ETSP 13-MAR-75 08:07 32070

nls terminal

abi finally found your memo to garlie which has been printed and xeroxed by me and joanne, but we are not sure if its the memo or not , It's basically alot of interaction between you and feedback. But it has memo to garlie forehand on top of each page 20 pages in total. help! Befor e i forget , Irv sigel is requesting my time from apri121-may 9: 3-4 hours a day.ok? I think you mentioned to me that nothing will be happpening then, right? i haven't had alot of time to play with the system, because of the isr data and sigel's project. starting next week my afternoons will be free I've been told. Hopefully i can become mor familiar with tthe system. Marc Minaardi said he'll pay for the repairs. No problem , i guess the head demagnetiser scared him. I was thinking of moving the terminal into your office , so that katie doesn't need to be disturbed. It was just a thought. I hope jury duty is interesting hope to hear from you 1

nls terminal

(J32070) 13-MAR-75 08:07;;;; Title: Author(s): E. TS
ETSPeople/ETSP; Distribution: /DAP([ACTION]) DAP([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: ETSP;

EJK 13-MAR-75 08:32 32072

Helpful Hint #3 From Your Friendly AKW - COPY Command.

COPY 1

When you want to copy a statement, branch, group or whatever from one file to another, it is no longer necessary to have the file to which you want to copy loaded. 1a

All that is necessary is that you specify the address from and the address to. The address must be specified in the form: DIRECTORY NAME, FILENAME, STATEMENT NAME OR NUMBER. If the file you are concerned with is your own file, you need not specify the directory. 1b

For illustrative purposes let us assume that you have a file called NOTES and you want to COPY the first branch in my file called NLS-LORE. To do this type cb<cr>, the system will ask (from) A: - you respond by typing KENNEDY,NLS-LORE,1. In response to a prompt (to follow) A: you type NOTES,0<cr>. At this point you will receive a prompt in the form: L/[**]. This means you can specify the level at which you want the branch copied, or you can exercise an option. In the copy mode the option is to use a filter. 1c

To exercise the option, type a control U. The system will respond with V: prompt. At this point type in the viewspec that you want to control the copying, eg, if you only want to copy the first level and only one line of that the proper viewspec is x followed by <cr>. At this point you will again be asked to specify the level at which you want the branch copied. Since you have already specified, in this example, that you want it to go after the 0 level just type <cr> for level. 1d

NOTE: It is not necessary to have either file loaded when you want to copy from one file to another. Also it is not necessary to have a destination file already created. For example if you do not have a file called notes, the procedure shown in the example will create one for you. In fact, you can create a file in someone else's directory by following these procedure, unless his directory has protection that bars this. It would be neighborly to check the disk status to make sure there is room before putting a file into someone else's directory. 1e

EJK 13-MAR-75 08:32 32072

Helpful Hint #3 From Your Friendly AKW - COPY Command.

(J32072) 13-MAR-75 08:32;;;; Title: Author(s): Edmund J. Kennedy/EJK; Distribution: /RADC([INFO-ONLY]) ; Sub-Collections: RADC; Clerk: EJK;

ETSP 13-MAR-75 08:35 32073

elsa rosenthal

elsa rosenthal is requesting a description of the activities (recent) of the tbrg, I told her that the only involvement , is the temple university project, and that i would notify you, sorry dave but your accesible, FORGET IT, Elsa said she found a recent sumation of your work , and she said it will do. George Elford phoned, and asked if you have contacted New Haven at all about the first step? that is alll,

1

ETSP 13-MAR-75 08:35 32073

elsa rosenthal

(J32073) 13-MAR-75 08:35;;;; Title: Author(s): E. TS
ETSPeople/ETSP; Distribution: /DAP([ACTION]) DAP([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: ETSP;

JMB 13-MAR-75 09:31 32076

Distribution of DEX documentation to Architects at meeting

I have received this explanation of the misleading DEX document that Connie McLindon received at the Archtects Meeting. Jim, I am leaving it to you to rectify the mistake with the architects (I am not sending this to Connie). 1

DVN 12-MAR-75 18:48 25557
More on Mysterious DEX Document
Message: In 1973 I think it was we wrote the original to DEX User Guide and Primer. The primer has been updated from time to time to reflect changes in the system and new terminals, but the User Guide has not because of lack of resources. I don't know how the architects came to get it. I suggest you throw it away.
*****Note: [INFO-ONLY] *****
2

Comments: Responds to <ijournal,32013,> 2a

JMB 13-MAR-75 09:31 32076

Distribution of DEX documentation to Architects at meeting

(J32076) 13-MAR-75 09:31;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /JHB([ACTION]) RH([INFO-ONLY]) JCN([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

KM 13-MAR-75 09:50 32078

Tenex/NLS transfer

Jim, Jess and I have not co-ordinated ourselves in order to be able to get back to you on the phone as we suggested we would. We are compiling a list of things we will want and doing some thinking about them with Mil's advice and I will bring the list with me when I visit SRI on 27th and 28th March. See you then, Cheers, Keith McCloghrie. 1

KM 13-MAR-75 09:50 32078

Tenex/NLS transfer

(J32078) 13-MAR-75 09:50;;;; Title: Author(s): Keith McCloghrie/KM;
Distribution: /JCN([INFO-ONLY]) KM([INFO-ONLY]) JNH([INFO-ONLY
]) ; Sub-Collections: NIC; Clerk: KM;

RMS2 13-MAR-75 10:13 32080

PRINTER TYPE GRAPHICS

This is in response to the interest shown at the last KWAC meeting.
Your comments are welcome along with any suggestions.

PRINTER TYPE GRAPHICS

INTRODUCTION 1

At the last KWAC meeting in February there was some interest expressed in using graphics with NLS. Several persons seemed interested in some of the types of graphics (crude printer plots) that I presented at that meeting. Here are some of the plots that I have assembled thus far in the work I am doing. Indeed they are crude , but they can serve the purpose if one does not demand extreme accuracy of these plots. 1a

The use of these plots, more accurately called... 'masks', will require the use of DNLS rather than TNLS. This is because of the need to replace characters within the plot and for labeling the margins. What is provided here are a few plot masks that can be inserted into your text and with some additional work can be made to convay a good picture of your data. 1b

STRUCTURE OF PLOTS 2

These plot masks have a very definite structure, regardless of whether they be linear or log or any combination of both linear/log. 2a

LINE 1: The top line of the plot (first line of the statement) containes only 2 or more blank spaces and a <CR> at the end of the blank spaces. This is done so that the effect of displaying the plot (statement) with or without statement numbers on will have no effect on the structure of the graph. 2a1

LINE 2: The second line down from the top (second line of the statement) contains a full line of blank spaces followed by a <CR>. This is provided for the title. The plot title could just as well be on the first line if you wish, but the effect of displaying the graph with or without statement numbers will cause the title to shift from its centering position,...,if you chose to center it in the first place. By placing the title in the center of the second line you will insure yourself of always having the title centered even if statement numbers are used. 2a2

LINE 3: The third line down from the top (third line of the statement) will actually be the top margin of the plot. The last character in this line is a <CR>. 2a3

LINE 4 thru n: The fourth line in the statement will actually be the part of the graph which will be used to display data. The last two characters in this line will be ... I<CR>. There will be 10 or more of these lines in each mask. 2a4

BOTTOM MARGIN: This will be an exact copy of LINE 3 2a5

BOTTOM MARGIN + 1, +2 and +3: The next 3 lines below the bottom margin are exact copies of LINE 2. These are provided to enable the user to insert the numbers for the scale of the bottom margin, the label for the variable that is being plotted , and a blank line for any other use. 2a6

LEFT MARGIN: The left margin of the graph will usually begin after the first 5 or more blank spaces in the line. These 5 or more blank spaces are provided for labeling the vertical axis of the graph. 2a7

RIGHT MARGIN: The right margin of the graph will occure before the end of a full line of text. The reason for ending the right margin before the end of the full line is to allow the user to insert this graph (statement) at lower levels without having the system 'CAUSE' the <CR> before one is actually reached. This insures the graph will maintain its integrity down to level 5 or more in some cases. With each mask will be a statement of the number of levels that the mask can be used and still maintain its integrity. 2a8

AIDS IN THEIR USE 3

It may be useful to follow some suggestions when using these masks. To start off, you may consider replacing all the blanks with some other character, say,. Z, so you can see where the blanks actually exist. After you do this I would suggest that you customize the mask to you needs before replacing those .. Z's with blanks. There are several ways to increase or decrease these mask dimensions. 3a

CHANGE WIDTH: To increase the width of the masks, you can replace,.. I<CR> with,. <SP><SP><SP>...I<CR>. Using enough <SP>'s to suit your needs. To decrease the width you would do the inverse. 3a1

CHANGE HEIGHT: If you wanted to increase the height of the mask you would simply insert several lines of mask into the middle of the mask. When you specify the amount of text that you are going to insert be sure to include the first <SP> of the line along with the <CR> at the end of the line. You simply use the correct number of lines of text that will produce the required dimension of the mask to suit your use. 3a2

PAGINATION: Since you will want to insure that the plots are completely on a single page and not separated by any page break, you should use any one of the number of Output Processor commands that will insure this. The best all around command to use is .PFit=on; , this will insure that all of the statement will fit onto one page, even if pagnitation must occure to accomplish it. 3a3

PLOTS 4

LINEAR 4a

The following mask will maintain its integrity down to level 7. 4a1

4a2

The following mask will maintain its integrity down to level 7. 4a3

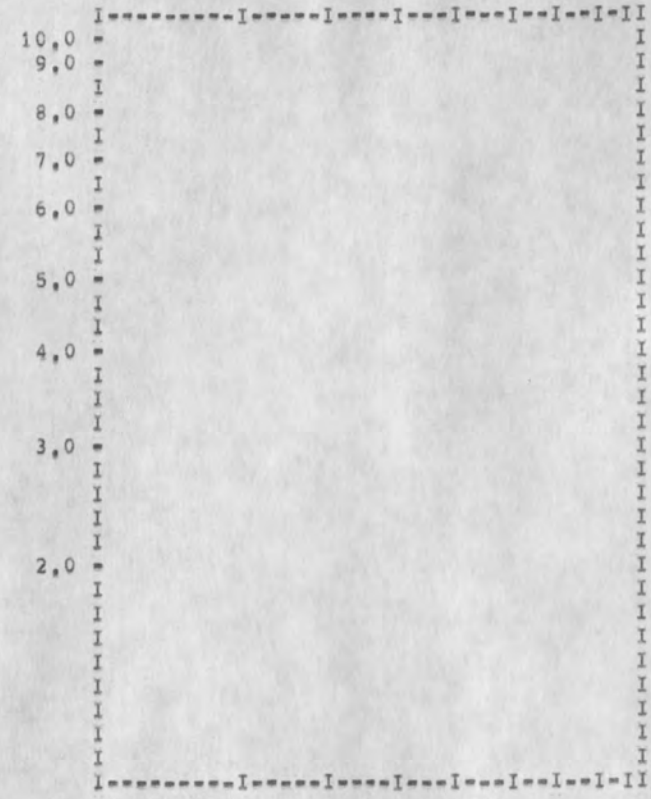
4a4

LOG 4b

The following mask will maintain its integrity down to level 8. 4b1

4b2

The following mask will maintain its integrity down to level 8. 4b3



4b4

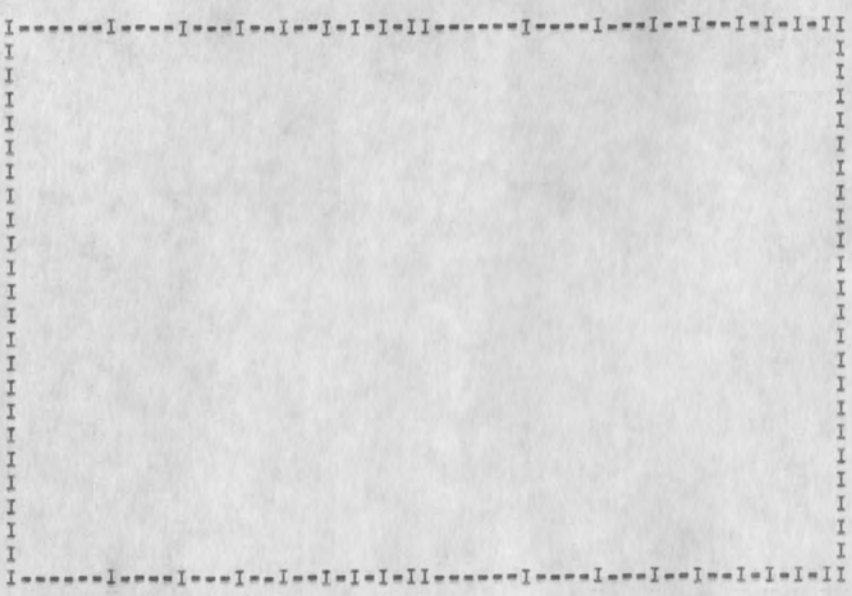
NOTE: The following two masks have a problem depending on the way you may choose to print these statements. When these two masks were produced and printed with the 'PRINT' command they came out correctly. However, if the Out Processor is used these two masks come out incorrectly. It seems that the Output Processor permits a shorter line then does the PRINT command. Therefore a <CR> is generated by the system before one is reached in the text. I am not sure just what will happen with the journal system. 4b5

