits and losses to the public from both media under open competition. Overall, however, the closeness of economic interactions will dictate what level of analysis is needed.

9d5

Although more sophisticated modeling will probably be needed eventually, our model should be sufficient to organize general data collection in the near future. As more data become available, several less precise parameters of our model can be remeasured and new projections made. At the very least, new data should be able to subject our model to fairly critical testing,

9d6

Some parameters of our model can already be measured.

For example, when we performed our analysis, only a handful of pay cable systems were built on low-penetration host cable systems. On the basis of available evidence, however, we developed a model to project pay cable demand in any community. For a per-channel pay cable system charging \$8.00 per month and offering 10 new movies each month, for example, we estimated that 23 percent of all initial cable subscribers and 7 percent of all noncable households would take pay television.

9d7

Since our analysis was completed, several pay cable operations on low-penetration host cable systems have since been in service long enough to provide useful data. Agreement between their results and our model is excellent. The only public example now available illustrates this agreement; this is the pay cable operation on the Theta Cable system in Los Angeles, California.

9d8

Before pay cable was offered on this cable system, its community penetration was 18 percent<24>. According to our model, the introduction of pay cable should increase cable penetration to something less than 24 percent*; Theta Cable's penetration actually jumped to 25 percent<24>. Our model also projected that 42 percent of these final cable subscribers should be pay cable

subscribers*; this is exactly the percentage achieved by
Theta Cable<25>.

9d9

.....
*Actually, because Theta Cable charges only \$6.95 per
month<24> for the service, rather than the \$8 in 1974
prices (roughly \$9 in 1975 prices) that we used in our
calculations, our projections for penetrations might not
be upper bounds. Our projections for revenues (price
times penetration), however, should still be upper bounds,
.....

9d9a

While this agreement between our model and actual
demand for today's program mix is satisfying, our
projection of demand growth into the future is less
certain, and our projections of demand for individual
movies, events, additional conventional-type television
programming, etc., are also imprecise. Hopefully, if our
projections really are upper bounds*, future data will
reduce our estimates. However, because we attempted to
estimate reasonable upper bounds, some of our parameters
may have to be reestimated upward.

9d10

.....
*Note that beyond 1980 uncertainties become large enough

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to make reasonable upper-bound estimation less precise,

.....

9d10a

In the end, whether our model or some other model is used to organize the large flux of data that will be generated, it should soon be possible in three to five years to lengthen greatly the time horizon of upper-bound projections. It seems almost certain that the FCC will soon have sufficient data to make long-term regulatory changes, provided it acts decisively to gain access to these data, to organize these data, and to generate optional policies among which to decide.

9d11

E. Immediate Action Implications

9e

1. Specific Information Needs

9e1

We have remarked that without experimental relaxations it will be very difficult, probably impossible, to collect certain data. As a result, there will always be a residue of needed but uncollectable data in areas that must be understood well if potential interactions between pay television and advertiser-supported television are to be estimated precisely enough for regulatory change. We now discuss specific areas of concern.

9e1a

For movies, the question is how rapidly rentals will decline with subsequent reissues on pay television. If theatrical experience is a guide, declines will vary from movie type to movie type and from movie to movie in general. Consequently it is essential to gather data from a large number of pay television reissues -- not only for reissues in the first two or three years after the start of general theatrical release, but for reissues far enough in the future that interactions with network showings would be possible. Unless distant reissue patterns are known precisely, there may be large uncertainties in estimated potential interactions, since these interactions will depend on the incremental rentals from a reissue which brings in a small fraction of first-issue rentals. 9e1b

To ensure the generation of sufficient movie reissue data, it seems best to create a full relaxation of the movie rule for a period of at least three years. We recommend that a three-year moratorium on the movie rule be declared on certain pay operations, and that this be extended three more years if results from the first three years make this appropriate. 9e1c

For additional conventional-type television programming, it is essential to test whether demand is really small, as our analysis indicates that it is. Even

a relatively gross test would be sufficient to test central aspects of our analysis, for example whether our extrapolations are being materially distorted by the fact that some of cable television's attractiveness comes from the cleaning up of local signals as well as from the importation of distant network signals. It is essential that a large number of off-network reruns be shown on pay television, because the demand for such programs is likely to decline as more are offered. It is only if pay television is able to bid on a large number of programs that siphoning will be a serious regulatory concern.

9e1d

As in the case of movies, we recommend that a full moratorium on the series rule be instituted for certain pay operations, for a period of three years plus an optional three-year extension. Because most off-network reruns come with advertising, a concurrent relaxation of the advertising prohibition should also be created.

9e1e

For sports, there are likely to be two periods to the data collection. In the next two or three years, initial data on demands for individual baseball, football and other key sports events will be generated, allowing raw bidding potentials for pay television and free television to be assessed. Later, it may be appropriate

to determine the marginal revenues and costs of exhibiting different types of sports on pay television, if raw bidding potentials appear roughly equal. This will allow marginal revenues, costs and opportunity costs to be assessed, so that potential economic interactions can be estimated. Another key issue is to what extent different types of sports events are viewed as substitutes by consumers. Substitutability, which is central to marginal revenue analysis, can be determined roughly during the next three to six years, perhaps determined well by the end of that period.

9e1f

Again, a full relaxation of the sports rule for certain pay television operations is desirable in order to collect the volume of data that will give a reliable data base. A three-year relaxation, followed by an optional three-year relaxation also seems appropriate, since data from the first three years will allow a determination of whether a second relaxation period can be created safely.

9e1g

For the sports rule, however, there is one concern. Our maximum upper-bound estimate indicated that networks made by interconnecting STV stations in a region might produce measurable interactions during the relaxation period. However STV seems likely to emerge considerably more slowly than our projection indicates and

network interconnection should come even more slowly. So it still seems appropriate to extend relaxation of the sports rule to STV stations,

9e1h

One factor that cuts across these three categories is the need to collect a large amount of data. In part, a large quantity is needed because of expected program-to-program variances. A greater need for quantity, however, stems from the fact that the FCC should determine how much interaction will be needed in the future if it to adopt a systems approach to television financing, not simply whether any interaction will occur. This requires sufficient data to reliably estimate marginal demand for individual programs,

9e1i

2. Difficulties and Their Solution

9e2

The recommendation for experimental relaxations is not a new one. Since late 1972 pay television spokesmen have been calling for a national moratorium on the rules. In general, two reasons have been cited for a moratorium. First, it would give the fledgling pay television industry more product to grow upon. Second, it would probe whether the antisiphoning rules are really necessary. This analysis, being an upper-bound estimation, does not bear upon the pay industry's possible

need for programming. Its findings concur, however, on the need to probe the antisiphoning rules.

9e2a

The FCC has been nearly silent on past recommendations for moratoria. It seems to be, however, that three factors are causing the Commission to reject moratoria. The first is the problem of "grandfathering." Even if it is made clear to pay subscribers that they are seeing certain programs on an experimental, limited-term basis, it might be impossible to take programming away later.

9e2b

The second factor is the selection of pay television systems (to reduce the grandfathering problem), by granting variances to only some pay television operations but not to others. Simply the mechanics of deciding among competing applicants would seem to be a major chore. Furthermore there might be political pressures to favor certain regions or at least to balance geographically the operations receiving variances.

9e2c

The third factor is tied to the other two. This is the cost/benefit of a program of experimental relaxations. If the FCC commits itself to a program of experimental relaxations, this will consume staff time in the analysis of results, and there may be pressure to

radically alter the composition of the current rules or even to scrap them entirely. This could place a major burden on the Commission's staff.

9e2d

None of these factors, however, should be debilitating. Most directly, the fact that a program would consume Commission resources ignores the potential (and by our results, probable) need to create a new regulatory approach to pay television. Television is a very important service in America, and the FCC cannot validly ignore the benefits that a mixed system of financing production and distribution has brought to the print medium and to movies.

9e2e

Burdens on the FCC, however, can be greatly reduced by requiring operations that take advantage of a moratorium to collect their own data and to submit them in a standard form, which we discuss below. This will not eliminate staff burden, because some analysis will still be needed within the FCC, but it should reduce the burden to an acceptable level. Furthermore, if the data are made public (subject to the reporting form protecting the privacy of individuals and the pay television corporation's identity), outside organizations are likely to submit analyses of their own.

9e2f

Both grandfathering and the selection of operations can be addressed with a single tool. This is the creation of a national moratorium in which participation by pay operations is voluntary, but in which only operations that agree to provide certain proprietary data may participate. This will eliminate the selection problem entirely, or at least reduce selection to well-defined technical characteristics of the pay operation. Because participation will be dependent upon the submission of proprietary data, participation should be somewhat limited, reducing the grandfathering problem,

9e2g

This approach solves the selection problem cleanly. It does not solve the grandfathering problem as nicely. However grandfathering does not seem to be a major problem to begin with. By the end of 1978, even by our upper-bound estimation, the pay industry seems likely to be only about a third of its ultimate size. Even if virtually all pay operations participate, there seems to be little danger of grandfathering a national system of pay television. However it would definitely seem unwise to wait much longer to create a program of experimental relaxations.

9e2h

To further reduce the danger of grandfathering whole regions, a quota should be set, in which no more

than 25 percent, say, of all cable subscribers in a region should be served by participating operations. To select operations to meet this quota, successive random selection from applications would be made until the limit is reached. For STV, only the first operating station in each of the STV networks defined by Table IV 9 would be permitted to participate.

9e2i

The Hartford STV experiment of the 1960's obviously motivated our proposal to remove difficulties by creating a participative program. However we have attempted to overcome the main difficulties of that experiment by defining exact data to be supplied by applicants. Most importantly, this means that selection need not drag on for months or even years. It also means that the FCC is unlikely to be stuck with the results from a single pay television operation.

9e2j

3. Criteria for Participation

9e3

We have discussed how the preselection of minimum data to be provided will eliminate or satisfactorily reduce the major road blocks to a program of experimental relaxation. We now discuss the rather simple data that should be required. We discuss per-program and per-channel charging separately, because

these can provide different data. STV and pay cable are not discussed separately; although it is useful to compare STV and pay cable operations using the same charging mechanism, the data submitted would be identical.

9e3a

a. Per-Program Operations

9e3b

Per-program operations must first provide data on growth of their penetration in the community over time. If the pay operation is cable-based, growth in the penetration of the host cable system over time and the fraction of cable subscribers taking pay television must also be reported. For pay penetration, reporting should begin from the pay system start-up date; cable penetration history (if applicable) must be reported from a year before start-up (but not going back more than three years). If the pay company can report penetration in terms of the number of homes to which pay television has been marketed or is available to, this must be reported.

9e3b1

If any consumer survey has been performed previously, portions that relate pay television and cable (if applicable) penetration to consumer demographic characteristics must be reported. A brief demographic profile of the community and service area(s) must be provided. The applicant must also agree to do one

demographic survey of the service area each year and to to obtain demographic data from its subscribers. At a minimum, demographic information must include average age of the heads of the household, pre-tax annual income from all sources, and number of persons in the household who are living there and can watch pay television with some regularity.

9e3b2

For each run of each program shown during the moratorium, the cumulative percentage of subscribers purchasing the program, the price charged, and the number of showings must be reported. Correlations among all programs (within a single calendar year) and among individual programs and household demographics must be reported. For movies, the percentages of subscribers purchasing a movie during the first run and each subsequent reissue must be reported.

9e3b3

All data must be reported for each calendar year, within three months after the end of the calendar year.

9e3b4

b. Per-Channel Operations

9e3c

Per-channel operations must first provide data on growth of their penetration in the community over time. If the pay operation is cable-based, growth in the

penetration of the host cable system over time and the fraction of cable subscribers taking pay television must also be reported. For pay penetration, reporting should begin from the pay system start-up date; cable penetration history (if applicable) must be reported from a year before start-up (but not going back more than three years). If the pay company can report penetration in terms of the number of homes to which pay television has been marketed or is available to, this must be reported.

9e3c1

If any consumer survey has been performed previously, portions that relate pay television and cable (if applicable) penetration to consumer demographic characteristics must be reported. A brief demographic profile of the community and service area(s) must be provided. The applicant must also agree to do one demographic survey of the service area each year and to obtain demographic data from its subscribers. These surveys may coincide with ratings collection described below. At a minimum, demographic information must include average age of the heads of the household, pre-tax annual income from all sources, and number of persons in the household who are living there and can watch pay television with some regularity.

9e3c2

At least six times each year, the pay

operation must conduct a ratings probe of its service area. This probe may use any reliable testing means but must be capable of resolving ratings to within a probable accuracy of plus or minus three ratings points. Any probes conducted in the service area must be reported. The parent company of a participating operation must conduct no greater number of probes on any of its nonparticipating operations than the average number performed on its participating operations.

9e3c3

For each program measured during these ratings probes, the cumulative percentage of subscribers purchasing the program and the number of showings must be reported. If possible, correlations among programs (within a single probe) and among individual programs and household demographics must be reported. For reissues shown during the probe, first-run ratings must be reported if available and each household probed should be asked if anybody in the household has previously viewed the movie on pay television, on the current operation.

9e3c4

If there are several participating per-channel operations in a television market, it will be permissible for these operations to cooperate in conducting ratings probes. However, the number of regional probes that must be conducted will rise to six

plus the number of operations participating. In addition, at least seventy five percent of the programs offered by different systems during the sweep period must be identical.

9e3c5

All data must be reported for each calendar year, within three months after the end of the calendar year.

9e3c6

C. Per-Channel Versus Per-Program Data

9e3d

It is obvious that per-program operations offer a greater precision of information than per-channel operations. On the other hand, there will be many more per-channel than per-program operations during the next six, and especially the next three, years. Per-channel systems will therefore provide a rather large volume of information on viewing patterns.

9e3d1

F. Summary of Recommendations

9f

Our results indicate that the fundamental principle upon which the current pay television regulations are based, i.e., absolute protection for advertiser-supported television, is not well-founded. This principle was created in the mid-1960's, when a lack of information about consumer demand for pay television made stringent

anticompetitive regulations a prudent choice. The data presented in our study, however, indicate that pay television demand will not be so large as to swamp free television in the absence of regulations. Rather, our upper-bound projections indicate negligible to moderate economic interactions. If these results are correct, then the FCC should immediately begin to reassess its fundamental policy toward pay television regulation.

9f1

For the long term, the FCC should develop a regulatory policy appropriate for a situation in which pay television and free television are viewed as a joint system for financing television, a system which already includes network television, independent television, movie theaters, sports arenas and cultural theaters. If pay television affects this system negligibly, little regulation of pay television will be needed. But if pay television changes the current system materially, the FCC must develop regulations to ensure that changes are beneficial. These regulations need not be strongly anticompetitive; theaters and television, for example, compete for theatrical movies, but their joint revenues allow the production of more expensive movies than either could afford alone.

9f2

This long-term regulatory change will not come

immediately. At present there is too little data to even formulate alternative regulatory approaches precisely, much less to select among them. Yet the FCC and other organizations must take decisive steps in the near future if future approaches are to be well-founded. Some organization, for example, must formulate proposals for alternative regulations soon, so that when hard data become available, alternatives will be understood and ready for implementation. This formulation must be done fairly soon because, as indicated in the Conclusions (Section V), a great deal of information will soon be available, and the FCC must organize itself to assimilate and understand future data, so that it can act rapidly.

9f3

It is important that general policy formulation and data collection come quickly. In the past, for example in the case of trucking-train competition, regulatory agencies (in this example, the Interstate Commerce Commission) have tended to adopt policies absolute protection for established service providers, only to find later that the public would best be served by a system that treats both the new entrant and the established server as approximate equals. By the time the need to scrap the anticompetitive policy becomes has become realized, however, intellectual and legal precedents have

tended to make conversion very difficult and ultimately incomplete.

9f4

While all future actions will be important, there is one pressing and critical action that the FCC must take in the very near future if needed data are to be available when needed. This is to create a fairly broad program of experimental relaxations to the current antisiphoning rules. These rules forbid pay television to offer programs roughly like those shown on free television today. But the rules have another, undesired, effect: they tend to prevent precisely the kinds of market tests that are needed to collect data critical to the estimation of potential economic interactions between pay television and free television. Unless a substantial number of pay systems are given limited-term exemptions from the antisiphoning rules, the large amount of data that will be generated naturally by pay television during the next three to five years will be insufficient for regulatory action. There will remain a large and critically-placed core of uncertainty about potential interactions. If relaxations are allowed, on the other hand, there should be sufficient data for rather decisive regulatory actions.

9f5

Experimental relaxations have been proposed to the FCC in the past, and the FCC has rejected these proposals

on several grounds; that too many pay systems would be grandfathered by such relaxations, that it would be politically impossible to select pay operations "for special treatment", and that the results would be insufficient for the resources they would require. All of these reasons, however, presuppose that current regulations are well-grounded, and that only relatively cosmetic changes need to be made in the future. If strong revisions may be needed, however, these arguments break down,

9f6

Overall, the FCC stands at a crossroads today. It has created a new addition to the financial structure of television-movie industry, which is now a \$6.4 billion dollar industry including conventional television and movie theaters. Television is now viewed about 6 hours a day<1> by the average household and represents America's dominant source of fiction, entertainment, and national news. While the current value of "free" television, which costs the average household about \$75 per year<1> is indisputable, this only stresses the importance of home-video service to the public. If pay television can substantially change this system of financing, or change it even modestly, the potential benefits of a open competitive regulatory policy to the public interest may

be very large. The FCC should begin to probe the benefits of a full system of television financing instead of simply trying to preserve the current financial system, itself a historical accident, as an unalterable regulatory absolute.

9f7

My Dissertation

RA3Y 4-AUG-75 20:23 33142

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10K

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101

25. ----- "Future Seen Now in Satellite Networking as HBO,
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88, No. 16, p. 16 ff (April 21, 1975).

10m

26. ----- "Pay Cable: Light at the End of the Tunnel for
Teleprompter?" Broadcasting, Vol. 88, No. 20, p. 58 (May
19, 1975).

10n

My Dissertation

RA3Y 4-AUG-75 20:23 33142

(J33142) 4-AUG-75 20:23;;; Title: Author(s): Raymond R. Panko/RA3Y;
Distribution: /GCE([ACTION]) RA3Y([INFO-ONLY]) ;
Sub=Collections: SRI-ARC; Clerk: RA3Y; Origin: < PANKO,
MASTER,NLS;16, >, 3-AUG-75 15:03 RA3Y ;;;; ####;

33142 Distribution

Gwen C. Edwards, Raymond R. Panko,

THE AUDIO-VISUAL PRESENTATION CAN BE SPLIT INTO TWELVE MAJOR SCENES, THE SCENES OR AREAS OF CONCENTRATION CAN BE EXPANDED AS FOLLOWS

1. INTRODUCTION : ASK A NUMBER OF QUESTIONS TO PROMOTE VIEWER'S IDENTIFICATION WITH THE TOPIC AT HAND ---- NAMELY THE ROLE OF COMPUTERS INT THE PROFESSIONAL LIFE OF THE USER,

1a

2. PREAMBLE : BRING IN THE TITLE 'NLS' AND THE MAJOR AREAS OF AUGMENTATION THAT THIS SYSTEM SERVES,

1b

3. NLS EXPLANATION : INDICATE THE BASIS OF NLS , NAMELY THE COMPUTER SYSTEM BEHIND IT AND SOME OF THE HARDWARE,

1c

4. EXAMPLE1: DOCUMENTARY INTERVIEW STYLE EXPANSION OF THE EXAMPLE OF JUST TWO PEOPLE HANDLING THE ENTIRE ARRANGEMENT AND RUNNING OF A CONFERENCE USING THE NLS SYSTEM,

1d

5. UNIQUENESS OF BPG : EMPHASIZE THE UNIQUENESS OF BELL AND BPG AS PARTICIPANTS OF NLS AND FEW OUTWARD SIGNS OF THE NLS PARTICIPATION,

1e

6. EXAMPLE2 : THIS EXAMPLE ILLUSTRATES THE INTERPERSONAL ASPECT OF THE NLS SYSTEM - NAMELY SPATIALLY DISPERSED PEOPLE CAPABLE OF WORKING TOGETHER - HOPEFULLY A REVENUE OR A POLICY QUESTION EXAMPLE, ALSO INTER ACTION OF THE AUDIO PORTION OF THE TELEPHONE SYSTEM WITH THE NLS CAPABILITIES HELPING CLOSE INTERACTION,

1f

7. RECAP : MAJOR AREAS OF APPLICATION FOR NLS ARE REPEATED AND SING THE PRAISE OF THE SYSTEM IN GENERAL (ALL THE GOOD THINGS THAT IT DOES TO HELP THE PROFESSIONAL),

1g

8. EXAMPLE3 : A SAMPLE OF THE TYPE OF USE THAT A MANAGER UNDER PRESSURE MIGHT PUT THE SYSTEM TO -- SYSTEM CAPABILITIES THAT HELP A MANAGER MEET AN IMPOSSIBLE DEADLINE, DRAMA IN ONE ACT!

1h

9. CONTINUATION OF 8 : THE PROCESS OF GENERATING THE REPORT, ILLUSTRATE THE TEXT EDITING CAPABILITIES - VISUALLY. 11
10. SET OF EXAMPLES : THESE ARE EXAMPLES THAT WILL MAKE THE VIEWER WANT TO USE THE SYSTEM - NAMELY THOSE HE CAN IDENTIFY WITH, EG. PERSONAL CALENDAR FOR APPOINTMENTS, PERSONAL PERT CHART FOR WORK LOAD, MESSAGE SYSTEM, CONTENT ANALYZER GOODIES ETC. -- ARRANGED IN INCREASING ORDER OF COMPLEXITY AND INTEREST AND ILLUSTRATED WITH THE DYNAMIC SCREEN DISPLAY. 1j
11. BPG'S USAGE : USAGE STATISTICS AND THE FACT THAT CLERICAL STAFF ARE VERY HEAVY USERS OF THE SYSTEM. PLAY UP THE HUMAN ANGLE AND GET THE FEELING OF CLOSE INTERACTION WITH THE SYSTEM ACROSS. 1k
12. WRAP UP : SING THE GLORIES AGAIN AND PAINT THE PICTURE OF THE FUTURE TO LEAVE THE PRESENTATION ON AN UPNOTE 11

BASIC SCENARIOS FOR THE NLS AUDIOVISUAL

(J33143) 4-AUG-75 21:25;;; Title: Author(s): Anand Kumar/AK2;
Distribution: /LHD([ACTION]) MIKE([INFO-ONLY]) GCE([INFO-ONLY
]) ; Sub-Collections: NIC; Clerk: AK2; Origin: < KUMAR,
AV1,NLS;3, >, 4-AUG-75 21:05 AK2 ;;;;####;

33143 Distribution

Lawrence H. Day, Michael T. Bedford, Gwen C. Edwards,

Response to JAC3's user feedback about move statement, 26230

Everyone agrees with you. It has been suggested to feedback many times. However, since ARC has no precedues for making FEEDBACK anything other than a dead end (all implementation decisions come from the top down and no resources are allocated for "sharpening our own tools"), the many, many unfeatures in NLS remain and will continue to baffle new users and alienate people who may be interested in using NLS.

1

KIRK 4-AUG-75 22:05 33144

Response to JAC3's user feedback about move statement, 26230

(J33144) 4-AUG-75 22:05;;; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /SRI=ARC([INFO=ONLY]) FEEDBACK([INFO=ONLY]) ;
Sub=Collections: SRI=ARC FEEDBACK; Clerk: KIRK;

33144 Distribution

Douglas C. Engelbart, Martin E. Hardy, J. D. Hopper, Charles H. Irby, Harvey G. Lehtman, James C. Norton, Jeffrey C. Peters, Dirk H. Van Nouhuys, Kenneth E. (Ken) Victor, Richard W. Watson, Don I. Andrews, Special Jhb Feedback, Mary Ann Kellan, Buddie J. Pine, Andy Poggio, David L. Retz, Laura J. Metzger, Carolyn J. Martin, Jan A. Cornish, Larry L. Garlick, Priscilla A. Wold, Pamela K. Allen, Delorse M. Brooks, Beverly Boli, Rita Hysmith, Log Augmentation, Joseph L. Ehardt, Raymond R. Panko, Susan Gail Roetter, Robert Louis Belleville, Rene C. Ochoa, Ann Weinberg, Joan Hamilton, Adrian C. McGinnis, Robert S. Ratner, David S. Maynard, Robert N. Lieberman, Sandy L. Johnson, James H. Bair, Jeanne M. Leavitt, Rodney A. Bondurant, Jeanne M. Beck, Marcia L. Keeney, Elizabeth K. Michael, Jonathan B. Postel, Elizabeth J. Feinler, Kirk E. Kelley, N. Dean Meyer, James E. (Jim) White

evolution

Entertainment on Demand	1
Abbreviated Service Description	1a
This service would permit users to select any of a number of different entertainment programs for immediate viewing, it would not be necessary to wait for a scheduled network performance.	1a1
Education on Demand	2
Abbreviated Service Description	2a
Users would be able to request educational material for immediate viewing in the home. Subject material would be quite far-ranging, and question-and-answer formats would be available.	2a1
Household Information Service	3
Abbreviated Service Description	3a
General household information, usually available elsewhere but with less convenience, would be available to users on a "demand" basis.	3a1
Dedicated News Service	4
Abbreviated Service Description	4a
Users would be able to tailor their news reports to include only the news subjects and level of detail they desired. The reports would be available on a "demand" basis.	4a1
Shopping and Purchasing From the Home	5
Abbreviated Service Description	5a
Householders would be able to compare different items from different stores and make purchases, without leaving home.	5a1
Remote Banking	6
Abbreviated Service Description	6a
All normal banking functions could be conducted remotely, with the use of a home terminal device and authorization code of some sort to provide security.	6a1

evolution

Remote Work Center	7
Abbreviated Service Description	7a
New communications services would permit many office workers to work from their homes. Community Work Centers are discussed in this second questionnaire,	7a1
Remote Medical Diagnosis	8
Abbreviated Service Description	8a
Doctors (or para-medics) would be able to screen and diagnose patients without requiring the patients to come to their offices. The more serious or questionable patients would come to the office for a face-to-face visit,	8a1
Remote Political Participation	9
Abbreviated Service Description	9a
Citizens would be able to send messages to representatives, sit in on legislative meetings, participate in "town hall" type forums, and vote on referenda, all without leaving home,	9a1
Home Surveillance Systems	10
Abbreviated Service Description	10a
A system of alarms in the home that would notify proper community emergency authority in the event of fires intrusion, accidents, etc,	10a1

evolution

LN 5-AUG-75 08:22 33145

(J33145) 5-AUG-75 08:22;;; Title: Author(s): Lina Nardi/LN;
Distribution: /MIKE([ACTION]) MIKE([INFO-ONLY]) ;
Sub=Collections: NIC; Clerk: LN;