The following mask will maintain its integrity down to level 5. 4b6

PRINTER TYPE GRAPHICS

4b7

PRINTER TYPE GRAPHICS

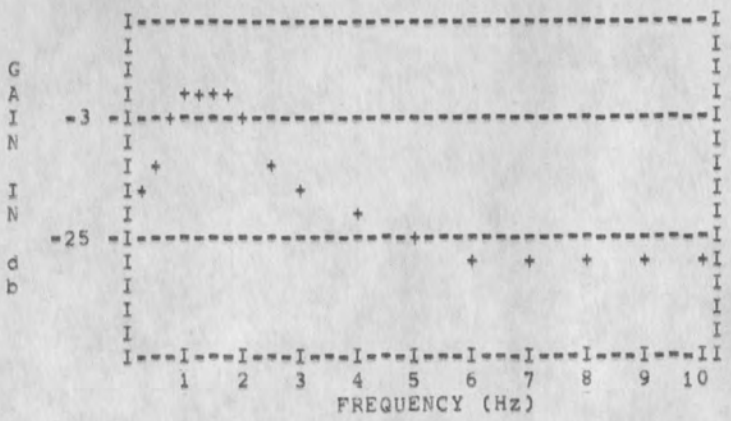


4b8

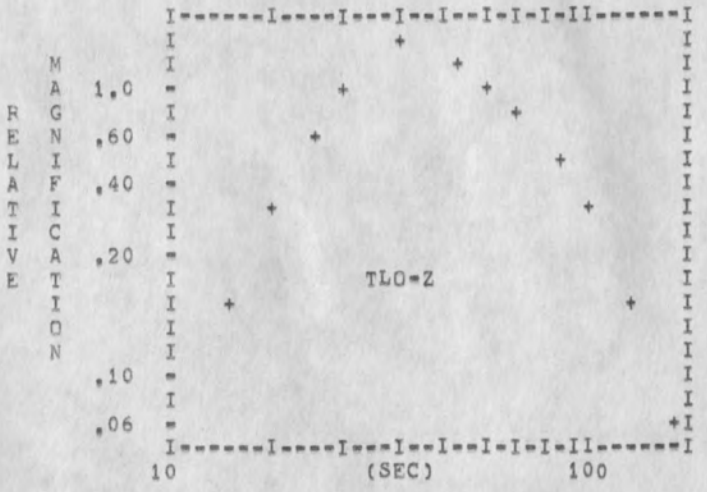
SOME EXAMPLES 5

some example are included here to show what use these masks have been in generating some of the graphics needed to represent seismic data. 5a

PRINTER TYPE GRAPHICS

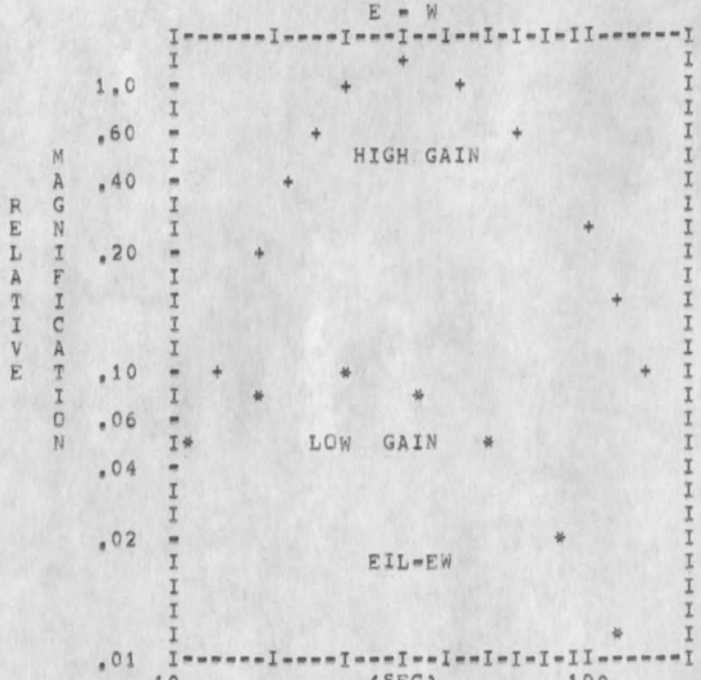


5b



5c

PRINTER TYPE GRAPHICS



5d

PRINTER TYPE GRAPHICS

(J32080) 13-MAR-75 10:13;;;; Title: Author(s): Robert M. Sheppard/RMS2; Distribution: /KWAC([INFO-ONLY]) ; Sub-Collections: NIC KWAC; Clerk: RMS2; Origin: < SHEPPARD, PLOTS,NLS;13, >, 13-MAR-75 06:53 RMS2 ;; ;####;

MAP2 13-MAR-75 11:10 32081

New SRI Workshop Architect

Glenn Sherwood (GAS2) has recently assumed the role of SRI Workshop Architect. He is a staff member of the Office of Computer Planning at SRI and will be working closely with individuals from the Information Sciences and Engineering Divinion. Kathey Mabrey (KLM), from the Information Systems Group, will be acting as Glenn's assistant.

I'll be a "semi-active-retiring architect" for the next couple of months while Glenn gets up to speed in NLS-ness. Best of luck to the Architects -- it's been fun (a rewarding experience, challenge, etc.), I hope to witness an increase in the interaction between Architects during the next year -- there's the potential for real payoffs for the community. Since I'll be an NLS user as a part of the Packet Radio Project I'm sure to be interacting with most of you in the future.

-- Mike

1

MAP2 13-MAR-75 11:10 32081

New SRI Workshop Architect

(J32081) 13-MAR-75 11:10;;;; Title: Author(s): Michael A. Placko/MAP2; Distribution: /KWAC([ACTION]) GAS2([INFO-ONLY]) KLM([INFO-ONLY]) ; Sub-Collections: NIC KWAC; Clerk: MAP2;

FGB 13-MAR-75 13:27 32082

numbers

Peter, here are all numbers I know of, Frank

TIP Numbers 1

For the Washington D.C. Area: 1a

NBS-TIP: 301 948-5951 1a1

MITRE-TIP: 202 893-3214 1a2

For the New Haven Area: 1b

NCC-TIP: 617-491-5450 through 5465 1b1

CCA-TIP: 617-492-8400 through 8407, 617-492-8454,8455 1b2

For the Panama City Area: 1c

RML-TIP: 305-494-5030,2818,6975 1c1

or AUTOVON 854-5030,2818,6975 1c2

For the China Lake and San Diego Area: 1d

USC-TIP: 213-746-5208 through 5212, 5356-5358 1d1

For the Johnsville (Warminster,PA,) Area: 1e

RUTGERS-TIP: 201-932-2750,2751 1e1

numbers

(J32082) 13-MAR-75 13:27;;;; Title: (Unrecorded) Title: Author(s):
Frank G. Brignoli/FGB; Distribution: /PRB([INFO-ONLY]) ;
Sub-Collections: NIC; Clerk: FGB;

missing link

FGB 13-MAR-75 13:38 32083

I apologize for not answering you when we were linked this morning.
When it comes to talking on this system I am dumb. 1

FGB 13-MAR-75 13:38 32083

missing link

(J32083) 13-MAR-75 13:38;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /ILA([ACTION]) ; Sub-Collections: NIC; Clerk: FGB;

JMB 13-MAR-75 14:44 32085

A frustrating and unfair occurrence of AutoloGout

Last week, DCLEMENTS of ARPA was transmitting a file in the XLIST program at o-1; the file was transmitting--he was giving no input, just waiting for his transmission to be completed and was receiving back response on the state of this process. It was a long file, and after 10 minutes or so in this state, he got the message "You will be logged out in five minutes if you ..." He was afraid to type anything for fear of hurting his XLIST transmission. Five minutes later, he was indeed logged out, and as a result the transmission of his file was aborted. A lot of time wasted. 1

I did some checking here: Dave Bushi of Keydata told me that Clements could have typed a space and not hurt his XLIST transmission; Steve Crocker of USC-ISIB replied with the following message, which I am sending on to you to route to someone who can evaluate and decide what action should be taken. 2

> Let me and Connie and DClements@Office-1 know what the decision is, and when it is implemented. Thanks, Jeanne Beck 2a
>
> P.S to FEED: Susan will know about XLIST and thus understand this message (if not be able to act upon it). 2b

12-MAR-75 1335-PDT CROCKER at USC-ISIB: OFFICE-1'S AUTOLOGOUT
Distribution: BECK AT OFFICE-1, crocker, Greenfeld, bushi at isi, mclindon at isi
Received at: 12-MAR-75 13:39:32 3

> Jeanne,
> Thanks for your note. It seems to me that the most straightforward policy to implement is to redefine the notion of "not doing anything" to mean the job is waiting for input from the PRIMARY input device (i.e. the user's terminal) AND no input has occurred within the last 10 (or 15) minutes. My understanding of the problem is that XLIST is really in execution, consuming CPU time and transmitting and receiving data, so its status should be the same as any other "compute bound" job. In order to get the policy to operate correctly, you may have to pay close attention to the fact that the job is waiting for input from the user's terminal as opposed to some other terminal. XLIST currently communicates over the network by using a pseudo-teletype hooked up to a pair of network connections. 3a
>
> All of the above is predicated on the idea that the current policy fails to notice whether the job is computer bound or is waiting for input on the primary input device. If I'm wrong, we'll have to look deeper. A pretty simple alternative for the short term is to not logout XLIST users... 3b

JMB 13-MAR-75 14:44 32085

A frustrating and unfair occurrence of Autologout

Steve 3C

JMB 13-MAR-75 14:44 32085

A frustrating and unfair occurrence of Autologout

(J32085) 13-MAR-75 14:44;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /FEEDBACK([ACTION]) CKM([INFO-ONLY]) ;
Sub-Collections: SRI-ARC FEEDBACK; Clerk: JMB;

NDM 13-MAR-75 18:19 32088

EXECUTIVE INFORMATION TOOLS .Text[section]="

Paper written for Stanford GSB MIS class.

Table of Contents

EXECUTIVE INFORMATION TOOLS ,Text[Section]="

EXECUTIVE INFORMATION TOOLS

Introduction 3

An organization's success depends to a great extent on the effectiveness of its executive managers in guiding the organization through its complex environment. The rarity and cost of executive talent places a high value on its efficiency. Organizations are increasingly becoming interested in providing a supportive working environment for their executives. 3a

A good part of the business executive's day involves working with information and ideas, with knowledge. The executive must be aware of his organization and its environment, through the wide range of contents and many levels of information specificity and permanence. He must solve unstructured as well as structured problems, and work with others on ideas. Essentially, he is employed to think and to communicate. Advanced information-handling tools can play an important role in improving the effectiveness of the executive's use of his valuable time. 3b

The Augmentation Research Center (ARC) at Stanford Research Institute has for thirteen years been developing computer-based tools to augment the abilities of individuals and groups working with knowledge. The focus has not been on problem-structuring methods or on analytical capabilities, but on an overall environment in which people can work with information and ideas. This effort has been guided by an orientation toward the non-technical user, such as a business executive. The set of integrated tools developed at ARC is termed the "Augmented Knowledge Workshop (AKW)." These tools have been applied in a diverse set of thinking groups throughout the United States and Canada with reported initial success. The growth and further evolution of this information environment looks extremely promising. 3c

EXECUTIVE INFORMATION TOOLS ,Text[Section]="

This paper focuses on the tools as they might be applied to a user in a business environment. Specifically it envisions the point of introduction of such techniques in an organization as high-level management; this is the place where facilitating work with ideas will have the greatest return. This paper will describe the tools developed by ARC at a general level, in the context of ARC's assumptions and philosophy on the users' needs and on the design of the man-machine interface. 3d

EXECUTIVE INFORMATION TOOLS ,Text[Section]="

The Executive's World 4

Introduction 4a

The assumption on which the applicability of the AKW to the business world rests is that the executive must depend on his ability to work with information and ideas. This section describes some of the areas in which one might envision such work. It might also be viewed as exemplary of the types of information problems that this technology addresses. 4a1

It should be noted that, although ARC has some feeling for the long-term potential of the system, it cannot possibly hope to know the specific needs of each application, with their wide diversity of interests. Each application uses the system in a different way and evolves capabilities for its use at different rates and in different sequences, as called for by the projects on which it is used. ARC maintains a close liaison with each application group and can provide a great deal of guidance and supporting services in their acquisition of the AKW, but the decision as to the way the system is used is left to the application group itself.

Therefore, this section is not meant to be deterministic nor exhaustive. Rather it is a breif list of some of the needs of a business executive that might utilize information tools.

Viewing the Organization 4b

Information is constantly being generated at all levels of an organization. Much of it may be lost or distorted as it moves through the organizational structure. At each level of the organization it takes on a different form, appropriate to the functions of that position. As information moves upward in an organization, it may be condensed and filtered. The communications flow may involve many implicit a priori decisions as to who needs what and in what form. 4b1

While such a flow is likely to be quite functional for every day work, it may be disfunctional from the point of view of the executive. The very nature of the executive's job precludes a priori decisions about information needs. He considers all aspects of the organization, to the level of depth required by

the decision at hand. He is responsible for unusual decisions, the ones not handled by the operational structure. 4b2

The executive must maintain close contact with his organization. He should be able to view its history or current state at any level. He needs direct access to information, internally and externally generated, by people or by processes, or at any level in his organization's hierarchy (e.g. at its point of introduction into the organization). He may need special perspectives suited to the question at hand. This activity may have time value, or may be sensitive to the accuracy of the information. Tools that allow the manager to view his organization effectively should help him acquire the information required by his job. 4b3

Thinking 4c

The raison d'etre of the executive is his ability to think. His daily life involves problem recognition, information structuring, idea generation, and (often unstructured) decision making. The long-range success of an organization may depend on his thinking abilities as applied to strategic planning and decision making. Tools that let him get his ideas out in front of him, that help him shape, structure, and work with ideas, gain perspectives on them, and allow them to evolve should help him in his thought processes. Such tools applied to the more mundane aspects of his thinking day (such as keeping reminders and notes to himself, sorting his mail, scheduling his time, etc.) can free him to spend his thinking time more creatively. 4c1

Communication 4d

The manager must communicate with others in his organization. He must be in close contact with his subordinates for the purposes of implementing decisions and controlling performance. Upward communication is important in gaining guidance or information and in transmitting results. Communications with colleagues can support his understanding of the organization and provide access to valuable resources. 4d1

Furthermore, communiques have a wide range of time values. He should be able to sort incoming messages and respond with the appropriate expendience (though no less effectively due to any

delay). Any tool that increases the rate of flow of ideas must also include techniques for handling the greater volume of communication.

This becomes particularly important in national or international organizations requiring geographically distributed managers to coordinate their efforts and share information and resources. A thinking environment should provide the executive with an integrated set of communications tools. 4d2

Teamwork 4e

More and more frequently, groups are being utilized for important decisions and projects. Such groups may or may not be located physically in the same place. These groups, regardless of location, should be able to work together on their ideas on an ongoing basis. In addition to basic communications tools, group dialog and conferencing capabilities, a communal information environment, and the ability to get a perspective on, to refer directly to, and to merge ideas would provide important additions to an organizational knowledge workshop. Parallel efforts might be replaced by collaborative effort. 4e1

Tools of Analysis 4f

The executive might require access to tools designed for specific tasks or analyses located throughout his organization or commercially available via a computer network (e.g. his accounting system, a simulation developed elsewhere, etc.). To use them effectively, he should have a coherent environment from which he can reach out to the tools he needs (preferrably using the mode of interaction with which he is familiar) and bring the results into an environment in which he can work with them (perhaps incorporating them into his current work). 4f1

Organizational Knowledge Base 4g

Experience builds capabilities in an organization. The Boston Consulting Group recognizes the effect of learning on all levels of an organization in their concept of "experience curves." If

an organization can facilitate the process of assimilating experience into learning, it might realize a significant competitive advantage. 4g1

Organizational experience may take the form of individual experiences, formal rules, or a formal or informal knowledge base. The executive should have easy access to the knowledge of his organization. Structured tools may allow him to access structured information, such as formalized company data bases. Communications tools and recorded dialog will allow him to assimilate the many personal experiences in the organization (or community) relevant to his problem. Unstructured tools may allow him to look up the collection of experiences or trace the dialog in his organization on a given subject. 4g2

Any form of organizational knowledge base facilitates learning from experience. One might hope that duplicate efforts could be minimized, and the permanence and accessability of the organization's knowledge ensured. A flexible information environment should allow an organization to build any forms of knowledge bases appropriate to its modes of operation and to specific areas of knowledge. 4g3

External Communities 4h

A business executive may find his interests closely resembling those of a community of his professional colleagues outside as well as inside the organization. The ability to exchange ideas in real time and in an environment effective for working with those ideas would provide a mode of collaboration more effective than annual meetings and professional journals alone. (Of course new tools must initially augment rather than replace traditional modes of working; for example, computer based communication is not intended as a substitute for the occasional face-to-face interactions typical of such communities.) 4h1

There should be mutual reward in including the business executive in evolving communities of like and unlike professions with common interests. The inclusion of universities and researchers would broaden the perspective and resources of such a community. Communities might facilitate the understanding and development of new techniques in the business world, better enabling all involved to effectively operate their organizations and serve their clients and society. Privacy is a necessary feature, but much is to be gained by an information environment which supports open collaboration. 4h2

Conclusion 41

This paper addresses tools designed to meet a certain class of needs in the executive's day: specifically those activities involving work with information or ideas. It is clear that not all of an executive's work is based on thought; he must manage people and a political entity as well. However, it is expected that information-handling tools will facilitate a significant part of his work activities. 411

His initial use of such tools may be through his secretary. He may also wish to involve others in his organization as specialists on certain aspects of their use. However, much of the benefit can come from use by the executive himself.

Many information-handling tools are being offered or developed; some are activity-specific, some are task specific. This paper discusses a system intended to be an overall environment in which to work with knowledge. The focus of this paper is not on its specific capabilities, but on the framework for integrating tools. 412

The system described is intended for use by non-technical people; as such, the design of the man-machine interface is a crucial factor in its successful application. The next section will discuss considerations in the design of this user-environment. 413

The Philosophy of Augmentation Tools 5

Introduction 5a

Any set of tools to be integrated so intimately with the executive's work life must be both powerful and effective. The design of a computer-based environment has great effect on the power and flexibility of the tools that result. 5a1

ARC has assumed throughout the development of the AKW that many of its users would not be technically oriented. Both in the learning process and in subsequent use, the design of the man-machine interface is an important determinant of the usability of the tools. If the user must devote too much effort to thinking about how to use the tool to do what he wishes, he will be distracted from his primary thinking task and the purpose of the tool will have been defeated. This has been of equally great concern. 5a2

This section will breifly describe considerations in designing and implementing the computer-based environment and the man-machine interface. [For elaboration, see reference 8c by R. W. Watson.] 5a3

Objectives for the Online Environment 5b

Integration of Tools 5b1

One cannot predict the combination or sequence of tools that will be used in a given application, or what operations will be needed in the future. Some users may only have access to a subset of the tools in the AKW. Thus, results must be easily communicated from one set of operations to another. It should be easy to add or interface new tools to the workshop.

As described below, ARC expects the workshop to be embedded in a computer network; this highlights the requirement for well specified conventions and protocols for communication between tools.

Extendibility of the Environment 5b2

There seem never to be enough professional programmers or system developers to build or interface all the tools that

users might need for their work. Special combinations of tools, entirely new tools, or special user interface packages may be needed for specific applications. The user should be able to extend the environment in a programming language, in the basic user-level language of the workshop itself, or in a higher level language used to specify the user interface and relate actions to the lower level set of information processing functions of existing tools.

Range of Workstations and Symbol Representations 5b3

The range of workstations available to the user will increase in scope and capability. As hardware decreases in cost, more and more capabilities will be placed in the workstation both in the form of user interface aids and facilities, and in the form of frequently used tools. These workstations will support text with large open-ended character sets, pictures, voice, mathematical notation, tables, numbers and other forms of knowledge representation. Even portable hand-held consoles may soon be available. An objective when the support of multiple terminal types is considered is the development of a set of consistent control and portrayal conventions compatible across terminal types.

Distributed Nature of the User Interface Processes 5b4

The facilities which support interface with the system can be conceived of as an "agent" for collecting instructions from the user and information from the system. These facilities may reside in the same processor as the functional tools, in a processor in the workstation, or be distributed in two or more processors. Such a trade-off depends on the level of interface sophistication, and on the cost and capabilities of existing hardware. A well partitioned system architecture will allow flexibility in distributing the system processes across processors.

Embedded in a Computer Network 5b5

With the proliferation of advanced research and development in a wide variety of computer-based services, one cannot expect a single system to hold state of the art tools in all areas. The knowledge workshop may be provided in the environment of a computer network (such as the ARPANET).

For instance, the core functions may consist of a network of cooperating processors performing special functions such as editing, publishing, communication of documents and messages, data management, and so forth. Less commonly

used but important functions might exist on a single machine.

Once there is a "digital-packet transportation system," it becomes possible for the individual user to reach out through his interfacing processor(s) to access other people and other services scattered throughout a "community."

Specialty application systems will exist in the way that specialty shops and services now do -- and for the same reasons. When it is easy to transport the material and negotiate the service transactions, one group of people will find that specialization can improve their cost/effectiveness, and that there is a large enough market within reach to support them. In the network-coupled computer-resource marketplace, one might expect to see specialty shops providing such services as application systems specially tailored for particular types of analyses (e.g. for checking through text for spelling errors, or for doing the text-graphic document typography in a special area of technical portrayal). There will be a role for brokers, wholesalers, and retailers.

The workshop might provide a "labor marketplace" as well, where one can transact one's knowledge work independent of geographic location. One might expect to see the evolution of a new breed of consultants, or new freedom in choosing one's living environment independent of one's job.