33145 Distribution

Michael T. Bedford, Michael T. Bedford,

description

Entertainment on Demand	1
Abbreviated Service Description	1a
This service would permit users to select any of a number of different entertainment programs for immediate viewing, it would not be necessary to wait for a scheduled network performance,	1a1
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Abbreviated Service Description	2a
Users would be able to request educational material for immediate viewing in the home. Subject material would be quite far-ranging, and question-and-answer formats would be available,	2a1
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Abbreviated Service Description	3a
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Abbreviated Service Description	4a
Users would be able to tailor their news reports to include only the news subjects and level of detail they desired. The reports would be available on a "demand" basis,	4a1
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Abbreviated Service Description	5a
Householders would be able to compare different items from different stores and make purchases, without leaving home,	5a1
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Abbreviated Service Description	9a
Citizens would be able to send messages to representatives, sit in on legislative meetings, participate in "town hall" type forums, and vote on referenda, all without leaving home.	9a1
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Abbreviated Service Description	10a
A system of alarms in the home that would notify proper community emergency authority in the event of fires intrusion, accidents, etc.	10a1

description

LN 5-AUG-75 08:23 33146

(J33146) 5-AUG-75 08:23;;; Title: Author(s): Lina Nardi/LN;
Distribution: /MIKE([ACTION]) MIKE([INFO-ONLY]) ;
Sub=Collections: NIC; Clerk: LN;

33146 Distribution

Michael T. Bedford, Michael T. Bedford,

Direps

CFP 5-AUG-75 08:33 33147

Read any good Direps lately?

1

Direps

(J33147) 5-AUG-75 08:33;;; Title: Author(s): Cynthia F.
Pattillo/CFP; Distribution: /JLC([ACTION]) JVW([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: CFP;

33147 Distribution

Johnny L. Crabtree, Josephine V. Wagner,

Possible glitch in Publish Subsystem

I have been using this file while exploring the mysteries of some of the subsystems. I a couple of attempts on the IMLAC and Another couple on the Terminet 300 I got some strange results. Usualy I get long null strings interspersed with other wierdies. This is the best TOC I've gotten.

Table of Contents	1
our score and seven years ago our forefathers ...P.....2	1a
the quick brown fox jumped over the lazy dogs 3	1b
(file)ick brown fox jumped over the lazy dogs.....4	1c
(publish) brown fox jumped over the lazy.....5	1d
(format)) brown fox jumped over the.....6	1e
(modify)) brown fox jumped over.....7	1f
our score and seven years ago our forefathers	2
the quick brown fox jumped over the lazy dog	3
(file)	4
(MJOURNAL, 31075, 1:w)	4a
(HJOURNAL, 32571, 1:w)	4b
(HJOURNAL, 32789, 1:w)	4c
(publish)	5
count (visibles)	5a
generate references	5b
index	5c
generate table of contents	5d
(format)	6
set directive	6a
(modify)	7
delete visible	7a
delete leading spaces	7b
delete names	7c

EJK 6-AUG-75 08:33 33150

Possible glitch in Publish Subsystem

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Kennedy/EJK; Distribution: /FEED([ACTION]) DLS([INFO-ONLY]) ;
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33150 Distribution

Special Jhb Feedback, Duane L. Stone,

1

move branch a: sid of answer (to follow) a: 0 or 1 "date time (of
question)",dt level:d

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(J33151) 6-AUG-75 10:23;;; Title: Author(s): Special Jhb
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3-JUL-75 09:50 FEED ;;;;####;

WEC 6-AUG-75 12:05 33153

Management Summary of NSW Project

This document is attached to all Memorandums requesting an ARPA Order for the NSW project, substantially reducing my paper work load.

WEC 6-AUG-75 12:05 33153

Management Summary of NSW Project

NATIONAL SOFTWARE WORKS MANAGEMENT SUMMARY

2

1 AUGUST 1975

3

4

5

ARPA and the Air Force are jointly developing the National Software Works (NSW) to demonstrate a new approach to making software development and maintenance tools available to all DoD personnel and contractors. A large number of tools which aid in the design, implementation, validation, documentation, and maintenance of computer software already exist, but these aids are available on only a few computers and are used on a small percentage of DoD projects. The problems encountered in the distribution of these aids suggest that a new mechanism to make existing software tools available in a uniform manner to DoD can have at least as great an impact on the cost, reliability, and time to implement DoD software as can new and even more sophisticated aids. Thus, the concern of the NSW is the

development of this delivery mechanism rather than the development of the tools themselves. Necessary complements to the software tools are automated access control and management strategies, and these must be incorporated into the delivery mechanism. The consequences of this viewpoint can be characterized as follows:

6

- Software development and maintenance will take place in the software world's equivalent of a factory. The factory is to contain "tools" which aid programmers and managers. Despite the term "factory", no buildings are to be constructed, and for the most part existing computer facilities can be used.

6a

- A large fraction of the software development and maintenance tools will be machine independent. That does not mean that tools (which are themselves computer programs) can run on arbitrarily chosen computers. Machine independence is meant to imply that computer specialists building software for many different kinds of computers can share a single version of a tool. Examples of capabilities which can be shared include text editors, the filing

system, bookkeeping operations, project management tools, program test data generators, and documentation aids.

6b

- Compilers and other execution dependent development and maintenance tools will be provided separately for each target machine (machine on which the software which is being written will run).

6c

- The tools will be embedded in a resource-sharing framework which minimizes the user's awareness of the fact that resources are scattered over many hosts. Thus, the programmer requests resources in a uniform way, without having to learn the idiosyncrasies of different host operating systems or log-in procedures. The manager can contract for services with the NSW, without having to negotiate accounts on each host.

6d

- A central design criterion for the framework is that it minimize the difficulties of appending new tools and new resource-bearing hosts to the set of facilities in the NSW.

6e

Management Summary of NSW Project

- The framework will provide the project manager with much tighter controls over his project than are currently in use. There will be unified and consistent mechanisms for access and accounting control of resources, where the resources include tools and files on several dissimilar hosts. The control mechanisms will support sophisticated tools for the specification and implementation of management policies of project control. These policies typically will specify who may access and/or change which modules, what crosschecks must be carried out whenever a module is changed, and what consequent actions are required for each change.

6f

Planning for the NSW began in the Summer of 1973, with development starting a year later in July 1974. The initial version of the National Software Works is being implemented on the ARPANET. As capabilities become available, they will be tested by the Air Force Data Systems Design Center (AFDSDC) at Gunter AFS, Alabama and by the Air Force Data Services Center (AFDSC) in the Pentagon. Software for the Burroughs B3500, which is the standard Air Force base level

Management Summary of NSW Project

computer, is developed at Gunter and distributed to over 130 Air Force installations throughout the world. An important goal is to demonstrate the NSW's effectiveness in supporting the development of software to run on the B3500.

7

The heart of the NSW system is a program called the Works Manager, which is a family of procedures designed to provide a unified and consistent mechanism for access control and accounting. The Works Manager has as its central data base a catalogue of resources. The information this catalogue contains about tools, users, and files is believed to be sufficiently general to represent extremely sophisticated strategies of management control and accounting, involving quite complex rules of access control and sophisticated strategies of funds commitment and expenditure restriction,

8

Users will access the NSW through a hardware/software system called the Front-End, which provides a consistent interface to software development and maintenance tools running on a variety of dissimilar computers. The Front-End will standardize the control characters the

Management Summary of NSW Project

user must type to interrupt an activity, initiate a command, erase a character or word, etc. The Front-End will also allow a wide variety of different kinds of terminals to be used with the NSW. Device dependent code will be isolated in the Front-End, so the remainder of the NSW can assume that terminals obey the conventions of a small number of device classes.

9

It has been hypothesized that the Front-End can control almost all user interactions with NSW tools, using tables which define tool command languages. The NSW can operate with a less intelligent Front-End, but tighter standards for the user interfaces of interactive tools can be enforced if they share a common command interpreter. A prototype Front-End which offers generalized command interpretation is being constructed, and the production version of the Front-End will offer this service if the prototype is found to be sufficiently robust to support most if not all manners of dialogue between users and tools, and if the operating costs are not excessive.

In order for the Works Manager to control resources in the collection

10

Management Summary of NSW Project

of dissimilar computers where software tools will run, a set of standard software functions must be implemented in each of those computers. The functions will be invoked by the Works Manager using standard communications protocols. Functional requirements for this software to be implemented in each Tool-Bearing Host have been defined, and a first attempt at specifying the software and communications protocols in detail has been made. Initial Tool-Bearing Hosts will be TENEX, MULTICS, an IBM 360/91, and a Burroughs B4700 connected through a Network Connection Subsystem. As these implementations proceed, the specifications will be reviewed and revised in ways which simplify implementation but still satisfy the functional requirements for the Works Manager to control resources throughout the NSW.

11

During the eighteen months, July 1975 to December 1976, the initial NSW system will be completed and evaluated, and the feasibility of expanding the system and operating it cost-effectively for production applications will be determined. The experiments will provide the NSW

Management Summary of NSW Project

Steering Committee with the information it needs to project usage requirements. An analysis of the cost/performance tradeoffs in building a scaled, hardened, optimized version of the NSW will be conducted. A detailed design will be prepared for a system which represents a reasonable compromise between performance and cost in satisfying projected usage requirements.

12

Management Summary of NSW Project

(J33153) 6-AUG-75 12:05;;; Title: Author(s): William E.
Carlson/WEC; Distribution: /LAC([ACTION]) DLS([ACTION]) MAW([ACTION]) CSH([ACTION]) WEC([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: WEC; Origin: < CARLSON, MAN-SUM,NLS;2, >, 4-AUG-75
18:31 WEC ;;;;###;

33153 distribution

Lawrence A. Crain, Duane L. Stone, Mike A. Wingfield, Chloe S. Holg,
William E. Carlson,

Benchmark (Stopwatch) Stats before the Big Slicer

(benchmarks) Benchmarks
 <Ra3y,benchmarks:Dxbbgz>

DATE	LOAD	TIME	ET	CPU	PCT,	
13-JUN-75	1,44	16:44	89	31262	34%	1a
17-JUN-75	6,00	08:44	275	34522	12%	1b
18-JUN-75	6,00	08:57	299	32899	11%	1c
18-JUN-75	3,99	10:00	80	28656	35%	1d
18-JUN-75	3,99	13:52	163	32667	20%	1e
20-JUN-75	8,51	08:21	408	32871	8%	1f
20-JUN-75	6,00	13:08	305	33121	10%	1g
21-JUN-75	1,40	17:04	83	31625	38%	1h
23-JUN-75	8,03	08:03	340	33116	9%	1i

RA3Y 6-AUG-75 13:15 33154

Benchmark (Stopwatch) Stats before the Big Slicer

(J33154) 6-AUG-75 13:15;;; Title: Author(s): Raymond R.
Panko/RA3Y; Distribution: /KLM([ACTION]) RA3Y([INFO-ONLY]) ;
Sub=Collections: SRI=ARC; Clerk: RA3Y;

33154 Distribution

Kathey L. Mabrey, Raymond R. Panko,

Implementation Group Working Papers

FGB 6-AUG-75 14:13 33155

Please acknowledge receipt of this message. Thanks.

Implementation Group Working Papers

Implementers,

As we start out on the "Elvish" road, there are any number of implementation issues which must be addressed over the coming months. You are probably well aware that the road is a potentially bumpy one. Hopefully, we can, as a group, at least identify the potential problems and generate an awareness that will be needed to smooth the transition from individual computer sites to ARPANET Host computers.

I have roughly categorized the near term issues which concern me (and you may wish to add more) as follows:

Design

Under this category, I have in mind such issues as current and projected protocols (network, host-front end, etc.), Elvish enhancements, the orderly development of capabilities (FTP, RJE,...) in light of host software changes (ranging from none to extensive), and so on.

Development

In this category, I put the actual software development required in terms of Host-Front End protocols, FTP, RJE,..., and support software (e.g., debuggers, loaders). In particular, we have to address the question of what exists or is coming that we can adapt to our needs (and the corollary, can we influence on-going developments?).

Mechanics

By this I mean choosing and using the tools that exist (e.g., cross assemblers, loaders, debuggers) to get a job done. This category brings in such topics as: ARPANET familiarization, PDP-10 familiarization, acquiring needed hardware (e.g., terminals, medium speed printers) familiarization with existing software, etc.