The key point to emphasize is that even when hardware costs decrease to the point where a user can perform 90% of his work using tools and information in the stand-alone processor in his workstation, he will want access to a computer network to:

1) communicate with others,

2) access large or special databases, and

3) access special tools that are available elsewhere.

Objectives for the Man-Machine Interface 5c

Man-Machine Communication 5c1

There are two halves to the user interface, the input side by which the user inputs information and indicates by various

conventions and control means what he wishes accomplished; and the output side by which the machine provides assistance to the user in control specification and portrayal of information it has stored or is processing.

> Man has many motor and other capabilities that could be the basis for input and control specifications; similarly he has a range of sensory capabilities that could be used as targets for system output-encoding. To date techniques have been developed for use of only a few of these capabilities for man-machine dialog. An important area of research involves exploring the value of techniques that extend the range of capabilities brought into use. There is interesting research going on in areas of speech, eye movement, brain wave control, hand written script, and video graphics that will undoubtedly be integrated in the truly multi-media systems to be built in the near future.

The collection of input-output equipment and the arrangement of work tables and the workspace employed by the user is called the "workstation." At the present time the dominant means of input are typewriter keyboards, function buttons, keyset (chord) keyboards, and graphical pointing devices (such as the mouse and cursor described below, electronic pen-tablets, light pens, joysticks); the dominant output means are printers and displays of varying capabilities.

The communications media should be fast, intuitive and comfortable, and capable of transmitting the diversity of information with which a Knowledge Workshop is used.

Real-Time Tools 5c2

Another goal is to match the speed of system responsiveness to the natural speed and flow of man's thought processes. Forcing the user to remember an idea while the machine catches up will frustrate him if not destroy the flow of his thoughts. Faster and more capable hardware, constantly becoming less expensive as well, provides hope for adding capabilities without a sacrifice of speed. Given a system configuration, however, certain trade-offs must be made; for example between speed/cost and power, flexibility, a clean user interface, etc. A balance must be maintained.

Interface Information 5c3

There are five main areas or dimensions along which the user needs information to help him a) to know where he has been, b) to know where he is and c) to know where he can go from here.

The command language and user interface must provide the ability to move in these dimensions as well as obtain status,

1) Information Space

The user needs to know where in his information space he is, and which of the many possible views is being displayed to him. Generally he arrived at his present position from previous points and he may want to be able to backtrack to previous views as well as to move on.

2) Command Space

In workshops containing many tools and commands, the user needs to know which one is presently active and which ones he can next enter.

3) Command Syntax Space

During the specifications of a command the user may need to know what he can or is expected to do next and how to back up to a previous point.

Error messages are important and should be as specific to the problem as possible. This has implications within the system design for trapping error conditions as early as possible and for determining the appropriate message for the specific error and context of its generation.

4) Information Input Space

The user needs to have ways to see and possibly modify, in simple ways, information and command specifications that he is entering.

5) General Context Space

At any point the user may need general information about the facilities and terminology of the system he is using.

Integrated Set of User Interface Principles 5c4

There should be a common set of principles over the many tools in the workshop shaping user interface features such as the language, control conventions, and methods for obtaining help and computer-aided training.

This has two main implications:

1) While each domain in the core workshop or within a specialized application system may have a vocabulary unique to its area, this vocabulary must conform to language and control structures common throughout the system. A user will learn to use additional functions by increasing his vocabulary, not by having to learn seperate "foreign" languages.

2) When in trouble, he will invoke help or tutorial functions in a standard way.

Grades of User Proficiency 5c5

A once-in-a-while user with a minimum of learning will want to be capable of doing at least a few straightforward things. In fact, an expert user in one domain may be a novice in others that he uses infrequently. Attention to an intuitive interface and to novice-oriented tutorial help features will facilitate learning and exploration of the workshop environment.

But users also want and deserve the reward of increased proficiency and capability due to improvements in their skills and knowledge and in their conceptual orientation to the problem domain and the workshop's system of tools, methods, conventions, etc. "Advanced vocabularies" and short concise control notation and conventions will be important.

A corollary is that workers in the rapidly evolving knowledge workshops should continuously be involved with testing and training, so that their skills and knowledge include the latest available tools and methodologies. User feedback will be an important guide in system evolution.

Command Syntax Issues 5c6

A command language must unambiguously allow specification of the operation to be performed and the entities or information items (arguments) to be acted upon or used to determine what is to be acted upon.

Commands can be specified in a variety of ways: by typing them in their entirety or in an abbreviated form, by pointing at them on a screen, or by use of default values where appropriate. The machine may ask questions, expecting the user to just fill in the blanks. The order of specification, the syntax or grammar of the language,

can take various forms. For example, operation command words can be specified followed by the arguments, or vice versa. Arguments can be in fixed positions or explicitly named and occur in any order. Some arguments or command words can be optional and require special characters to indicate their presence. Arguments or command words can have defaulted values under certain conditions. Arguments may be given types by the system so that more extensive error checking and feedback may be given by the system.

Depending on the characteristics of the computer system, it may or may not be possible to provide command word or argument completion, prompts or other feedback, argument checking, default values, and so forth during the command specifications.

For example, line-at-a-time half-duplex systems may require the user to complete the entire specification of the command before transmission to the system. In character-at-a-time full-duplex systems the system can react to each character received and provide more extensive aids to the user during command specification.

Problem Orientation of the Command Language and Tolerance for Ambiguity 5c7

Depending on the nature of the task and operations available to him on the system, the user may be able to express what he wants accomplished in a single "statement" or command to the machine; or specification may require a series of commands to the machine. One of the goals of the command language designers should be to understand the nature of the users application domain so that the user can express his needs in a vocabulary and form as close as possible to the level at which he naturally thinks, with the machine breaking the request down into smaller steps as required. Many hope to allow novice users or users in certain applications to use natural language to make statements to the machine.

Even if and when efforts to achieve natural language capability for command specification are successful, it has severe limitations in terms of effort required for input and lack of precision of expression, indicating that artificial languages tailored for man-machine dialog will still be extensively used, particularly by skilled users.

If there is ambiguity in the user's command, the machine should recognize this and prompt appropriately and meaningfully for clarification. An understanding of how to

represent and dynamically build and improve models of user and application domains will require further research to fully meet this goal.

The use of application and user models to allow higher level problem expression and greater brevity of task description will be useful for both skilled and novice users, and will be an interesting and fruitful area of research in the years ahead.

Conclusion 5d

The spectrum of issues listed above should point out the variety of approaches available to the designer of a command language. His decisions will be based on factors such as: 5d1

1) the types of users and their expected usage patterns, e.g. training versus ease of learning,

2) the types of workstations to be used and the input and output media characteristics,

3) the terminal handling characteristics of the operating system underlying the applications system, and

4) the size of the command language, number of operations, and expectations about the size of the vocabulary and future growth.

Techniques of Augmentation 6

Introduction 6a

This section describes the Augmented Knowledge Workshop developed by the Augmentation Research Center at Stanford Research Institute. It is based on a system called "NLS," for oN Line System. NLS runs on a highly interactive time-sharing system, currently a DEC PDP-10 computer. 6a1

This section begins with a description of the user interface. It then discusses online tools, and finally considerations in naming and determining the syntax of the commands. 6a2

The Workstation 6b

Terminal Hardware 6b1

One can use NLS via either a standard typewriter terminal or a display workstation. The user can do almost everything from a typewriter terminal that he can do from a display, but it is slower and more awkward. This section will predominantly focus on the display workstation.

The display workstation is based on a standard CRT display terminal (with an addressable cursor). Such a display is often used as a fast and quiet typewriter terminal by scrolling lines up.

To allow using the display terminal in the special way described below, a micro-processor (called a "lineprocessor") is required. The lineprocessor directs the sequential stream of characters from the computer to the appropriate window on the display and interfaces the other special devices to the computer. It does some character translations, converting a few little-used keys to special function keys. The lineprocessor also allows the user to print on a slave hard-copy printer (or standard terminal) while simultaneously working with the display.

A device called a "mouse," when rolled across the table-top, moves a cursor correspondingly on the screen. This has proven to be a fast and accurate means of pointing to any character on the screen (light-pens, joysticks, etc.

were deemed unacceptable). This device is now being used in applications other than NLS.

The expert can type any character on the typewriter keyboard by playing chords on a peripheral five-finger keyset. When specifying many commands in rapid succession, each of which only takes a few characters, the keyset saves the user from continually having to orient himself on the typewriter keyboard, transferring a hand back and forth to the mouse.

All the special hardware necessary to convert a standard display terminal into a display NLS Workstation can be purchased for a nominal price.

Additionally, the workstation requires a communications link to the computer. Typewriter terminals can use standard voice-grade telephone lines with acoustic couplers; a high-speed data line is recommended for the display workstation.

Front-End Mini-Computers 6b2

The user interface, or "front-end," can run on a seperate computer (such as a mini-computer) close to the user. The front-end interacts with terminals and collects and interprets commands, controlled by two data bases: the grammar of the command language, and a user profile holding various interaction parameters for each user (see 6e6). It sends completely specified commands to the basic processing routines in the back-end processor via a communication network (see 5b5). This configuration allows rapid response during interactive command specification, leaving the back-end free for information processing. This also allows greater machine-independence and potentially resource-sharing in the back-end.

Organization of the Online Workspace 6c

The NLS display screen is organized into windows to satisfy the user's needs for information (see 5c3). With typewriter terminals one does not have this two-dimensional display capability, and, while the same information can be given to him, the slower speed dictates that less should be given automatically and some in an altered form. 6c1

1) Information Space 6c2

The largest part of the display screen is taken by the window to information, to the users' files. It can be "moved" within and between files. The user can point with the mouse-controlled cursor on the screen to anything he sees in this window. The user can split this window into smaller windows, each of which may hold a different view of the same or of other files. He can set up filters through which he views files, based on content or position in the file structure.

The NLS information space (the files viewed through this window) is hierarchically organized. Each user has a directory, within which are files. Files in turn are hierarchically organized, like an outline, with information nodes holding strings of text of arbitrary length, e.g. paragraphs (shortly to be generalized to pictures and other entities). A file may represent a reference document, a thinkpeice, an outline for a presentation, a formal report, a message to a colleague, notes on a number of subjects stored under various headings (e.g. mail, reminders), a computer program, etc. The structure should be apparent in this document.

The value of hierarchically structured files deserves emphasis. The ability to view a file to any conceptual depth allows users to gain a quick understanding of material they are reading, move quickly to specific information they may need, or view and modify trains of thought at any conceptual level. Powerful dynamic data base retrieval structures can be built using standard tools, yet tailored to each application. Ideas can be viewed and moved about as blocks, with or without regard to their content.

The use of the structure is entirely at the discretion of the user. For example, it may be used in structuring data for retrieval, or may represent information itself in the context of a thinkpeice. The flexibility of its use allows applications of the system to projects formally requiring specialized software. The user may even ignore structure; however ARC has found that users learn to utilize the structure, in fact, to think in terms of structure, very quickly.

Files can contain cross citations to specific points within the same or other files to create networks. NLS has

appropriate commands for following these citations, moving within and between files.

View parameters control the format of the portrayal of the file (i.e. place "filters" on the window without affecting the file itself). An example of a view specification is limiting the view to a given level of depth in the file structure. The most commonly used view parameters are displayed in a small window in the upper right hand corner of the screen. These characters are highlighted when he is at a point in a command where he may change views.

2) Command Space 6c3

NLS is viewed as a collection of tools that can be used cooperatively or alone. The system is partitioned into subsystems designed to support an area of activity (e.g. sending messages, modifying files, etc.). Each subsystem contains a number of logically related tools (single or related commands) and has a name such as BASE (the collection of editing and file manipulating commands), CALCULATOR, etc. (see 6e1). All the subsystems work with the same file structure, and the user can move from one subsystem to another or execute single commands in any tool from any other subsystem.

The name of the current subsystem within which he is operating is displayed in a small window in the upper left hand corner of the screen, or in abbreviated form as a prompt on typewriter terminals. The user can examine the list of subsystems that he has used.

3) Command Syntax Space 6c4

A window across the top of the screen is devoted to displaying the command (including noise words) as specified so far, to prompts indicating what to specify next, and to error messages as they occur (see 6d6).

4) General Context Space 6c5

The entire workstation can be used with the Help tool to obtain general information about the system, the online environment, vocabulary, and folklore (as described in 6d6).

NLS Subsystems 6d

Reading: the most basic tool 6d1

The ability to move the Information Space window through and between files is available in all subsystems. In the process, the user may change parameters of the window to provide special views.

For example, one may limit the view to any given level of depth in the hierarchical structure, limit the number of lines of each node displayed, set up content analysis filters, request certain display formatting features (e.g. blank lines between statements) or information about each node (e.g. by whom and when it was last edited). One may follow pointers to other views (possibly of other files). One may scan for content or for a specified node. One may list or follow viewing paths back through previous views of a file, and through the previous succession of files.

All of these features are automatically availaible in special purpose user-built subsystems as well.

Editing 6d2

This subsystem holds all the most frequently used tools, allowing the user to manipulate the content of files and files as a whole. Many aspects of this subsystem are available on a variety of commercially available systems; their integration into the unique AKW environment and conformance to the user-oriented design philosophies lends uncommon power and effectiveness to text editing and document production tools.

Modifying Text

The user has available a rich set of commands that allow him to freely modify the information before him. He can work at the structural or content level, deleting, adding, moving, replacing, or transposing anything he sees in his Information Space window.

Manipulating Files

Entire files may be created, moved, renamed, or deleted. They may be made private or open (to the world or to a specific list of individuals and groups).

Publishing

By placing special formatting codes in the text, one may format the files for output on a wide variety of hard-copy devices, including the terminal itself, a high-speed line printer, or Computer Output to Microfilm devices. The latter offers publication quality output suitable for photo-offset printing, giving the user control over type face, size, and right justification as well as the standard parameters of page layout and special text generation (e.g. numbering) available on all output devices.

Another subsystem intended to facilitate output formatting includes a command which applies any of a variety of predesigned formats to the user's file.

Teleconferencing

The user may perform any operation in the system while his terminal or display is linked to that of another user, physically anywhere in the world. Two people sharing views and simultaneously working with the tools of NLS, particularly in conjunction with a standard telephone voice connection, proves to be a very effective mode of collaboration.

Calculation 6d3

The equivalent of a simple desk-top calculator (with ten registers) is available as a subsystem. Its power lies in its ability to interface directly to NLS files, reaching in for data and placing the answers in the file as commanded. An algebraic package may soon be developed. This subsystem plays an important role where simple numeric analyses support a document (e.g. proposals, budgets, etc.).

This is one area where long-run evolution may dictate an interface to systems developed elsewhere, to gain the power of the many specialized mathematical packages available and under development.

Community Dialog Support 6d4

One can have any file or piece of a file permanently cataloged. A copy of it will be stored under an assigned number. Additionally, citations will be delivered to the distribution list specified by the author.

This allows the recipient to read the document at his leasure, and to respond with comments including pointers directly to places in the file. Additionally, the file

stands as a permanent reference and part of the community knowledge base.

The communication may optionally be designated as private, so that only the author(s) and recipients will have access to it.

The dialog made public might provide an interesting source of information for historical studies of the development of an idea. The excellent cataloging system allows the dialog support tool to be used as a private or public library as well. An application might expect this function to grow in value as the group works in the AKW environment over time.

The distribution list may include groups as well as individuals. This allows the definition of working groups or communities of common interest, and provides any easy mechanisim for community dialog and for the development of a community knowledge base. In combination with the effective individual knowledge handling capabilities, the resultant order-of-magnitude increase in the rate of flow of ideas should make feasible a true community collaborative effort.

User Programming 6d5

As indicated earlier, the ability for the user to extend the system himself is important. In using such a facility, the user programmer does not have to be deeply concerned with efficiency if the task handled by the extension is performed infrequently. If the operation is performed frequently, then it probably should be inserted as a system feature and implemented efficiently by professionals. Thus there is a trade-off between ease of extension specification and operational efficiency. NLS presently offers two forms of extendibility.

The first allows users with programming knowledge to write programs in the ALGOL-like language in which the system is implemented. This language is block-structured, includes basic information processing primitives (e.g. to move within a file or insert or delete information), and may call on NLS system primitives (e.g. commands).

User programs can be designed to be used like any of the standard subsystems (perhaps even to be installed by the user as part of his set of always-available subsystems), or programs may be used as window filters. The Control

Meta Language is a high level language which allows easy specification of all aspect of the user interface. Window movement, subsystems access, questionmark and syntax facilities, and command word recognition are automatically provided in user programmed subsystems, supporting a consistent set of user interface principles.

The user can also create sequences of NLS commands and have these sequences executed at will. One sequence can be automatically invoked when he first enters NLS.

He can create the sequence either by typing in the text representing the commands he would use, or by executing the sequence once himself and asking the system to watch him and record each command for subsequent playback. Either of these techniques allows simple programming without knowledge of any programming language and with only user-level knowledge about the online environment.

As programs become well used, debugged, and generalized, they can be shared with others in the form of a library of applications-subsystems. As a general need become apparent, the programs can be incorporated into the standard set of tools in the workshop.

Self-Help 6d6

There are several levels of feedback and help available to the user in formulating a command to NLS. Each is described below:

1) Command Keyword Recognition

A number of options are available for specifying command words (see 6e4). By whatever form, recognizing and filling out a command word verifies that the system understood what the user intended to specify.

2) Noise Words

When the system recognizes a command word or argument, it generates "noise words" (set off in parentheses so the user can distinguish what he has input from what the system has added). The noise words remind the user what to do next. For example in the "Move Word" command the noise words preceed each selection of a word that the user makes:

Move Word (from) (to follow)

Novice users report that noise words are one of the most useful aids. As more experience is gained, the other aids (described below) which compress more specific information take on greater importance. Note that at different times different forms of feedback and aids are more useful.

3) Prompts

When the user completes the specification of a field, he is prompted with a few characters indicating the type of input expected next (e.g. a command word or text selection) and the alternatives available to him for how he can specify the needed input (e.g. type in or point to text on the screen).

Users can turn prompts off, as some typewriter terminal users do when they reach a certain level of proficiency (although many highly skilled users operate with them on). Display terminal users tend to always operate with them on because of the high speed of the display and the minimal interference of their appearance on the line below that used to display the state of command specification.

Users may also also specify terse prompting so that optional fields are not offered in the prompt.

4) Current Options and Syntax

If the noise words and prompts are not sufficient to remind a user about what options are available to him next, he can strike a questionmark or a <Control-S>.

If he strikes a questionmark, the system displays in alphabetical order all the command words that are legitimate for the current field.

If he strikes <Control-S> the system prints out the syntax of all possible commands given his present position in the command specification.

The questionmark and <Control-S> are extensively used. They are a convenient way of refreshing ones memory about infrequently used commands or of exploring new commands, given a basic knowledge of system concepts and vocabulary.

5) Help Data Base

If the above facilities are not sufficient (perhaps because of uncertainty about a concept or the meaning of a word, or when more information about the effects or use of a command is required), the user can enter the Help subsystem. Entry can be made from the basic command level or from any point during command specification. In the latter case, the system utilizes the information input so far to take the user to an initial point that describes the command and field he was about to specify. The Help subsystem gives the user access to a large Help Data Base.

Once in the Help subsystem, a simple set of commands and the organization of the database allow the user to examine referenced related subjects or new subjects, or to back up to higher level descriptions. Subjects range from explanations of specific commands or fields to general discussions about the system and the online environment. It is designed to allow self-tutorial exploration of the system with minimal initial competance.

6) Descriptive Error Message

Error messages indicating any incorrectly specified arguments are placed in a window at the top of the screen. The user is left at the appropriate point within the command specification.

Command Design 6e

Subsystems of Commands 6e1

The system has been organized into clearly defined subsystems (see 6e3) with uniform rules for their entry and exit. Any subsystem can be entered from any other, either to "execute" a single command with automatic return or to perform a chain of commands with explicit return either to a specifically named subsystem in the path traversed or to the previous one.

Study of the command set of a large system shows that a given task, such as sending a message or calculating a budget, generally requires several related sub-operations (i.e. tools). Commands were grouped into subsystems by

considering learnability and ease of command specification as well as logical function.

Certain tools (such as moving in information space or seeking help) tend to be used as sub-operations of many or all tasks. They are implemented as "universal" commands, available in any subsystem.

The ability to execute any single command in another subsystem with automatic return has been useful when a task requires a single command implemented elsewhere.

Naming Philosophy 6e2

Commands must be intuitive, easy to specify, and able to be parsed unambiguously. Wherever possible, command words have a normal usage related to the operation described. Synonyms would be easy to implement if judged desirable.

The command language for the typewriter version and the display version are as similar as possible (except where the difference between the one dimensional and two dimensional media clearly prohibits this or would seriously limit one or the other version). This allows people working in environments consisting of both typewriter and display workstations to move back and forth with ease.

As much as possible, NLS is designed to make the command specification of the form: verb (delete, move, insert), noun (statement, text, file), followed by any additional command words and arguments indicating what is to be acted on.

This approach was taken to aid learning; it seemed to be natural and follow normal English imperative forms. The choice of the verb-noun form seemed particularly appropriate in important areas such as editing, where a given verb (such as Delete) can be applied to many entities (such as a whole structural node, a character, a number, a string of text, a file, etc.).

The command language is designed to maximize the fullness of the verb-noun matrix. All operations that have a natural inverse command have been provided one.

Learning is facilitated if the user can form a model of how the system works that can be consistently applied. In this case a user can learn a small set of verbs and nouns, and understand that generally, if its meaningful, the two can be used in pairs. Thus, having learned a finite number of

vocabulary terms, the novice can apply them in combinations to form commands.

Syntax 6e3

Arguments must be specified in a prescribed order. Some commands have optional fields that can be skipped. Other fields can be left empty; in some cases the system supplies a default value.

Allowing command fields to be specified in any order has some advantage for novice users, since they don't have to remember argument order, particularly on line-at-a-time half-duplex systems where system feedback is limited. However such a form requires a great deal more typing, since the user must specify which field he is entering as well as the content of the field.

NLS operates from a character-at-a-time full-duplex system so that several levels of help are available (as described in 6d6) for giving cues and prompts, explicitly listing options or syntax or giving full documentation on what the system expects next during command specification. It was felt that little would be gained by allowing fields to be specified in any order using explicit field names.

Command Specification 6e4

Command words can be specified by complete or partial typein, in a variety of modes. Experienced users are concerned that commands be formed with the minimum number of input operations and still have the richness to specify the variety of operations needed; novice users require simplicity and intuitive specification. These goals may conflict at times.

NLS was designed to balance this trade-off, and to allow the flexibility to adapt to each user's needs. Each user can choose which command word recognition and completion mode is most appropriate to his terminal type, system response, previous system experience, and present NLS experience level. Command word recognition and completion options include:

1) terse -- single character recognition of the most commonly used commands; less commonly used commands require an escape character followed by enough characters for unique recognition. (With large and expanding command sets, one cannot choose command words with mnemonic value and guarantee uniqueness by the first character.)

This mode is generally preferred by experienced users because of the simplicity and speed with which frequently used operations can be expressed.

2) anticipatory -- recognizes command words after enough characters are typed to be unambiguous; the system then automatically fills in the remainder. (Most commands currently require two characters.)

3) demand -- attempts recognition when user types an Escape character

This mode is popular with new users of typewriter terminals, particularly those with experience using the operating systems with similar recognition modes (e.g. TENEX).