I hope to start a series of working papers dealing with topics of interest to us all and would like to see everyone involved in these. The first amplifies the general issues described above. Your comments are solicited.

Regards,

Frank

Implementation Group Working Papers

FGB 6-AUG-75 14:13 33155

(J33155) 6-AUG-75 14:13;;; Title: Author(s): Frank G. Brignoli/FGB;
Distribution: /NAVIMP([ACTION]); Sub-Collections: NIC NAVIMP;
Clerk: FGB;

33155 Distribution

John C. McGilvary, James Peterson Shores, I. Larry Avrunin, Frank G. Brignoli, Edward Lewis Aiken, George Egeland, John J. Zenor, Robert D. Archer, Paul C. Bishop, J. Gregory Noel, Eugene P. Stemple, Robert A. Unger, Connie Heitmeyer,

(bev) glossary.nls;4 was ftped to isi on the tape 123 mta0 on 8-6-75
for kp5's. Pam

(J33156) 6-AUG-75 15:00;;; Title: Author(s): Special Jhb
Feedback/FEED; Distribution: /DMB([ACTION] dpcs notebook please)
&DPCS([INFO=ONLY]) ; Sub-Collections: SRI=ARC DPCS; Clerk: FEED;

33156 Distribution

Delorse M. Brooks, Documentation Production and Control System
Interest Group ,

interim status report, ARC support of Gunter documentation and
AFM66-1

Ann Weinberg, Susan Roetter, and Priscilla Wold have now been at Gunter for three days assisting us in our Documentation efforts using NLS. We have also been receiving excellent background support from Elizabeth Michaels, Joe Ehardt, and Dave Retz back at SRI. Their efforts have been nothing short of extraordinary, and it is due to their enthusiasm and skill that the AFM 66-1 rewrite effort, which was shaping up as a potential disaster, now promises to be an important demonstration of the kind of capability which the Air force is participating in NSW to make available.

1

Until this week, we had been preparing for this effort with the understanding that personnel to support the rewrite would be drawn from the ranks of already trained NLS users within the Pentagon and/or from Gunter. However, Monday morning, the decision was finally made by LG that the effort would be supported by personnel who had had essentially no prior training in the use of NLS. Thus, in addition to the training of PR, SC and SY personnel already scheduled to be trained this week, it was necessary to set up crash training for these critical LG users. Also, it was recognized that to effectively support this task, it would be desirable to bring our ELF up to speed as soon as possible.

2

It was acknowledged by all involved that the importance of supporting this effort was immense. The Air Force personnel participating in this rewrite are among the top maintenance people the Air Force has to offer. They have been brought to Gunter not only from the Air Staff, but from all over the world, at great expense, to participate in this effort. If we can provide them with the kind of support that NLS is capable of giving, it will provide the kind of practical demonstration of ARPANET/NSW technology which will make "believers" not only within the Center but in key positions within the Air Staff and the Field.

3

Faced with the problem that this effort presented, SRI personnel have provided us with a level of support which goes beyond the 'line of duty'. Priscilla and Susan have expanded their training schedule to take in the new users. Ann, meanwhile, has been active nailing down loose ends and resolving technical problems, such as final format specifications, arranging for a special directory for the projects use, etc. Recognizing that the new users would not be ready during the early part of the week to support the editing, all three willingly pitched in to do the first batch of changes themselves, after normal working hours. It took from 4pm Tuesday till nearly 11pm, but this morning we presented the rewrite group with a working copy of the document including every change the 25-odd people had requested made the previous day, as well as working copies of several other volumes of the document they were interested in. In all, this amounted to nearly a full box of 3-part computer paper. This provided

interim status report, ARC support of Gunter documentation and
AFM66-1

a dramatic demonstration of the power of the NLS system in the hands of skilled personnel, Susan and Priscilla have continued to help and coach the LG users today, and the reactions to the support we have been giving the working group have been enthusiastic and appreciative.

4

Meanwhile, Joe, Elizabeth, and Dave have been providing critical background support, Elizabeth has provided a system to improve the "editability" of the working copy we are providing the rewrite group, Joe and Dave have worked long and hard to generate and help us load and debug a new ELF to include improved print capabilities and Dial-up circuits, We encountered some problems in our attempt to bring up the new release today, but Dave feels he has isolated the difficulty, and is working tonight to make a fix so we can make another attempt tomorrow.

5

The professional, enthusiastic efforts of these key ARC personnel have been of immense value and continue to be important in supporting this highly visible demonstration of NSW-Funded technology in support of critical Air Force operational work.

6

interim status report, ARC support of Gunter documentation and
AFM66-1

(J33157) 6-AUG-75 22:23;;; Title: Author(s): Lawrence A. Crain/LAC;
Distribution: /WEC([ACTION]) AAB([ACTION]) MAW([ACTION])
RWW([ACTION]) JCN([ACTION]) PAW2([INFO-ONLY]) EKM([
INFO-ONLY]) POOH([INFO-ONLY]) SGR([INFO-ONLY]) JLE([
INFO-ONLY]) DLR([INFO-ONLY]) ; Sub=Collections: NIC; Clerk: LAC;

got your message

ILA 7-AUG-75 04:46 33158

Hi Frank;
I got your message

1

ILA 7-AUG-75 04:46 33158

got your message

(J33158) 7-AUG-75 04:46;;; Title: Author(s): I. Larry Avrunin/ILA;
Distribution: /FGB([ACTION]) ; Sub=Collections: NIC; Clerk: ILA;

implementation group working papers

acknowledge receipt of your message 6 aug 75,
thanks, bob a

1

implementation group working papers

RDA 7-AUG-75 05:13 33159

(J33159) 7-AUG-75 05:13;;; Title: Author(s): Robert D. Archer/RDA;
Distribution: /FGB([ACTION]) FGB([INFO-ONLY]) ; Sub=Collections:
NIC; Clerk: RDA;

nls seminar

please send a copy of the seminar outline as soon as possible to
robert d. archer; naval surface weapon center; white oak; silver
spring, maryland 20910, thanks,
bob archer

1

nls seminar

(J33160) 7-AUG-75 05:20;;; Title: Author(s): Robert D. Archer/RDA;
Distribution: /RLL([ACTION]) JHB([ACTION]) RLL([INFO-ONLY])
JHB([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: RDA;

Status of Sendmail Commands

I am trying to write a preproposal for updating the Journal system,
 Can anybody in your shop tell me if the following commands are
 implemented: Expedite, Obsolete, Update, Subcollections, Unrecorded?
 Merci,

1

Status of Sendmail Commands

RA3Y 7-AUG-75 07:21 33161

(J33161) 7-AUG-75 07:21;;; Title: Author(s): Raymond R.
Panko/RA3Y; Distribution: /RWW([ACTION]) ; Sub=Collections:
SRI-ARC; Clerk: RA3Y;

Userservices Weekly Report for week of July 28-August 1

USER SERVICES WEEKLY REPORT for Week of July 28 - Aug 1:

from JMB

Worked on figuring out DEX and revising the DEX Primer for the Termicette with special attention to ease of training and learning. Not all sections of the document are in their final form (e.g. clusters, hardware editing) but the idea was to finish what POOH, SGR, & PAW would need in Alabama. Also, there may be some changes in DEX that will require changes in the document. As of the end of the week, PKA is working on the document.

Began to study the documentation of MSG in preparation for teaching it to AMC people, and began to try the commands. Talked with SGR about how to teach it and about how to teach TENEX to them. The SRI-ARC TENEX Users Guide was found to need some revision; LJM will do that.

Gave a 2-hr Short Session in TNLS to users of the SRI slot here on Tuesday afternoon. This one covered a multitude of things. I hope to get a course report out on that training sometime.

Discussed and studied the Sort and Retrieve usersubsystems; SGR and I thought about eventually programming some useful applications in that area that are needed around the community.

from SGR

Caught up on some reading in Word Processing World and passed around articles of possible interest. Read documentation on retrieve and sort and discussed these with other US people. Tuesday took a day of "Comp" time.

Most of the rest of the week has been spent getting ready for Gunter one way or the other. Talk with Ann, Jim N, and Elizabeth about the latest upsets, trying dex and getting with Jeanne on improving the documentation we will use in Gunter, finalizing viewgraphs with Priscilla and talk about how will split the training while there.

Also the AMC people have requested training next week on MSG and so there has been some work figuring out what to do about that, getting documentation and working with Pam a bit to clean up the documentation for our use then. This training will be in St. Louis and maybe some other remote (from Wash.) place.

from RH

Userservices Weekly Report for week of July 28-August 1

Spent the first two days of the week at the Pentagon with JCN, JHB and POOH meeting with various people and users of the ARPA NSW slot. Spent the remainder of the week at ARPA making some appointments for training for this week. I was on the phone with Betty Finney, they received their part for their printer and they wanted to know how to use a printer. Met with Carlson regarding problems with the MRAO's. The spacing was not consistent throughout which I'm in the process of repairing. Another thing that will have to be done with the MRAO's is to turn level-indenting off. The reason for this is that all top-level statements disappear when you turn statement names off leaving all the statements that succeed it naturally at a lower level; so when you print you have a wide left margin which Carlson doesn't want. We are having another personnel change here at ARPA. Ginny Gross of PM is moving down to MATS so the other girl Kay is going to need training in NLS so that she can do the ARPA Orders, etc. This won't take place though until September. Key Data is also having a personnel change, Diana is moving to Massachusetts the end of this month.

1c1

from PKA

1d

Monday--Read about Retrieve and sort. Worked on June statistics. Read articles that Susan pointed out in Word Processor World.
 Tuesday --spent almost all day trying to use DEX and finding out what does and does not work. Jeanne Leavitt helped.
 Wednesday--Read documentation on line processors, such as the line processors users guide and Martin's papers. Caught up on past-due weekly reports. Worked on DEX.

1d1

Thursday--Made final revisions on June feedback file and statistics. Tried DEX for about an hour just for practice. Read MSG document.
 Friday--Worked on MSG document, changing it into an NLS file. Edited DEX document that will be taken to Gunter next week. Journalized June feedback file and statistics.

1d2

from PAW2

1e

Spent week working on viewgraphs trying to get them ready for our trip to Gunter. Received the rough drafts and went over new revisions with the artist. Spent a few sessions working on DEX on our Termicette using our old documentation, which has now been revised. We decided to use the sample sessions produced by documentation for the courses at Gunter, so not really having looked through them before, I decided to spend some time looking through them to see the actual step by step process involved in each one. Went through my copies of the

Userservices Weekly Report for week of July 28-August 1

Basic, Second, and Third Courses to correlate the viewgrphs
with the course material to prepare for the classes at Gunter,
Left Thursday night for the East Coast,

1e1

Blank form

2

USER SERVICES WEEKLY REPORT for Week of XXX:

2a

from JMB

2a1

from SGR

2a2

from RH

2a3

from PKA

2a4

from PAW2

2a5

Blank form

3

USER SERVICES WEEKLY REPORT for Week of XXX:

3a

from JMB

3a1

from SGR

3a2

from RH

3a3

from PKA

3a4

from PAW2

3a5

Userservices Weekly Report for week of July 28-August 1

(J33162) 7-AUG-75 09:59;;; Title: Author(s): Priscilla A.
Wold/PAW2; distribution: /SGR([INFO-ONLY]) US([INFO-ONLY]) JCN(
[INFO-ONLY]) ; Sub-Collections: SRI-ARC US; Clerk: PAW2;
Origin: < ROETTER, USREPORT,NLS;21, >, 7-AUG-75 09:53 PAW2 ;;;; #####

33162 Distribution

Susan Gail Roetter, Susan Gail Roetter, Priscilla A. Wold, Jeanne M. Beck, Pamela K. Allen, Rita Hysmith, Sandy L. Johnson, James C. Norton,

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help'])..sandy

If I mistakenly do a ^Z or ^O followed by a character which doesn't occur in the remainder of the statement, I quite properly get a '?' (actually, a Bell would be better), but then: If I type <CA>, the remainder of the statement VANISHES! On the other hand, if I type ^Q, the statement is preserved all right, but I have to work my way back out of the Help system, which is invoked, as usual, by that character,

1

I did the Insert Status form command after specifying all my sendmail commands because I wanted to modify my distribution list, I edited it via The Execute Base Insert Text command. Then I did the Process command, as Help advises; Show Status showed the corrected stuff, BUT all that the Send (the mail) command gets me is "fst entry nonexistent"!! I even tried specifying the source again, but still Send fails, with that message. I then tried initializing Sendmail and sending all the damn stuff over again; still Send command still gets me "fst entry nonexistent"! What do I do now (except try again during a different session)? This wasted a lot of time.

2

Escaping from Help by ^X now works fine (or have I already reported that. But I can still get "Data Base portrayal trouble, Call ARC!" --- that is, I just did (Wed 2 Apr 75, 1645EDT), Here is a blow-by-blow:

3

```
In BASE C: Help statementname
After STATEMENTNAME, menu item 1 -->
Name=delimiters, then item 1 -->
Set Name (delimiters) command, then item 1 -->
TNLS example; then ^, back to -->
Set Name ^,; then ^O, then item 2 -->
effects; / name=delimiters; ; after which, - takes me -->
Set Name ^, (again); then ^O, then ^, whence -->
    "effects" -- NO -->
    "TNLS example:" -- NO -->
    "Set Name ^,;" -- NO -->
    "name=delimiters" -- NO -->
    "STATEMENTNAME" -- YES -->
STATEMENTNAME (prints menu only, good), item 2 -->
searching, then item 1 -->
The Jump (to) Name Commands; then item 2 -->
Any: Jump ^,; ; then item 1 -->
TNLS example; then ^, whence -->
    "Any: Jump ^,;" -- NO -->
    "the Jump (to) Name" -- YES -->
The Jump ^,; ; then ^O, then item 3 -->
First: Jump (to) Name first CONTENT VIEWSPECS OK:
```

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help'])...sandy

..... and after typing that line, two blank lines and:
 "Data base portrayal trouble. Call ARC!"

Whilst using DNLS with Susan helping me, I was trying all those commands which the HELP system said were DNLS-only, However the Set Character size and Reset Character size commands caused the loss of the display in the window and at one instance caused the changing of viewspecs to zero levels. Thus it appears these commands are no longer supported with Line Processors? If so it would be useful to have that information displayed on execution of the command - or at least in the HELP system output,

*****Note: [ACTION] *****

Also is something going to be done about the fact that the HELP file is not in documentation, but is in arc-documentation? The code which loads the file should be changed to point to the right directory.

Although the mail has arrived, the print journal command doesn't seem to know about it. There seems to be some confusion about naming conventions. Help,

(BUGS) To be fixed by Office-1 Software (JDH), RESPONSE BY
 FEEDBACK--bugs marked as First, second, or third level items for
 attention;

31-JUL-75 1216=PDT%r(bug) LEHTMAN at USC-ISIC: Link in
 Userguides to Journal Catalogs

Distribution: PETERS AT OFFICE-1, feedback at office-1
 Received at: 31-JUL-75 12:15:22=PDT%r(bug)

The more recent ones seem to have the wrong names. JAN75 are
 smae as JUL74; jul75 is what jan 75 should be. Real jul75 not
 listed.

30-JUL-75 1626=PdT MEYER: BUG: Temporary Modifications

Distribution: FEEDBACK, meyer
 Received at: 30-JUL-75 16:26:40=PDT

We will need Temporary Modifications capabilities for the RADIC
 Financial Management System. I tried it on a journal file.
 Having Set Temporary modification for file, I could freely edit
 the file.

However, when I Reset Temporary modifications, I got the
 message "this file not locked" The changes still appeared on
 the screen, even after a viewspec "F". If I reloaded the file,
 it was restored to its original state. An attempt to edit the
 file gave the error message "File locking conflict..." then

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help']...sandy

"fst entry nonexistent". The partial copy remained in my directory. We hope to make use of temporary modifications beginning about september, --Dean

8b1

25-JUL-75 1154=P&r(bug) DVN: More on Loop to Marker
Distribution: DVN JDH FEEDBACK
Received at: 25-JUL-75 16:29
Location: (JOURNAL, JRNL28, J26189:gw)

8c

Message:

8c1

The morning three times in a row I came into NLS and jump to item giving as an address #a, in my initial file, and went into a loop. The running numbers were as follows: First time: 64072, 66732, 66707, 64065, 66722, 64073, 31630, 31627, 67206, 66726. Second time: 31636, 31627, 31746, 66727, . Third time: 64065, 31026, 67155, 316214.

8c1a

24-JUL-75 0828=PDT&r(bug) HYSMITH: Edit Statement
Distribution: FEEDBACK, ROETTER, hysmith
Received at: 24-JUL-75 08:28:57=PDT&r(bug)

8d

I have been experimenting with the edit statement command this morning. It is pretty straightforward and simple...I think I have it down pretty good now with a crib sheet; however I have noticed two problems with it,

8d1

You are supposed to hit a CTRL-Q to void all prior edits made on the particular statement you are working on..well naturally if you hit Ctrl-Q you go into help. So being very quick I naturally typed a Ctrl-V first and then a Ctrl-Q and I still went into help.

8d2

The other problem is getting the command to repeat itself...it would not take a CTRL-B so I ended up repeating the command everytime I wanted to make edits,

8d3

That's it.

8d4

Rita,

8d5

24-JUL-75 1002=PDT MEYER: Problem
Distribution: FEEDBACK
Received at: 24-JUL-75 10:02:13=PDT

8e

Sometimes I get in a state where the ONLY thing that will refresh my display is a viewspec "F". This time triggered by an error in a user program which gave me the message "fst entry

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

nonexistent". The only fix is to reset. Wish I could remember
 other (more normal) activities which trigger this state,...
 --Dean

8e1

23-JUL-75 1526-EDT DBROOKS at BBN-TENEXB: BUG: force case
 Distribution: FEEDBACK AT OFFICE-1
 Received at: 23-JUL-75 12:23:12-PDT

8f

After a Force Character command, slash (/) gives the error
 message "illegal string designation" (running nls at bbnb),
 --Dean

8f1

21-JUL-75 1011-PDT MEYER: BUG: recreate display
 Distribution: FEEDBACK
 Received at: 21-JUL-75 10:11:35-PDT

8g

Viewspect "y" on. Append two consecutive statement. What
 should be blank line after new combined statement is not
 blanked out. Last line of new statement duplicated on blank
 line. This is an example of a problem with blank lines that
 affects a number of commands,

8g1

19-JUL-75 1549-P RLL: bug: cml/110 control structure flow for
 DNLS and TNLS,
 Distribution: RLL FEED NDM KIRK JCN JHB JDH
 Received at: 20-JUL-75 05:34
 Location: (JOURNAL, JRNL28, J26156:qW)

8h

Message:

8h1

I had sme problems with debugging my cml/110 fo table subsys
 (the sort for table). It suddenly revealed itself. when i
 was at home using TNLS I got 'not implemented' after i
 spcified an addresss and before it asked for my finally OK
 (my program executes after the finally OK). Well, Today I
 am at the Office and tried it on the DNLS, AHHHHH, I got the
 not imolmented message after the finally OK. Indeed I found
 the bug quickly then. Clearly the flow of control for TNLS
 and DNLS is different. This is very bad for debugging. At
 the very least please specify the reason in documents if it
 cannot be fixed. thanks Rob

8h1a

17-JUL-75 2017-PDT BAIR: Cannot delete margin edge or any edge!
 Distribution: FEEDBACK, bair
 Received at: 17-JUL-75 20:17:55-PDT

8i

Hmmm, I really did try delete edge every place I could find on
 the screen. All I got was "Cannot Delete margin edge" and a

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'help']),.,sandy

single character width column on the right and an inch wide
window on the left. Quitting and continuing didn't help.
Thanks, Jim

811

7-JUL-75 1450-P&r JMB: "NLS system error" again and again
Distribution: JMB FEEDBACK
Received at: 7-JUL-75 16:06
Location: (JOURNAL, JRNL27, J32916:gw)

8j

Message:

8j1

That error message got me again; the first time this session
that I tried to delete a branch in my initial file. I have
told D. Hopper about this before; he said to reset and go
into NLS again immediately, which I did. Then the delete
worked. But this error is happening to me nearly every day
now. My initial file verifies successfully. Inconvenient,
....jeanne

8j1a

8-JUL-75 1715-PDT&r(bug) BECK: more on that trouble with the
slash command

Distribution: FEEDBACK
Received at: 8-JUL-75 17:15:16-PDT&r(bug)

8k

further:

The trouble seems to be that the slash has to print stuff in
the tty window. It seems to happen to me at every dnls
terminal around here. I think I know the trouble: my terminal
type has been changed to #7 from number 11. (you can check it
with trm command in Tenex). If I then change it back with term
line command, and go to nls again, the trouble stops. But every
time I Goto Tenex, my terminal type goes back to #7; thus, if I
Goto Tenex and QUIT during an nls session, I will have this
trouble with slash when I am back in nls. Now, the Goto Tenex
command should not be a NO-NO. But every time I do it, my
terminal type goes back to TI (#7).
.....jeanne

8k1

9-JUL-75 2026-PdT BAIR: crash when exceed disc allocation
Distribution: FEEDBACK, bair, lieberman, norton, hopper,
peters

Received at: 9-JUL-75 20:26:03-PDT

81

If you try to write on a file when you are over allocation, the
system gives you the informative msg "cannot write on this
file", not once, or twice, but continuously until the LP
crashes and you are thrown into exec with the display of what
looks like the guts of core going by. Anyway, sounds like a
bad loop. Thanks, Jim

811

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

9-JUL-75 1447=P RLL: BUG: TRIM command not reporting files
 trimmed.

Distribution: RLL FEED ARC=APP

Received at: 9-JUL-75 17:39

Location: (JOURNAL, JRNL27, J26103:gw)

8m

Message:

8m1

the NLS command trim dos what it suppose to do but reports
 no files are trimmed, costs time to check things out,
 please fix,

8m1a

8-JUL-75 1454=P&r(bug) RLL: BUG: Reconnecting to directory

Distribution: RLL FEED ARC=APP

Received at: 8-JUL-75 13:53

Location: (JOURNAL, JRNL27, J26098:gw)

8n

Comments: a bug and a design fault here,

8n1

Message:

8n2

If one is connected to another directory (from your logon
 one) and execute the Expunge Directory command, the message
 "can't reconnect to connected directory" appears. Dean says
 that expunge takes plce for both logon and connected
 directories (BAD BAD). It could be only the connected
 directory, in any case the can't relonnect busy is
 certainly a bug.

8n2a

8-JUL-75 1755=PdT&r BAIR: LP crashes and notice to seek help

Distribution: FEEDBACK, bair, lieberman, white

Received at: 8-JUL-75 17:55:31=PdT&r

8o

It has got to be the paragon of insanity to have the LP crash
 because of noise (which the direct line does alot) and thenhave
 the msg " call an expert,...," crash it again, which it
 continues to do so that you cant get back into DNLS, yuk,
 Jim

8o1

7-JUL-75 1042=PDT MEYER: BUG: appcalit()?

Distribution: FEEDBACK

Received at: 7-JUL-75 10:42:17=PDT

8p

After the following command:

Execute Sendmail Show Record (for ident) NDM <OK>
 the system display the record and offered:

<CA> for more, <CD> to abort

When I typed <CA>, it said:

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help']),,,sandy

Type <CA> when done (again not exact words)
 I did type a <CA> and it took down the lit but did not restore
 my file. From then on, it did not refresh the display (after
 Jump commands, viewspecs "wf", Viewspec "F" behaved properly,

8p1

3-JUL-75 2233=PDT&r(bug) BAIR: System notifies crash the
 Lineprocessor

Distribution: FEEDBACK, bair

Received at: 3-JUL-75 22:33:23=PDT&r(bug)

8q

Messages such as system going down in XX timecrash the LP.
 This is particularly bad if you are entering text, the current
 input of which you lose. Thanks, jim

8q1

2-JUL-75 1118=PDT BECK(JMB) at OFFICE-1: system error message
 again

Distribution: , FEEDBACK at

Received at: 2-JUL-75 11:18:06

8r

I just got the error message again: "NLS system error". This
 time I was trying to delete a short statement. It was my
 initial file again, but the next version, ,,,,jeanne

8r1

2-JUL-75 1342=P&r(bug) RLL: BUG: too severe punishment for
 bugging an empty window.

Distribution: RLL FEED ARC-APP

Received at: 2-JUL-75 14:41

Location: (JOURNAL, JRNL27, J32887:gw)

8s

Message:

8s1

If one bugs a window in which no file has been loaded, the
 punishment is 'illegal instruction,,,,,' and return to exec
 level. Think a meanign ful message could be given as well
 as having job remain in NLS.

8sia

30-JUN-75 1035=PDT MEYER: Bug: Jump to Name Any

Distribution: FEEDBACK

Received at: 30-JUN-75 10:35:35=PDT

8t

At office-1, split window, one empty.
 Jump to Name Any, then pointed to statement number in text of
 one window. Then command accept in empty window,
 illegal instruction JSYS 56=104000,,56 at lodrfb+217=63706

8t1

26-JUN-75 2235=PDT BAIR: Screen recreate

Distribution: FEEDBACK, bair, hopper, lieberman

Received at: 26-JUN-75 22:35:22=PDT

8u

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

DNLS has somehow gotten into the mode where the screen is completely recreating every time I make even the smallest editing change. The cursor scan of the entire statement was bad enough. What gives? Can't afford this stuff when response is like it is. Thanks, Jim

8u1

25-JUN-75 1149=PDT&r(bug) BECK: BUG: <CTRL=S> for Syntax failed
 Distribution: FEEDBACK
 Received at: 25-JUN-75 11:49:09=PDT&r(bug)

8v

I was in Modify; I commanded:

Delete Leading <ctrl=s>

I got the syntax for only the first couple of words of the command, and then the message "Type <CA> to continue" (I was in DNLS).