4) fixed -- always recognizes command word after three characters are typed. (The present vocabulary guarantees command words to be unique in a maximum of three characters.)

Some novices appreciate the consistency of this scheme.

This flexibility allows greater freedom in command syntax and naming, independent of novice-expert trade-offs. Given the implementation, it is quite easy to add other recognition modes (e.g. allowing the user to choose command words from a menu displayed on the screen; however experiments have shown that the time it takes to point at an item on the screen is equivalent to several keystrokes and thus would be disadvantageous to skilled users).

Operand argument specification is contained in a number of fields, as appropriate to the type of command, in an order as natural (relative to normal English usage) as possible. All commands of a similar type are consistent in the order of the operands. Infrequently used operand fields are optional and novice users need not be aware of their existence.

Arguments can be typed in, defaulted where appropriate, or specified by pointing to appropriate entities on the screen.

There are three flavors of command completion:

1) Execute the command and return to the base state to await the next command.

2) Execute the command and continue to offer the command words of that command, waiting for the next set of arguments or an abort character which breaks the loop and returns the user to the base state.

3) Execute the command and begin offering the command words to insert a new node after the just-edited node, waiting for the appropriate set of arguments or an abort character which breaks the loop and returns the user to the base state.

The last two allow rapid movement through a series of commands.

Editing and Backup During Command Specification 6e5

At any point during command specification, the user can abort to the basic command level. This is useful if he gets confused and wants to return to a known state or changes his mind about which command to use.

The user can delete the last character or word typed in, the last command word, or the last selection made on the screen. He can repeat this incremental backup through each field of the command.

Flexibility of the Interface 6e6

User may choose among options in prompting, feedback and other interface parameters. The system automatically sets his interface parameters to the specified options when he enters the system. This facility may also attach special tools, perform startup operations, or place the user in a particular state.

The user interface is described in a high level language designed for this purpose, allowing easy creation or modification of user interfaces for special needs, with automatic conformance to the chosen interface options.

All the levels of help information except the Help Data Base are derived from the grammar. This guarantees their correctness in special purpose tools and in the system as it changes. Various forms of hardcopy documentation (such as command summaries) are also derived from the grammar representation.

These capabilities allow easy tailoring of the total interface

to the needs of specific users or groups of users, or simple creation of interfaces for new tools.

Conclusion 6f

NLS is an integration of a broad spectrum of tools, designed with the needs of a wide variety of users in mind. The business executive typifies the knowledge worker in his activities based on information and ideas. The implementation in keeping with user-oriented design philosophies should make NLS a viable aid to the executive. 6f1

Conclusion 7

NLS is seen as a prototype collection of a growing set of tools and services to aid knowledge work. Its impact lies in the integration of tools into a total knowledge workshop. It is expected that the number of tools and vocabulary to control their use will grow. 7a

Strategies for evolving the total set of AKW usage capabilities in an organization should be carefully planned. Generally, an evolutionary approach allows easy assimilation of such tools. ARC has been most successful at integrating these tools when a person from the application group is designated "applications architect," and is given responsibility for planning which capabilities are assimilated by whom and when, and to which project these tools should be applied. The effects of the Augmented Knowledge Workshop are too far-reaching to abandon applications support after delivery. 7b

In its current state, the system has proven effective in a number of applications. The duties of a business executive include many which would benefit from the application of the AKW. However, it is by no means to be seen as a panacea for all of an organization's information needs. It is not intended to compete with specialized tools utilized by the business world (such as high-volume data base retreival systems, accounting systems, and the like). It should be viewed as a thinking environment, not a process. 7c

ARC expects that, in the near future, the Augmented Knowledge Workshop will find wide applicability throughout the business community. There will be infrequent and casual users of such systems, along with many people who will spend large fractions of their day utilizing knowledge workshops. The careful design of the man-machine interface and the integration of a wide variety of tools are the keys to expanding use by non-technical knowledge workers. ARC looks forward to increasing application of the AKW to business needs. 7d

References 8

Boston Consulting Group, PERSPECTIVES ON EXPERIENCE, (1972). 8a

Engelbart, D. C., "Coordinated Information Systems for a Discipline-or Mission-Oriented Community," Computer Communications Conference, San Jose, California, (January 1973) ARC Accession Number 12445. 8b

Engelbart, D. C., Norton, J. C., Watson, R. W., "The Augmented Knowledge Workshop," National Computer Conference, New York, New York, (June 1973) ARC Accession Number 14724. 8c

Watson, R. W., "Some Basic Characteristics of a Knowledge Workshop System," in: ONLINE TEAM ENVIRONMENT, Augmentation Research Center, Stanford Research Institute, Menlo Park, California, (1975) ARC Accession Number 22133. 8d

NDM 13-MAR-75 18:19 32088

EXECUTIVE INFORMATION TOOLS

N. Dean Meyer

March 1975

Business 367A

EXECUTIVE INFORMATION TOOLS ,Text[Section]="

(J32088) 13-MAR-75 18:19;;;; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /DCE([INFO-ONLY]) RWW([INFO-ONLY]) JCN([
INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: NDM; Origin: <
MEYER, BA367-P,NLS;41, >, 13-MAR-75 18:09 NDM ;;;;
####;

MIKE 14-MAR-75 06:16 32093

summary of MIKE visit to Weyerhauser Inc.

copy of a MIKE memo to LHD updating on MIKE visit to Weyerhauser; copy to JCN as he may be interested in posssible new applications area.

summary of MIKE visit to Weyerhauser Inc.

Jon B. Dunnington
Venture Analyst
New Business Research
Weyerhauser Company
3400 - 13th Avenue S.W.
Seattle, Washington 98134
(206) 623-3913

1

After listening to what BPG was up to, we got into their views on long-term planning.

2

They are assigned the responsibility of uncovering and analyzing new investment areas for Weyerhauser. When they say they're looking at new business opportunities, they mean it a lot more broadly than does BPG. They have the mandate to explore just aout anything they want, as long as they can tie it back to something else that they've already identified as a possible revenue producer. Areas that they've already explored and passed on to the financial and market analysts for closer scrutiny include prefabricated housing, the home improvement after-market, real-estate development, and other similarly prosaic items. They are currently looking at the agri-business movement.

3

One of the problems they've identified in their group is the constant threat of their outlook being dulled by a too-narrow perspective of their environment. Creativity is apparently one of their most valued assets, and they go to considerble lengths to foster and develop it. They have participated in the creativity-development sessions sponsored by Synectics, Inc. of Cambridge, Mass., and he suggested that we look into it as well.

4

In looking at any new area, they ask themselves what strengths they currently possess that would be applicable, and what strengths would they have to develop. They proceed from their to analyze the variety of other areas they wold be able to get into if these additional latent strengths were to be developed; that is, over how many potentially profitable ventures could they spread the investment in muscle-building, so to speak.

5

Their approach to this "tree" of related skills and potentials seems analytic and thorough. I explained how a system like OFFICE-1, with its tree structure and its provision of a common data base might prove to be a valuable tool to them, and he agreed, even though he had expressed initial reservations about the system when I told him how we were using it. (He doesn't have much use for computer applications in research management.) I gave him Norton's name, and he seemed interested enough that he might call. In any case, I'll pass his name along to Norton.

6

summary of MIKE visit to Weyerhauser Inc.

If possible, their work style seems even looser and more free-wheeling than ours. They seemed to have created enough goodwill for themselves within Weyerhauser that they can direct their work pretty much to their own ends. 7

MIKE 14-MAR-75 06:16 32093

summary of MIKE visit to Weyerhauser Inc.

(J32093) 14-MAR-75 06:16;;;; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /JCN([INFO-ONLY]) LHD([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: MIKE;

DLS 14-MAR-75 08:33 32094

Dealing with 'LARGER' Plots

Bob...thanks for the plots (,32080). There are a number of people here who do this occasionally, including myself. As you say, if you don't have a display FORGET IT!! We have IMLACs here, which only have a 64 character line width, which makes larger plots difficult, but not impossible to deal with. A couple of tips from our experience with larger plots: 1

Creating Larger Plots 1a

I use a seperate statement for each line of the plot. This makes it easy to create a new blank plot by copying plex, group, etc a few times. It also makes it possible to deal with plots that won't all fit on the screen. 1a1

This means that you have to create them as a plex down from a branch if you want to deal with them as an unit. 1a1a

Create a statement to use as a marker, which consists of spaces and an ! or a number (corresponding to the character position) every 10 positions. Freeze the statement to keep it at the top of your screen and jump to the statement you are working on, so it is at the top of the screen just below the frozen statement. This makes it easier to work with plots that wrap around to a second line. 1a2

Printing Larger Plots 1b

To print plots larger than your screen width, set an output processor directive for example. Then Goto Tenex and set the width to 120 or greater. Then when you do Output Terminal or Output Remo can be used. 1b1

You can of course suppress the indentation, thus eliminating worry abo B or by output processor directives. 1b1a

Our IMLACs have a key which turns invisibles (spaces, carriage returns, tabs) o preparation, and avoids the "Z" substitution which you alluded to. This abilit when dealing with tables containing a mix of the three types of invisibles. I SEARCH FOR CRTS TO INTERFACE WITH THE LINE PROCESSOR UNTIL IT AS FOUND A COMPAN sure that now they have to use Line processors, that the search will begin agai 2

While they are looking, I'm sure that they will try to find one that allows the screen is being refreshed, something which only the IMLACs have now that 2a

DLS 14-MAR-75 08:33 32094

Dealing with 'LARGER' Plots

(J32094) 14-MAR-75 08:33;;;; Title: Author(s): Duane L. Stone/DLS;
Distribution: /KWAC([INFO-ONLY]) GAS2([INFO-ONLY] welcome aboard)
EJK([INFO-ONLY]) ; Sub-Collections: RADC KWAC; Clerk: DLS;

ILA 14-MAR-75 08:52 32095

test

This is a test for Tom this is in the comment field

ILA 14-MAR-75 08:52 32095

test

This is a test file to test sendmail subsystem, This is from a file and not by comment or message 1

ILA 14-MAR-75 08:52 32095

test

(J32095) 14-MAR-75 08:52;;;; Title: Author(s): I. Larry Avrunin/ILA; Distribution: /TRR([ACTION]) ; Sub-Collections: NIC; Clerk: ILA;

JCN 14-MAR-75 08:57 32096

Office-1/Network Service Problems: What's Goin' On

As we discussed at the KWAC meeting, many people have been working on the problem(s) with Office-1/ARPANET responsiveness and connection problems. ARC, Tymshare, BBN and ARPA people are activly looking at many factors. Reports of trouble and slowness have continued to come to ARC through FEEDBACK and through direct messages, calls, and links. 1

Primary irritations include users not being able to connect to Office-1 or being cutoff after connection, slow "system" response at the terminal (displays and typewriters). 2

There are lots of potential elements of the system that may contribute to overall slowness of output at the user's terminal. Traffic on telephone lines from TIP/IMP to TIP/IMP including the number of hops a particular user encounters, buffer sizes at tips and IMPS along the way, primarily at input and Office-1 ends, state of the TIP/IMP hardware itself, efficiency of the TENEX/IMP network software, efficiency of TENEX at Office-1, efficiency of the current NLS-8 implementation, the hardwre configuration at Office-1, and the effects of user-loading (the number of users in the busy hours and the nature of their service demands). 3

It should be noted that these elements are not static in their characteristics since, for instance, some code in the Tymshare TIP/IMP (IMP side) to support the Stanford SUMEX machine--VDH software--for a time took almost 40% of the buffer space,,BUT several weeks ago, being suspect, was removed and is run there only midnight to 2am PST now. Also, the long-awaited second drum at Office-1 is installed and working well. The effect of the added drum appears (after a careful look) to have greatly increased throughput of CPU power to users jobs (with room to grow still with a third drum on order). This seems to have the effect of giving better response at higher load-average numbers--hard to demonstrate with other delays still in the overall system. 4