I tried other commands in Modify, and <ctrl=s> gave me the whole syntax properly. jeanne

8v1

13-JUN-75 0818=P&r(bug) RA3Y: Process Commands in Office=1's
 new 133 exec

Received at: 13-JUN-75 11:50

Location: (JOURNAL, JRNL27, J32746:gw)

8w

Message:

8w1

Unless you have sense switch 3 up, even on a Datamedia, Control VD does not cause a <CA> to be printed. This is a nasty little bug. If people learn about Process commands from documents (this is probably common), they would probably never think to put sense switch 3 up. We should fix this in hardware.

8w1a

10-JUN-75 0938=P&r(bug) MEYER: Delta patas and dismes
 Distribution: ANDREWS AT BBNB, IRBY AT BBNB, FEEDBACK, meyer
 Received at: 10-JUN-75 09:38:16=PDT&r(bug)

8x

The Delta Datas seems to get blown out with a lineprocessor error (light zero flashing) whenever I get a dismes.

8x1

10-JUN-75 1720=P KS: Bug in Edit Statement command?

Received at: 10-JUN-75 14:40

Location: (JOURNAL, JRNL27, J25987:gw)

8y

Message:

8y1

Sandy (still?), Hi --

8y1a

Haven't had anything to complain about for a long time. But

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help']),,,sandy

FEED 7-AUG-75 11:44 33163

I finally found my way to the Edit Statement command, and have been using it with great pleasure -- since I was a great fan of QED a long time ago, and like that kind of editing, for certain kinds of corrections. But there seem to be two problems:

8y1b

The "P doesn't work as advertised -- infact it doesn't seem to do anything; the character typed after "P just goes into the string, replacing whatever was there.

8y1b1

If I mistakenly do a "Z or "O followed by a character which doesn't occur in the remainder of the statement, I quite properly get a "?" (actually, a Bell would be better), but then: If I type <CA>, the remainder of the statement VANISHES! On the other hand, if I type "Q, the statement is preserved all right, but I have to work my way back out of the Help system, which is invoked, as usual, by that character,

8y1b2

Perhaps I'm missing something? Be seeing you,

8y1c

-- Kirk Sattley,

8y1d

5-JUN-75 1418=P EJK: Forward command in Sendmail (2)

Received at: 5-JUN-75 20:03

Location: (JOURNAL, JRNL27, J32680:gw)

8z

Message:

8z1

re: previous mail, the first item I tried to send was dated 5 Jun. The second was 4 Jun. I just tried one dated 3 Jun and everything worked fine. I guess they have to "ripen", I used exactly the same procedure except I sent it to only one addressee, Namely DLS,

8z1a

5-JUN-75 1408=P EJK: Forward command in Sendmail

Received at: 5-JUN-75 20:03

Location: (JOURNAL, JRNL27, J32679:gw)

8a@

Message:

8a@1

I am sitting here loking at my journal branch which shows an item sent to me (hjournal,32673). I have tried thre times to send it and once to send another. First time I bugged the link when I was asked for number. Second time I bugged the number that is on the first line of the citation. Third time I typed in the number. In each case I was told that there is no document with tat number. Am I doing something

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

wron9? Itried to send znother with the same result,
 COMMENT???

8a@1a

5-JUN-75 0136=P RLL: Bug: no way to keyin '37=tty' command in
 useroptions

Received at: 5-JUN-75 20:03

Location: (JOURNAL, JRNL27, J25962:gw)

8aa

Message:

8aa1

Apparently there is no way to keyin the command word options
 "37=tty" or "35=tty" for the useroption command <>control
 (characters for terminal). A "3" will give the 33=tty, a
 <SP>3 will cause a beep (on the ti735 I am using). I would
 guess there is a glitch in the CML for command words that
 are numbers. Rob

8aa1a

4-JUN-75 1902=P KIRK: Bug in recreation with viewspec y

Received at: 5-JUN-75 20:03

Location: (JOURNAL, JRNL27, J32666:gw)

8ab

Message:

8ab1

Whenever a statement is shortened via delete text or
 whatever enough to make in one line shorter, garbage that is
 not really there but very confusing is left over where the
 blank line should be. This should be easy to fix by simply
 adding a line of blanks whenever y is on and a statement is
 being recreated to the end,

8ab1a

4-JUN-75 1858=P KIRK: bug in dnls literal collection

Received at: 5-JUN-75 20:03

Location: (JOURNAL, JRNL27, J32665:gw)

8ac

Message:

8ac1

There is a bug in dnls literal collection whenever
 backspacing the first two words of the second line and then
 the last word of the first line and then typing a word that
 must wrap around. For example, process the following
 statement,

8ac1a

1 Ins Sta Watch what happens when I backspace the words
 at the end of the line here and then tryextemporaneously
 to continue typing,

8ac1a1

3-JUN-75 2253=PdT BAIR: violins a' playin' or "pushdown
 overflow"

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help']),...sandy

Distribution: FEEDBACK, bair, hopper
 Received at: 3-JUN-75 22:53:53-PDT

8ad

while using split screens and lot's of cross editing and jump
 file returns (no more than 2 windows) I hit that old problem of
 "pushdown overflow" ..., and then got pushed into exec. I the
 thing had gotten over its pushyness.
 Thanks, Jim

8ad1

24-MAY-75 2250-P RLL: BUG: Unrefreshed bugged character for
 <CA>

Received at: 28-MAY-75 07:03
 Journal Message 25936

8ae

If the character <CA> appears in the text, it is displayed as
 <CA>. If you bug it the exact character bugged is not refreshed
 and thus that space is an empty 'hole' (maybe a black hole,...).
 E.g., < A> this is for the datamedia terminals, at least; I
 have not checked it for other terminals.
 *****Note: [ACTION] *****

8ael

19-MAY-75 1117-PDT BECK(JMB) at OFFICE=1: The DataMedia's screen
 is too short for Questionmark

Distribution: , FEEDBACK at
 Received at: 19-MAY-75 11:17:52

8af

When in DNLS on the DataMedia, at the herald in BASE, if you
 give a ? to list the verbs, all but the last two words fit on
 the screen--so you have to type another OK before you can just
 give the character you find you want--this is a change from the
 other terminals we have had at ARPA. Too bad. Is there some
 way to reorganize the list shown to get them all on the screen;
 there is actually room for one more in the last line of the
 right column, but that still leaves one verb to mess everything
 up. Can you bring this to the attention of the people who
 designed the Questionmark facility, and to the attention of
 those who evaluate kinds of terminals? (Also, the DataMedia
 can't spell--a mushy keyboard)

8af1

18-MAY-75 2304-PdT&r(bug) KELLEY: help AS (accessing system)

Distribution: LEHMAN AT BBNB, feedback
 Received at: 18-MAY-75 23:04:58

8ag

What is the backarrow I see at the end of the last menu item
 of
 each view using help doing there?

8agi

19-MAY-75 1310-PdT&r(bug) BECK: does the Insert Status form

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

command in Sendmail at 0-1 really work?

Distribution: FEEDBACK

Received at: 19-MAY-75 13:10:50

8ah

I did the Insert Status form command after specifying all my sendmail commands because I wanted to modify my distribution list. I edited it via The Execute Base Insert Text command. Then I did the Process command, as Help advises; Show Status showed the corrected stuff, BUT all that the Send (the mail) command gets me is "fst entry nonexistent"!! I even tried specifying the source again, but still send fails, with that message. I then tried initializing Sendmail and sending all the damn s

ff over again; still Send command still gets me "fst entry nonexistent"! What do I do now (except try again during a different session)? This wasted a lot of time.

8ah1

6-MAY-75 1421=P&r(bug) POOH: sendmail insert status form bug

Distribution: POOH FEED

Received at: 6-MAY-75 13:31

Journal Message 25828

8ai

If i use the File command and then insert status, and then process sendmail form, the file name is no longer included. When I do the insert status form, the entire origin statement is copied and when the form is processed, sendmail only wants a file name. It can't read the commas and comes back with an error message saying so.,, thanks for listening.,,pooh

*****Note: [ACTION] *****

8ai1

6-MAY-75 1849=PDT&r(bug) BRL: CONFUSING COMMENT FROM THE SYSTEM

Distribution: FEEDBACK, brl

Received at: 6-MAY-75 18:49:13

8aj

I just deleted a statement from an NLS file and got the message = file numbers do not match in storesrring = (note unusual spelling of last word). In fact the statement was deleted as I attempted and other than the mystifying message from the machine, I have no complaint = at this time,

Ed vonGehren BRL

8aj1

7-MAY-75 0731=PDT&r(bug) SHEPPARD: Clear (TTY window) command

Distribution: FEEDBACK, sheppard

Received at: 7-MAY-75 07:31:35

8ak

I have been unable to get this command to work. After setting the edge correctly I wished to return to the full display width for one of thesections of the screen (the left most section)

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help'])...sandy

and was not able to restore the full screen width when using
 this command, Ca7 you help me?

8ak1

...Bob...

8ak2

4-MAY-75 1015=PDT%r(bug) BEDFORD: "Numbers in files storesring
 do not match".....huh ?

Distribution: FEEDBACK, mattiuz, bedford

Received at: 4-MAY-75 10:15:13

8al

I tried to Update file Compact on a couple of files this
 weekend, and got this message the first time each case. A
 second attempt worked. The message sonds sort of ominous; what
 does it mean, portend ?

8al1

28-APR-75 1555=EDT LIEBERMAN at BBN=TENEXB: bug; followup of
 previous bug report; bad replace command

Distribution: FEEDBACK AT OFFICE-1, HOPPER, lieberman

Received at: 28-APR-75 12:59:43-PDT

8am

Well folks, it seems that the file i was replacing in must
 have been bad, although verify did not say so nor did sho file
 status. I assume this because I tried a copy plex of file to a
 newly created file and tried the same split screen, replace
 command procedure. No problems, S000, there is another bug,
 (maybe) a bad file is not discovered by verify file command.
 Ain any case appaarently the replce command is not insalted
 from such bad files (that was insulated). I guess thi makes
 two les

r bugs than one serious bug. Rob

8am1

28-APR-75 1521=EDT LIEBERMAN at BBN=TENEXB: bug;replace
 word/visible does not work.

Distribution: FEEDBACK AT OFFICE-1, HOPPER, norton, lieberman,
 bair, engelbart

Received at: 28-APR-75 12:25:45-PDT

8an

It seems tha the command REPLACE WORD/Visible gets into a loop.
 This has been duplicated Severa times with the
 followingconditions,

At BBNB, in DNLS (Datamedia), via SRI-AI, Split screen,
 different files in each of the two windows, different fils
 belonging to different directories, no fancy viewspecs on, no
 user seq genrator on, etc.

I replaced word from one file by word in aother file. This
 resulted in a loop. The replcement was done as can be seen
 when I conrolled c, reset, and entered NLS again. Apparently it
 is looping in refreshing screen or closing file,

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

The file Verified Correctly and I did an update compact before one of the several times I repeated thos error.
 One additional fact: I was connected to a directory other than my login directory.
 I would think cross file edits are importnat and this bug should be found , especially if it has nothing to do with split screens, or corss files, Rob

8an1

22-APR-75 0220=P KIRK: Bugs for applications
 Distribution: KIRK FEED
 Received at: 22-APR-75 13:46
 Location: (GJOURNAL, 25767, 1:w)

8ao

Comments: I handed a printout of this list of bugs to sgr,

8ao1

22-APR-75 1220=P&r(bug) DVN: Markers on the Move Again
 Distribution: DVN FEED CHI KIRK
 Received at: 22-APR-75 13:46
 Journal Message 25770

8ap

For years markers were shuffled at random by the Update Compact command. Last fall Charles fixed that and for a while we had paradise. But early this year something else began shuffling markers. I have hesitated to send this item all these months although the problem troubled me because I was unable to be more specific, but the time has come. I don't know what does it, but sometimes I load a file and the markers are in different palces. Some people argue that markers are being mysteriously deleted as well, but as far as I understand that only occurs when they wander to some new statement which the unfortuante fileowner then unknowingly deletes.
 *****Note: [ACTION] *****

8ap1

(FIRST)

8aq

Delete file with altmode gets the wrong (latest) version of a file.

8aq1

RLL 21-JAN-75 12:46(bug) 25159
 bug: misspelled name in show record comman
 Message: the word "beginning" is misspelled ("begining") when show record command (in sendmail) is request for name beginning with given letters (e.g. show record(for ident) .xxx...).
 *****Note: [ACTION] *****

8aq2

KIRK 6-JAN-75 01:52 25002
 Update File Compact Bug

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help']),,,sandy

Message: The Update File Compact command changes the name delimiters of the origin to the user's default even if he wanted them to be something different. (A bug that doesn't have anything to do with NULL delimiters). The reason the delimiters of the origin are important is that they define the delimiters of any subsequent statements entered at level 1.
 *****Note: [ACTION] *****

8aq3

In reply to your message of: 25-NOV-74 1319-PDT (bugs) PLACKO
 Subject: Sendmail glitch

8aq4

The double query "Send the mail?" is still with us at
 Office-1 -- Mike (change so second message is different)

8aq4a

LAC 23-JAN-75 11:24R - note that the following is in 2 parts
 - one db and one dr 31699
 Suggestions and request for documentation
 Location: (HJOURNAL, 31699, 1:W)
 *****Note: [ACTION] *****

8aq5

%db Responses to the (Y/N): prompt should be displayed. It is useful to have some indication besides an action being taken or not, of what the system recieved, (ie that you really typed what you thought,) Since it's a pretty much a Binary decision (ignoring the command repetition, which is easily detectable), it would probably be sufficient to indicate a "no" response only, if this is easier to implement.

8aq5a

%dr I would also like, when I receive Journal mail referencing another document, to have the system have already assured the referenced document(s) is online and has a readable protection. I find it very frustrating to try to follow a link and find that I have to request an interrogate and wait for the file to be loaded before I can find out what the reference had to say. One level (ie documents directly referenced, but not those referenced in turn- I don't want to chain in the whole tape library) would probably be sufficient. It would be useful also to check at sending time the access protection of all referenced files (journal or not), and flag to the author any which don't have at least general read access.

8aq5b

(SECOND)

8ar

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help']),,,sandy

In reply to your message of 10-MAR-75 0641-PDT SHEPPARD
 Subject: Login message "YOU HAVE NEW JOURNAL MAIL"

8ar1

I have received several reports of users logging in and receiving the message, NEW JOURNAL MAIL -- and when they go to read it, there is no mail. Among the reports were one from F. Brignoli on 2/27, and this one from R. Sheppard 3/10. I am forwarding the message to the bugs branch, sandy/feed

8ar1a

In reply to your message of: 30-JAN-75 1508-PST(bug) BAIR at SRI-ARC
 Subject: The bug is not where you think Major Bug

8ar2

Where statement number are on, and statement names OFF the bug takes effect 3 or more characters to the left of where it appears on the screen when you place the bug mark.
 In running NLS at ARC, NLS 8,7

Jim, Just so you won't get caught by this, It'll be around for awhile since we do not have anyone fixing bugs.

Jim 8ar2a

POOH 29-JAN-75 11:12(bug) 25241
 Use options' Show Control characters for terminals 35-tty and 37-tty

Message: When using this command, these two terminals are listed as first level command words. There exists already 33-tty which is a first level command word, what I am trying to say is that you can't input 35-tty as part of the command, Thanks pooh

*****Note: [ACTION] *****

8ar3

POOH 22-JAN-75 09:18(r (bug) you get the error message . ???
 25178

the process sendmailform command

Message: If you are trying to send a file which you have specified and then use the insert status form command to edit something, when you use the process sendmailform command, it gets hung up on the file name. It seems that the entire origin statement is printed and the process command can only take what is in angle brackets. I'm not sure I have explained this very well so if you have any questions, please come ask, thanks ann,

*****Note: [ACTION] *****

8ar4

KIRK 20-DEC-74 01:35 24789

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help')),...sandy

exceed capacity bug with sendmail forms
 Message: Long comments don't fit in the sendmail form though
 they are acceptable via the comment command. The comment I was
 trying to send was less than 800 characters.
 *****Note: [ACTION] *****

8ar5

(THIRD)

8as

8-APR-75 0022-P&r(bug) DVN: Count Visibles in Branch
 Doesnt
 Received at: 8-APR-75 17:41
 Journal Message 25685

8as1

This command in the publish subsystem counts only the
 visibles in the statement you bug, does no go on to the rest
 of the branch.
 *****Note: [ACTION] *****

8as1a

When in sendmail, show record, system doesn't prompt you for a
 <cr> after it tells you taht ident is accepted; you have to
 know that you give a <cr> -- then it will give the rest of the
 information, Sandy

8as2

2-APR-75 1749-EDT5r(bug) SATTLEY at BBN-TENEXB: "Portrayal
 Trouble" still there! Sorry.
 Distribution: FEEDBACK AT OFFICE-1, lehtman at bbnb
 Received at: 2-APR-75 14:49:31

8as3

Sandy:

8as3a

Thanks for all the attention you've been giving me.
 I hope
 it's useful to your people,

8as3b

Escaping from Help by ^X now works fine (or have I
 already
 reported that. But I can still get "Data Base portrayal
 trouble, Call ARC!" --- that is, I just did (Wed 2 Apr 75,
 1645EDT),
 Here is a blow-by-blow:

8as3c

In BASg C: Help statementname
 After STATEMENTNAME, menu item 1 -->
 Name=delimiters, then item 1 -->
 Set Name (delimiters) command, then item 1 -->
 TNLS example; then -, back to -->
 Set Name ...; then ^O, then item 2 -->

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help')),sandy

```
effects; / name=delimiters; ; after which, " takes me -->
Set Name ... (again); then "0, then --, whence -->
  "effects" -- NO -->
  "INLS example;" -- NO -->
  "Set Name ... " -- NO -->
  "name=delimiters" -- NO -->
  "STATEMENTNAME" -- YES -->
STATEMENTNAME (prints menu only, good), item 2 -->
searching, then item 1 -->
The Jump (to) Name Commands; then item 2 -->
Any: Jump ... ; then item 1 -->
TNLS example; then --, whence -->
  "Any: Jump ..." -- NO -->
  "the Jump (to) Name" -- YES -->
The Jump ... ; then "0, then item 3 -->
First: Jump (to) Name first CONTENT VIEWSPeCS OK:
..... and after typing that line, two blank lines and:
"Data base portrayal trouble. Call ARC!"
```

8as3d

So here we are, I'll admit I didn't try retracing
 the
 whole path myself, just to see if it would work again, I'll
 leave
 that to people who know what they're doing,

8as3e

Good hunting,

Kirk,

8as3f

2-APR-75 0813=P&r(bug)(ndm) JNH: PUBLISH Probs. (TOC)
 Distribution: JNH FEEDBACK
 Received at: 2-APR-75 10:37
 Location: (JJOURNAL, 32246, 1:w)

8as4

generate Table of Contents in Subsys PUBLISH doesn't want to
 work for my file. Attached is the results of 1st the TOC
 generation and 2nd the Copy Plex 1 filtered with viewspcs
 x. I deleted a couple extraneous statements from both
 branch 2 and 3.

8as4a

Table of contents

8as4b

Purpose of C~R0>u&r&r~R0>+P.....2

8as4b1

Approach C~R0>u&r&r~R0>+.....3

8as4b2

Phase I Installation of IMPs&r~R0>.....4

8as4b3

Phase I Applications Processors&r~R0.....5

8as4b4

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help']),,,sandy

Protocolsplications Processors&.....6	8as4b5
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Performance Specifications	8as4c8
Applications	8as4c9
Jess Hill	8as4d

RLL 26-NOV-74 15:37 24620 (bugs)
 Bug: none erasure of feedback words in substitute command
 Message: Bug: If you do a repeat on a substitute command in
 DNLS, the noise words (feedback) is not wholly erased, thus
 creating confusion as to exactly where one is in the command,
 The words "substitute branch", for example never appear again.
 *****Note: [ACTION] *****

8as5

KIRK 23-DEC-74 23:46 24804
 Load File nasty bug
 Message: Takes you to an old version, I'm using WORK but I

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP' / 'Help']),,,sandy

suspect it is true of the running NLS. It only seems to happen if there is a gap between the version numbers. The oldest file gets loaded. For instance, after using the Copy file command from xhelp, I have two files named help. The old one with version 90 and a new one with version 124. Load file invariably gets me version 90. Nasty.

*****Note: [ACTION] *****

8as6

In reply to your message of: 3-DEC-74 1644-PdTira (bugs) % it really is a bug, try it, thanks RLL% PLACKO
 Subject: Unnecessary screen refresh

8as7

There are many instances where DNLS recreates the screen unnecessarily. For example, if one is working with file X, viewing some portion of it, and he goes to USEROPTIONS, executes SHOW ALL, he will see the first screen-full of information. Then if he types <CA> to see more, DNLS first recreates his original view of file X, then creates the view of the remaining useroptions. This kind of overhead has a noticeable effect when system load is high. Couldn't these situations be eliminated? L
 me know your reactions. -- Mike

8as7a

1 NOV 1974 From: BRIGNOLI (bugs)

8as8

Subject: record & playback of session

8as8a

To: feedback

8as8b

cc: brignoli, avrunin

8as8c

8as8d

Jim, I tried to record & pplayback a session today with less than successful results. It looks like only the first character of a command or text is being picked up. This is an old bug that I thought was fixed. The name of the record file is <brignoli>using=sendmail. Regards, Frank

8as8e

(JDH) This one is in limbo

8as8e1

POOH 10-DEC-74 11:12 24718r (bugs) %apparently, this command clears only a display window not the lines at the top of the screen%

Clear (Tty window) command

Message: When this command is used, it clears your display

2nd try to send results of a filtered copy of feedback's bug ranch
 (['HELP'/'Help'])...sandy

window instead of the tty window.
 *****Note: [ACTION] *****

8as9

KIRK 17-DEC-74 20:55 24778
 A bug with <CTRL=O> and outPutting
 Message: With both Output Processor and Compile File, if
 <CTRL=O> is hit before any processing is done, the file is left
 busy so that you cannot do it again. With Output processor,
 you get a message like "nothing processed" and then if you try
 again, you get the message "<PRINTER>(IDENT)FILENAME,1;1 is
 busy". This also happens with compile file.
 *****Note: [ACTION] *****

8as10

1-APR-75 07:57-PdI&r(bug) BEDFORD: MERGE command; trouble
 using it...
 Distribution: FEEDBACK, bedford, mattiuz
 Received at: 1-APR-75 07:57:32

8as11

I get a "fst entry nonexistent" notice everytime I try to
 Merge something into something; what's up ?
 Also, what practical use is MERGE ?
 --mike

8as11a

In reply to your message of: 19-DEC-74 12:51-PdI SHEPPARD
 Subject: Bugs

8as12

When I despsress the right mouse button and type the name of
 a valid marker, the thing says: "invalid spaces in CLINE"
 ...really! The marker was in a statement that was a level
 below the level clipping set by viewspecs. Thank you.

8as12a

RLL 14-JAN-75%(bugs) 14:14 25103
 BUG: No automatic refreshing of screen after using Reserve
 Journal numbers command.
 Message: It seems that after getting reserve numbers from the
 sendmail subsystem and having them inserted into statement that
 appears on the screen that the screen is not refreshed
 automatically (even tho viewspec u is on). A simple F viewspec
 does reveal them.
 *****Note: [ACTION] *****

8as13

KIRK 28-DEC-74 10:11 24845(bug)
 bad bug in Copy or Move STRING across split screens
 Message: This is in running nls. Whenever a copy or move

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

STRING command is used across horizontally split screens, the destination window gets recreated at an apparently random place in the file, not where you were when you made the edit. Also the return ring no longer remembers the original place. DvN says when using vertically split screens, he gets in a loop every time and has to reset. This is probably more a function of the different files than different splits. Taking a look at pscopy, I notice dpset is called before curmkr is updated and ccoptex is called...

*****Note: [ACTION] *****

8as14

28-MAR-75 1511-P&r KM: character size setting commands
 Distribution: KM FEED KM SGR
 Received at: 28-MAR-75 15:35
 Journal Message 32213

8as15

Whilst using DNLS with Susan helping me, I was trying all those commands which the HELP system said were DNLS-only. However the Set character size and Reset character size commands caused the loss of the display in the window and at one instance caused the changing of viewspecs to zero levels. Thus it appears these commands are no longer supported with Line Processors? If so it would be useful to have that information displayed on execution of the command - or at least in the HELP system output.

*****Note: [ACTION] *****

8as15a

In reply to your message of: 9-JAN-75 1337-PST KELLEY at
 SRI=ARC
 Subject: bug in running system(bug)(this is a bug only if an
 adress is attempted or a bug is used)

8as16

substitute link doesn't work. Generates error message
 "cannot substitute for a null text field.

8as16a

26-MAR-75 0834-PDT&r(133 should fix this) POTTER(DAP) at
 OFFICE-1: snedmail subsystem
 Distribution: , FEEDBACK, POTTER at
 Received at: 26-MAR-75 08:34:10

8as17

What's the matter with SENDMAIL? When I try to use it I get
 message: JOURNAL FILE SYSTEM ERROR--CALL NIC CENTER. What
 gives? Fix it?

8as17a

26-MAR-75 1332-P&r(ndm) EJK: Possible Glitch in MODIFY
 Program

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help'])...sandy

Distribution: EJK FEED DLS RBP JPC ELF RJC JLM
Received at: 26-MAR-75 16:50
Location: (JJOURNAL, 32196, 1:w)

8as18

Do we have a glitch in the modify program????