Though certainly no consolation to Office-1 users, we should mention that most of ARC is getting nls service now over the network (not through Tymshare-TIP/IMP) to BBNB-TENEX and are experiencing severe slowness in response and attending morale inflamation. It doesnt take this to make us interested in fixing the problem as fast as we can, but does add more prespective to our staff's understanding of the seriousness of the situation. 5

This week, we are contributing all ideas we have to Steve Walker at ARPA, as is BBN, in an effort to make a coordinated attack on the problem(s). Also, lots of test measurments are being made,,timing the various hops our users' delicate digits take from terminal to machine to machine,,,and back to terminal. These are still underway and are

starting to give us all some better feeling about what's going on, but as yet are by no means conclusive. 6

It still helps when users cannot connect to Tymshare TIP/IMP or get cutoff, for them to notify the NCC , or TYmshare, or at least send a note to FEEDBACK (when possible). FEEDBACK, though swamped, isn't fedup, though responsiveness there is threatened in the deluge. 7

At this point, even with ARC/BBN efforts getting coordinated even at the detail level, we have to admit that we have no conclusions yet, though plenty of "contradictory and confusing" information. As an example, those users who get very slow response from Office-1/net combination during the "busy" hour and who see, say a load of 8.0 may well have the feeling that we just plain sold too many slots. The same users, working late, however will see what others do: the same slowness even at loads under 1.0. Hmmm we say, for we see it too. 8

It's clearly a race between the problem-solvers and the users' patience...which, judging from this user, is wearing damn thin. 9

We are most receptive to any comments/suggestions you (whoever reads this) may have about the problem or about conditions at your user-sites. I am writing this from San Diego, California, dialed into the AMES-TIP near SRI, connected to Tymshare-tip and Office-1. It is 0735PST and the load has been at about 4.5 with 22 jobs (a little light) and all are in NLS or the output processor. The response is just fine..that helps.. and I am trying to put aside a litle guilt for working at this time. But this thing has to get out, so here I am, confusing myself with good response, talking about poor response. I'd almost feel better if it were terrible right now, perhaps it is for you. I'll get mine , I'm sure, just as a big report is due to get out. 10

Jim Norton (ah, there's a delay, finally) 11

JCN 14-MAR-75 08:57 32096

Office-1/Network Service Problems: What's Goin' On

(J32096) 14-MAR-75 08:57;;;; Title: Author(s): James C. Norton/JCN;
Distribution: /KWAC([INFO-ONLY]) FEED([INFO-ONLY]) ;
Sub-Collections: SRI-ARC KWAC; Clerk: JCN; Origin: < NORTON,
KWACNOTE.NLS;1, >, 14-MAR-75 07:56 JCN ;;;;####;

JMB 14-MAR-75 11:58 32099

Re--32005,> DIR REQ for AFDSDC (Crain at Gunter)

Larry Crain was wondering if you have received his directory requests in <32005,>, and if the ones we will need for class on Mar 19 will be ready. 1

JMB 14-MAR-75 11:58 32099

Re--32005,> DIR REQ for AFDSDC (Crain at Gunter)

(J32099) 14-MAR-75 11:58;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /FEED([ACTION]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

DLS 14-MAR-75 13:38 32100

Structured Programming Address List Procedures

Bobbie,..you I and Don should get together and make sure we have a common agreement on this...File names, procedures, programs, etc.

Structured Programming Address List Procedures

The address list for the IBM Structured Programming series of documents has raised its ugly head again. The problems are not insurmountable, but arise from misunderstandings about what is to be accomplished and from changing requirements, which in turn come from the learning process. This whole exercise is an example of the lack of top-down design, prior to implementation. I'm not sure that we could have forseeen all the versions of the list that would need to be generated, since some of the problems came from rigid rules imposed on us by the publications people. Based on our experiences documented in (31199,) and further insight into the requirements, I am recommending that the following procedures be adopted in the future. 1

MASTER LIST 1a

That a master file be maintained, which contains at any instant in time the most current version of the list. That any time additions to it are to be made (or deletions), that the file first be journaled, with appropriate back links to the previous "official" version. That the journal references be kept in the beginning of the master list file or in some appropriately named file in Nelson's directory. 1a1

That a standard format be adhered to, that is 1a1a

first middle last-name <cr> 1a1a1

sub organization name <CR> 1a1a2

organizaion name<CR> 1a1a3

City state zipcode 1a1a4

where there are no commas between the city and state and the state is indicated by the official 2 letter code. 1a1a4a

It may also be desireable to standardize on organization names, so that sorts and groupings can be made by organization. 1a1a5

Standardization is necessary to make it easy (or at least possible) to manipulate the addresses with simple directives and user programs. 1a1b

Extraneous information, such as the number of copies to be sent to each organizaton be kept in another statement, 1 level down from the addresss statement. 1a1c

ADDITIONS 1b

When additions are to be made, type these in a seperate file, under a branch that has a date time stamp in it. Do not merge these into the master file until the OK is given by Don Marks, since the creation of additional lables and distribution lists is dependent on the whims of the publications people, who apparently insist on a one-to-one correspondence between the order of the distribution list and the labels. 1b1

DELETIONS 1c

If deletions are to be made to the master file, do this by spliting screens, and moving branches from the master file to the delete file and updating both. 1c1

SPECIAL VIEWS 1d

The standard method of creating sorted versions of the file is: 1d1

update the master file 1d1a

create a new file 1d1b

compile and institute the appropriate program 1d1c

copy plex 1 from the master file to the newly created file with the i viewspec on 1d1d

update the new file with the j viewspec on 1d1e

sort plex in the new file 1d1f

update the new file 1d1g

Any temporary file that is created for scanning by Don, should be deleted once its usefulness has ended, since it can only lead to confusion if kept around beyond a few days. 1d2

The maintenance of data bases on both GCOS and NLS is bad news!! This was done out of a feeling on Don's part that he didn't want to bother us every time he needed some support. I tried to assure him that it was not a bother, but that we welcomed "legitimate" work from anyone in the Branch. He has also indicated a desire to learn the rudiments of NLS, so that he might manipulate the files himself. Trouble with this, is that the type of work needed on the address lists, represents a fairly advanced level of NLS mastery. Without the whole background of the system under his belt, I feel he would be wasting his time, and run the risk of doing damage to the lists. 2

Structured Programming Address List Procedures

If we believe our plans for 76, Nelson's section will be brought up on NLS. If Don didn't mind being a guinea pig, we could start with him now. CRT terminal time might be hard to come by, otherwise no problem. 3

The programs which I use in manipulating the address list files are listed below. They should be self explanitory. They can be copied to the head of the address list file or another file in Nelson's directory, for ease of use. 4

```
PROGRAM makename %adds an NLS name to a statement, based on the
visible preceding the first literal carriage return. In the case
of the address file, this should be the individual's last name.%     4a

   DECLARE TEXT POINTER beg, end;                                    4a1

   DECLARE STRING lastname[100];                                     4a2

   (makename)PROCEDURE;                                              4a3

      IF FIND [EOL] < $NP ^end $PT ^beg > THEN                       4a3a

         BEGIN                                                       4a3a1

            ST beg _ '(, beg end, '), SF(beg) SE(beg);               4a3a1a

         RETURN(FALSE);                                              4a3a2

         END                                                         4a3a3

      ELSE RETURN(FALSE);                                            4a3b

      END,                                                           4a3c

   FINISH                                                            4a4

PROGRAM zipname % adds an NLS name to a statement, based on the
last visible in a statement. In the case where a statement is an
address, it picks up the zipcode (if there is one). %                4b

   DECLARE TEXT POINTER beg, end;                                    4b1

   (zipname)PROCEDURE;                                               4b2

      IF FIND [ENDCHR] < $NP ^end $PT ^beg > THEN                    4b2a

         BEGIN                                                       4b2a1

            ST end _ '(, 'Z, beg end, '), SF(end) SE(end);           4b2a1a
```

```
        RETURN(FALSE);                                          4b2a2
        END                                                     4b2a3
      ELSE RETURN(FALSE);                                       4b2b
      END,                                                      4b2c
    FINISH                                                      4b3
  PROGRAM outname % removes statement names %                   4c
    DECLARE TEXT POINTER sf, paf, pae;                          4c1
    (outname)PROCEDURE;                                         4c2
      IF FIND ^sf SNP '( ^paf ['),] ^pae THEN                   4c2a
        BEGIN                                                   4c2a1
        ST sf _ pae SE(sf);                                     4c2a2
        RETURN(FALSE);                                          4c2a3
        END                                                     4c2a4
      ELSE RETURN(FALSE);                                       4c2b
      END,                                                      4c2c
    FINISH                                                      4c3
  PROGRAM findname % finds named statements %                   4d
    DECLARE TEXT POINTER sf, paf, pae;                          4d1
    (findname)PROCEDURE;                                        4d2
      IF FIND ^sf SNP '( ^paf ['),] ^pae THEN                   4d2a
        RETURN(FALSE)                                           4d2a1
      ELSE RETURN(FALSE);                                       4d2b
      END,                                                      4d2c
    FINISH                                                      4d3
```

Structured Programming Address List Procedures

(J32100) 14-MAR-75 13:38;;;; Title: Author(s): Duane L. Stone/DLS;
Distribution: /RN2([ACTION]) RJC([ACTION]) JLM([INFO-ONLY])
FJT([INFO-ONLY]) ELF([INFO-ONLY]) ; Sub-Collections: RADC;
Clerk: DLS;

A System for Typesetting Mathematics

Should someone at the ARC look into this further?

A System for Typesetting Mathematics

For those who haven't already seen it, there is an article in the March issue of ACM Communications (Vol 18, #3), by Brian W Kernighan and Lorinda L Cherry of Bell Labs with the above title. I have no idea whether their system could be incorporated into NLS, but they seem to have worked out the details and created it via the compiler-compiler route. I'm sure that Dirk will have to deal with this problem sooner or later in his NSF project. Following is the abstract. 1

This paper describes the design and implementation of a system for typesetting mathematics. The language has been designed to be easy to learn and use by people (for example, secretaries and mathematical typists) who know neither mathematics or typesetting. Experience indicates that the language can be learned in an hour or so, for it has few rules and fewer exceptions. For typical expressions, the size and font changes, positioning, line drawing and the like necessary to print according to mathematical conventions are all done automatically. 1a

The syntax of the language is specified by a small context-free grammar; a compiler-compiler is used to make a compiler that translates this language into typesetting commands. Output may be produced on either a phototypsetter or on a terminal with forward and reverse half-line motions. The system interfaces directly with text formating programs, so mixtures of text and mathematics may be handled simply. 1b

This paper was typeset by the authors using the system described. 1c

A System for Typesetting Mathematics

(J32101) 14-MAR-75 14:09;;;; Title: Author(s): Duane L. Stone/DLS; Distribution: /DPCS([INFO-ONLY]) KWAC([INFO-ONLY]) EJK([INFO-ONLY]) JLM([INFO-ONLY]) FJT([INFO-ONLY]) RDK([INFO-ONLY]) ARB([INFO-ONLY]) RJC([INFO-ONLY]) ; Sub-Collections: RADC DPCS KWAC; Clerk: DLS;

JMB 16-MAR-75 16:50 32102

USER SERVICES REPORT: COURSE FOR USERS OF SRI SLOT: AT SRI-Washington

1. Two hours training given by JMB on Monday 3-MAR-75 (2 person-hours) 1

2. User: Maria SCOTT 2

3. COURSE: 3

TNLS Basic course: completed 3a

NOTE that the major new material covered is Sendmail message sending 3a1

4. DISCUSSION: 4

Two more hours of training for Scott is scheduled for March 13 at 1 p.m. 4a

Interface of user's development/Applications/Architect & Design function: 4b

My training of Maria Scott should be coordinated with Bertrand & O'Keefe (who, I understand, is doing the designing) & Applications people to match the readiness and the demands of the application being designed for her work. 4b1