8as18a

This is the virgin (you should forgive the expression) plex, 8as18b

12345678901234567890	1234567890	8as18b1
12345678901234567890	1234567890	8as18b2
12345678901234567890	1234567890	8as18b3
12345678901234567890	1234567890	8as18b4
12345678901234567890	1234567890	8as18b5
12345678901234567890	1234567890	8as18b6
12345678901234567890	1234567890	8as18b7
12345678901234567890	1234567890	8as18b8

This is the plex after bugging the FIRST 9 and the FIRST 0
using DELETE COLUMN command of the MODIFY program,

8as18c

12345678234567890	1234567890	8as18c1
12345678234567890	1234567890	8as18c2
12345678234567890	1234567890	8as18c3
12345678234567890	1234567890	8as18c4
12345678234567890	1234567890	8as18c5
12345678234567890	1234567890	8as18c6
12345678234567890	1234567890	8as18c7
12345678234567890	1234567890	8as18c8

This is the plex after bugging the SECOND 9 and the SECOND 0
using DELETE COLUMN command of the MODIFY program,

8as18d

123456789012345678	1234567890	8as18d1
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2nd try to send results of a filtered copy of feedback's bug ranch
 ([*HELP/*Help'])...sandy

123456789012345678	1234567890	8as18d2
123456789012345678	1234567890	8as18d3
123456789012345678	1234567890	8as18d4
123456789012345678	1234567890	8as18d5
123456789012345678	1234567890	8as18d6
123456789012345678	1234567890	8as18d7
123456789012345678	1234567890	8as18d8

This is the plex after bugging the FIRST SPACE and the
 SECOND SPACE using DELETE COLUMN command of the MODIFY
 program,

12345678901234567890	1234567890	8as18e
12345678901234567890	1234567890	8as18e1
12345678901234567890	1234567890	8as18e2
12345678901234567890	1234567890	8as18e3
12345678901234567890	1234567890	8as18e4
12345678901234567890	1234567890	8as18e5
12345678901234567890	1234567890	8as18e6
12345678901234567890	1234567890	8as18e7
12345678901234567890	1234567890	8as18e8

This is the plex after bugging the FIRST 9 and the SECOND 9
 using DELETE COLUMN command of the MODIFY program,

12345678	1234567890	8as18f
12345678	1234567890	8as18f1
12345678	1234567890	8as18f2
12345678	1234567890	8as18f3
12345678	1234567890	8as18f4
12345678	1234567890	8as18f5
12345678	1234567890	8as18f6

2nd try to send results of a filtered copy of feedback's bug ranch
 ([*HELP/*'Help*']),...sandy

12345678 1234567890

8as18f7

12345678 1234567890

8as18f8

6-MAR-75 1623-EDT&r(bug) LEHTMAN at BBN-TENEXB: Bugs
 Distribution: FEEDBACK AT OFFICE-1
 Received at: 6-MAR-75 13:22:03

8as19

A few problems with user-options stuff: Show control
 characters
 does not show the character defined in its list anymore,

8as19a

Rather than appearing as , for example, CA: [EOL,<"D>], what
 appears
 is : [EOL,<"D>],

8as19b

Also is something going to be done about the fact that the
 HELP file
 is not in documentation, but is in arc=documentation? The
 code
 which loads the file should be changed to point to the right
 directory,

8as19c

Also, are we going to do something about the fact that some
 processes
 (e.g., tasks) try to enable us leading to grief,

8as19d

When, Ms, Feedback miranda, are you going to get those lazy
 NLS programmers off their asses?! Humanity awaits,

8as19e

Angered

8as19f

10-MAR-75 0254-P&r(bug) KIRK: Viewspec v feedback bug
 Distribution: KIRK FEED NPG
 Received at: 11-MAR-75 05:39
 Journal Message 25539

8as20

Now that we have displays that are clear to read if slow to
 re-creaty (and fxll of funny chracters) it is important
 that an old bug be fixed with the viewspec window, Viewspec
 v does not register in the window after it returns from
 being "highlighted", Viewspec u appears when in fact v is
 in effect,

*****Note: [ACTION] *****

8as20a

20-FEB-75 1818-P&r(bug) KIRK: Bug in Process Commands
 Distribution: KIRK FDBK

2nd try to send results of a filtered copy of feedback's bug ranch
 ([*HELP/*Help*]),,,sandy

Received at: 21-FEB-75 09:20
 Journal Message 25436

8as21

After saying "Execute Useroptions " in a command branch,
 "Startup startup" results in the Show All to appear.
 Placing an extra space in front of "Startup" will cause it
 to work. This indicates that after an Execute command, the
 Process Commands command reverts to Terse Recognition mode.
 This is a very confusing bug as everywhere else, Demand
 Recognition mode is required.

*****Note: [ACTION] *****

8as21a

KIRK 4-FEB-75 01:15(bug) 25290

Jump to name External bug

Message: Typing ctrl-o in jump to name external can cause it to
 cease working and print "fst entry nonexistant" from then on.
 Has been rumored to cause bad files.

*****Note: [ACTION] *****

8as22

POOH 4-FEB-75 10:11&r (bug) 25292

<CTRL=O>

Message: It appears that <CTRL=O> doesn't work when you are
 using the command Playback Record. When you are playing back
 your recorded session and use <CTRL=O>, all sorts of different
 weird things begin to happen, ie, the syntax for all the
 commands in the base subsystem started to show on the screen.

*****Note: [ACTION] *****

8as23

27-FEB-75 0827-PDT&r(bug) BRIGNOLI: No Journal Branches

Distribution: FEEDBACK

Received at: 27-FEB-75 08:27:21

8as24

Although the mail has arrived, the print journal command
 doesn't seem to know about it. There seems to be some
 confusion about naming conventions. Help.

8as24a

TELNET typescript file started at THU 27 FEB 75 0820:11

8as24b

#office=1 is complete, #

8as24c

TENEX 1.31.42, OFFICE=1 EXEC 1.51.50

@navimp 200

Specify IDENT to use NLS, CR to ignore. IDENT=

OFFQUOTA LOGIN (type "OFFQUOTA" for help)

2nd try to send results of a filtered copy of feedback's bug ranch
 (('HELP'/'Help'))...sandy

JOB 22 ON TTY21 27-FEB-75 08:20
 TENEX WILL GO DOWN THU 2-27-75 2330 TIL FRI 2-28-75 0330
 @nls

8as24d

Ident = jps
 NLS=8

8as24e

BASE C: Print C: Journal (mail) OK:
 No Journal Branches
 BASE C: Print C: Plex (at) A: 0V:
 < NAVIMP, JPS,NLS;l, >, 26-FEB-75 19:24 JPS ;;;
 (Journal) Journal documents (most recent first)
 ILA 27-FEB-75 04:44 31905
 DEC meeting to discuss new hardware
 Location: (HJOURNAL, 31905, 1:w)
 *****Note: [ACTION] *****

BASE C: Logout OK: TErMINATED JOB 22, USer NAVIMP, ACCT
 200, TTY 21, AT
 ** 2/27/75 0821
 USED 0:0:6 IN 0:0:57

8as24f

#disconnect 1
 #quit

8as24g

DVN 19-FEB-75 14:22r(bug)%appears to be DNLS only% 25425
 Show Marker List Puts you in a Loop,
 Message: Or at any rate you sit there runing and using time
 with nothing happenin on the screen,
 *****Note: [ACTION] *****

8as25

JMB 3-FEB-75 17:45(bug) 31785
 Confusing Prompt in Usersubsystem MESSAGE
 Location: (HJOURNAL, 31785, 1:w)
 *****Note: [ACTION] *****

8as26

KM 30-JAN-75 13:20(bug)(ndm) %r = the bug is with the CTRL=R
 only in TNLS 31751
 More on (31724,) questions
 Message: Thanks for looking into the problem on ident TEH - I
 will let you know what results. As regards the ctrl=R problem,
 I inserted the by typing ctrl=V followed by ctrl=D (note that
 while typing this message in, a cntrl=R typed now does not
 display the two lines above). This happens all the time in
 this kind of situation (but not in a Print command), I have
 tried it in other directories and under different idents and

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help']),,,sandy

the same happens. Perhaps we can link our terminals together
and I will demonstrate. I have set up file
(mccloghrie,process) with two statements - one with a space in
front and one without. Perhaps you can try these. I do believe
that you could not get the 'File locking conflict' to occur -
I mentioned it because it was the second time it had happened
to me but I agree that it does not consistently happen.
*****Note: [INFO=ONLY] *****

8as27

FEED 7-AUG-75 11:44 33163

2nd try to send results of a filtered copy of feedback's bug ranch
(['HELP'/'Help'])...sandy

(J33163) 7-AUG-75 11:44;;; Title: Author(s): Special Jhb
Feedback/FEED; Distribution: /KIRK([ACTION]) ; Sub-Collections:
SRI=ARC; Clerk: FEED; Origin: < FEEDBACK, FOR=KIRK,NLS;1, >,
7-AUG-75 09:36 FEED ;;;;####;

August 11 Briefing

I am having some difficulty determining the value of attending the briefing you will be giving at ONR on the 11th of August. I understand it is primarily for those industrial firms who are not yet acquainted with how to do business with ARPA. It has been suggested that SRI certainly knows how to do that and would find little of value in attendance. On the other hand, I have not yet had the opportunity of hearing you expound on your plans for the very large data base program or the advanced computer memory program. My input has been from short meetings with you and from the three reports, Berlekamp, Gaines and Gammil, and David Green. From these, I see several things that appear to be holes in a complete program.

1

For example, David Green's report asserts to be one of a series on technology assessment. This particular report that you gave me, however, has only carried the task far enough to look at memory products or subsystems. This provides guidance as to alternative choices of memory subsystems, but little guidance as to how to direct effort in technology development. In fact, his analysis discusses the actual technology level only in that he has a good collection of reference patents.

2

A very crucial part of an overall program would be to provide an analysis of individual technologies, including various approaches within them. Since it is very difficult to do this kind of thing in a vacuum, there needs to be a framework or frame of reference in which to make comparisons. Such a framework must be derived from a methodology for developing a well-structured description of large and complex systems. From this description one can then infer the properties of the system as a whole starting from the details of particular parts of it. At present we are concerned with the security properties on a project for NSA and the reliability properties on a project for NASA. Both of these projects use the same design and specification methodology which has been developed at SRI. The approach would seem to be applicable to inferring other properties which are appropriate when evaluating the effectiveness of memory systems. It would appear that the examination of available and potential memory concepts within this framework would give guidance as to the potential payoff of these concepts if and when successful.

3

The question is, would I learn enough about your present plans, from attendance at the briefing next Tuesday to know the value of committing the time and effort to generating proposals in the area of Advanced Memory Technology. Or would it be more valuable to simply have someone from our Washington office attend.

4

Yours truly,
Stephen W. Miller
Manager, Program Development

August 11 Briefing

Information Science and Engineering Division
Stanford Research Institute

5

August 11 Briefing

(J33164) 7-AUG-75 13:39;;; Title: Author(s): Stephen W. Miller/SWM;
Distribution: /CF([ACTION]) KLM([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: KLM; Origin: < MABREY, MILLER,;1, >, 7-AUG-75 13:14
KLM ;;;####;

Edmund J. Kennedy
Rome Air Development Center
(ISIM)
Griffiss Air Force Base
Rome, New York 13441
8 AUG 75

Lee Baumann
SCIENCE APPLICATIONS, INC.
1651 OLD MEADOW ROAD, SUITE 620, MCLEAN, VA 22101

Dear Lee,

In response to your message of 6 Aug 1975 I have been
scurrying around trying to get the complete set of volumes in
the Structured Programming Series RADC-TR-74-300.

This is not an easy task as for some reason these reports
have become very popular and therefore hard to get. In some
cases I had to swear a blood oath since the Project Engineer
is giving me his own LAST COPY. The box score is as follows:

FINAL REPORT

Vol. No. Title

III - Precompiler Program Documentaion

V - Programming Support Library Functional
Requirements

VI - programming support Library program
Specifications

VII - Documentation Standards

IX - Management Data Collection And Reporting

X - Chief Programmer Team Operations Description

DRAFT REPORT

Vol. No. Title

I - Programming Language Standards

Evaluation of Modern Programming Practices

II - Precompiler Specifications	3b3
IV - Data Structuring Study	3b4
VIII - Program Design Study	3b5
XI - Estimating Software Project Resource Requirements	3b6
XIV - Software Tool Impact	3b7
XV - Validation and Verification Study	3b8
NOT YET AVAILABLE	3c
Vol. No. Title	3c1
XII - Training Materials	3c2
XIII - Final Report	3c3

It is the opinion of the Project Engineer that the two volumes still unavailable are not that critical as long as you have the others. The final reports that are bound can be treated as any other report but, please be careful with the draft reports. A couple of them have been approved but others have not and they should all should be unmistakeably identified as being draft copies which are being reviewed at RADC and are still subject to change. I would like to have these reports returned when you are done with them. In part because they are in such short supply, but mostly I do not want unapproved draft copies circulating within the data processing community.

4

I have physical possession of all the available copies except for Volume IV and they will all be in the mail this afternoon. I know where two or three copies of vol IV are but I haven't yet gotten my hands on one. If necessary I'll wait until tomorrow for that one copy, but the others will go out today.

5

Sincerely,

Edmund J. Kennedy

Evaluation of Modern Programming Practices

EJK 7-AUG-75 14:29 33165

(J33165) 7-AUG-75 14:29;;; Title: Author(s): Edmund J. Kennedy/EJK;
Sub-Collections: RADC; Clerk: EJK; Origin: < KENNEDY,
FRASIER,NLS;2, >, 7-AUG-75 12:05 EJK ;;;; #####