As I understand what will be required of her, Maria Scott will need instruction in file structure and database capabilities, including statement names and content analysis, before she is ready to work on files which are highly structured for information retrieval. 4c

JMB 16-MAR-75 16:50 32102

USER SERVICES REPORT: COURSE FOR USERS OF SRI SLOT: AT SRI-Washington

(J32102) 16-MAR-75 16:50;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /JMB([INFO-ONLY]) RH([INFO-ONLY]) SGR([INFO-ONLY]) SLJ([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) PWO([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JMB;

JMB 16-MAR-75 18:24 32103

USER SERVICES REPORT: COURSE FOR USERS OF SRI SLOT: AT SRI-Washington

1, Two hours training given by JMB on Thursday 13-MAR-75 [2 person-hours] 1

2, User: Maria SCOTT 2

3, Material: 3

Started second course "Structure & Viewing" only as related to their application, and consisted of the following material: 3a

File Structure: 3a1

STRUCTURE = Statement/Brranch/Group/Plex 3a1a

Relationships of those structures--up, down, level, source, substatement, level represented by statement number 3a1a1

How to address one of those STRUCTURES 3a1a2

Print commands 3a2

Print STRUCTURE 3a2a

Linefeed 3a2b

Viewspecs 3a3

Show Viewspecs 3a3a

set Viewspecs 3a3b

b,c,d,r,s,t,w,x,C,D 3a3c

statement names 3a4

(in parens) 3a4a

can address stateemnt by its name 3a4b

turn off/on for printing 3a4c

JMB 16-MAR-75 18:24 32103

USER SERVICES REPORT: COURSE FOR USERS OF SRI SLOT: AT SRI-Washington

(J32103) 16-MAR-75 18:24;;;; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /JMB([INFO-ONLY]) RH([INFO-ONLY]) SGR([INFO-ONLY]) SLJ([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) PWO([INFO-ONLY]) ;
Sub-Collections: SRI-ARC; Clerk: JMB;

JMB 16-MAR-75 19:05 32104

USER DEVELOPMENT REPORT: COURSE AT NSRDC-Washington area on March 5-6, 1975

1. 5-MAR-75 & 6-MAR-75--2 person-days by JMB with RH's assistance 1

2. Users in course: 2

Joan S. Bowden 2a

Barbara Davis 2b

L. Kenton Meals (Kent) 2c

L.M. Culpepper (Martin) 2d

Tom R. Rhodes 2e

Rita Shore [She has already had a good deal of exposure to TNLS, and a little DNLS, but attended the class to fill in holes in her knowledge.] 2f

George Gluck 2g

Frank BRIGNOLI was also contacted for any problems he might have, but he did not attend course. He requested some help with DNLS, but we had trouble accessing the tips, and DNLS itself, at that time. He has requested a half-day of DNLS instruction for those who are already users, tentatively scheduled during the week of 7-APR. 2h

3. COURSE: 3

We finished the TNLS Basic course 3a

We covered the following material that's not in the Basic course outline: 3b

A: "TYPEIN"=s
A: 'c
A: 'c=2s etc. 3b1

Sendmail: Show Record (for Ident) ,LASTNAME
" ,BEGINLASTNAME... 3b2

What a journal document is 3b3

"YOU HAVE JOURNAL MAIL" & "YOU HAVE A MESSAGE" 3b4

author branch for sendmail delivery 3b5

USER DEVELOPMENT REPORT: COURSE AT NSRDC-Washington area on March 5-6, 1975

Reading SNDMSGs: 3b6

mes<esc> in Tenex--for unread messages 3b6a

message.txt file; for reading old messages: Tenex's copy command with message.txt 3b6b

comparisons of SNDMSG & Sendmail: 3b7

permanence, length, time of delivery, ability to deliver already edited files or statements, place of delivery, copies delivered, group distribution, distribution to non-NLS users. 3b7a

How to break a link: bye or br<ESC> 3b8

Comparisons of: CTRL-C & Continue
Quit Nls & Continue
Goto Tenex & Quit
For: when you can do it, cases in which you can't go back to NLS, whether you can log out from Tenex 3b9

Period command = alternative to / 3b10

/ in an address 3b11

A: directory, filename, infileaddress
where infileaddress is any combination of address elements they have learned, not just statement number 3b12

defaults for address fields 3b13

? in Help command 3b14

Types of files 3b15

extensions .NLS; .txt; .copy; 3b15a

files you create and files created for you; 3b15b

What to do about BAD files 3b16

JMB 16-MAR-75 19:05 32104

USER DEVELOPMENT REPORT: COURSE AT NSRDC-Washington area on March 5-6, 1975

(J32104) 16-MAR-75 19:05;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /JMB([INFO-ONLY]) RH([INFO-ONLY]) SGR([INFO-ONLY]) SLJ([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY]) ; Sub-Collections: SRI-ARC; Clerk: JMB;

DLS 17-MAR-75 06:32 32105

FEB STATS---Sorted by Connect Time

USE OF OFFICE-1, BY ORGANIZATION 1

	Week Ending	CPU (hrs)	Connect (hrs)	2
Week ending	22-FEB-75	22.58	1241.59	3
HUDSON (320)	22-FEB-75	.00	.05	3a
ARC-MGT (380)	22-FEB-75	.00	.32	3b
CONSULTANTS (90)	22-FEB-75	.01	.85	3c
ARC-APP1 (360)	22-FEB-75	.09	2.02	3d
MIT-SEISMIC (820)	22-FEB-75	.21	4.52	3e
NICGUEST (840)	22-FEB-75	.20	6.26	3f
ETS (340)	22-FEB-75	.09	12.38	3g
ARPA-NSW (880)	22-FEB-75	.33	21.18	3h
ARC-UTIL (30)	22-FEB-75	1.10	24.80	3i
SRI (700)	22-FEB-75	.40	26.19	3j
NSA (900)	22-FEB-75	.89	42.75	3k
NSRDC (200)	22-FEB-75	1.53	61.56	3l
BELL (500)	22-FEB-75	5.43	62.85	3m
ARPA (800)	22-FEB-75	1.11	72.94	3n
BRL (600)	22-FEB-75	2.04	94.59	3o
RADC (400)	22-FEB-75	3.96	164.76	3p
TYMSHARE (20)	22-FEB-75	1.61	218.73	3q
SYSTEM (10)	22-FEB-75	3.37	406.79	3r

FEB STATS---Sorted by Connect Time

Week ending	15-FEB-75	31,63	1635,71	4
ARC-MGT (380)	15-FEB-75	,01	,27	4a
CONSULTANTS (90)	15-FEB-75	,02	1,08	4b
HUDSON (320)	15-FEB-75	,05	3,17	4c
NICGUEST (840)	15-FEB-75	,15	5,21	4d
ARC-APPL (360)	15-FEB-75	,20	6,96	4e
MIT-SEISMIC (820)	15-FEB-75	,55	13,36	4f
ETS (340)	15-FEB-75	,77	23,88	4g
NSA (900)	15-FEB-75	,57	30,09	4h
SRI (700)	15-FEB-75	1,22	34,85	4i
NSRDC (200)	15-FEB-75	1,08	52,22	4j
ARPA-NSW (880)	15-FEB-75	,56	56,50	4k
BELL (500)	15-FEB-75	5,54	62,24	4l
BRL (600)	15-FEB-75	2,10	108,76	4m
ARC-UTIL (30)	15-FEB-75	3,16	110,28	4n
ARPA (800)	15-FEB-75	2,03	118,57	4o
RADC (400)	15-FEB-75	3,98	188,68	4p
TYMSHARE (20)	15-FEB-75	4,41	253,83	4q
SYSTEM (10)	15-FEB-75	5,23	565,76	4r

FEB STATS---Sorted by Connect Time

Week ending	8-FEB-75	30,48	1472,43	5
AFAA (440)	8-FEB-75	,00	,00	5a
ARC-MGT (380)	8-FEB-75	,00	,00	5b
CONSULTANTS (90)	8-FEB-75	,04	1,34	5c
HUDSON (320)	8-FEB-75	,07	3,30	5d
NICGUEST (840)	8-FEB-75	,19	5,82	5e
MIT-SEISMIC (820)	8-FEB-75	,27	7,36	5f
ARPA-NSW (880)	8-FEB-75	,20	12,00	5g
ARC-APPL (360)	8-FEB-75	,67	17,22	5h
ETS (340)	8-FEB-75	,86	30,96	5i
NSA (900)	8-FEB-75	1,14	38,27	5j
SRI (700)	8-FEB-75	1,74	43,86	5k
NSRDC (200)	8-FEB-75	1,27	57,90	5l
BELL (500)	8-FEB-75	1,02	81,79	5m
ARC-UTIL (30)	8-FEB-75	2,29	93,27	5n
BRL (600)	8-FEB-75	2,10	110,11	5o
ARPA (800)	8-FEB-75	2,00	111,16	5p
RADC (400)	8-FEB-75	5,47	136,06	5q
TYMSHARE (20)	8-FEB-75	7,19	306,41	5r
SYSTEM (10)	8-FEB-75	3,96	415,60	5s

FEB STATS---Sorted by Connect Time

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Week ending	1-FEB-75	23,86	1619,60	6
AFAA (440)	1-FEB-75	,00	,00	6a
ARC-MGT (380)	1-FEB-75	,00	,00	6b
ENERGY (70)	1-FEB-75	,00	,49	6c
ARPA-NSW (880)	1-FEB-75	,08	5,27	6d
ARC-APPL (360)	1-FEB-75	,31	5,53	6e
MIT-SEISMIC (820)	1-FEB-75	,14	7,43	6f
NICGUEST (840)	1-FEB-75	,19	9,06	6g
HUDSON (320)	1-FEB-75	,35	11,84	6h
ETS (340)	1-FEB-75	,52	26,92	6i
SRI (700)	1-FEB-75	1,11	28,46	6j
NSRDC (200)	1-FEB-75	,57	32,69	6k
NSA (900)	1-FEB-75	1,87	70,95	6l
BELL (500)	1-FEB-75	1,84	87,27	6m
ARC-UTIL (30)	1-FEB-75	3,00	114,07	6n
BRL (600)	1-FEB-75	1,47	128,55	6o
RADC (400)	1-FEB-75	3,22	149,30	6p
ARPA (800)	1-FEB-75	1,86	159,32	6q
TYMSHARE (20)	1-FEB-75	3,87	344,47	6r
SYSTEM (10)	1-FEB-75	3,46	437,98	6s

FEB STATS---Sorted by Connect Time

USE OF OFFICE-1, BY RADC 7

	Week Ending	CPU (hrs)	Connect (hrs)	8
RADC (400)	22-FEB-75	3.96	164.76	9
NELSON	22-FEB-75	.00	.04	9a
WWMCCS	22-FEB-75	.00	.11	9b
LORETO	22-FEB-75	.01	.34	9c
BARNUM	22-FEB-75	.01	.37	9d
RWALKER	22-FEB-75	.03	.71	9e
STINSON	22-FEB-75	.03	1.57	9f
MCNAMARA	22-FEB-75	.03	2.40	9g
STONE	22-FEB-75	.15	3.12	9h
KRUTZ	22-FEB-75	.06	3.30	9i
PATTERSON	22-FEB-75	.06	3.31	9j
BERGSTROM	22-FEB-75	.12	4.51	9k
WINGFIELD	22-FEB-75	.07	4.82	9l
LAWRENCE	22-FEB-75	.15	5.47	9m
CAVANO	22-FEB-75	.13	5.92	9n
LIUZZI	22-FEB-75	.07	5.95	9o
HILBING	22-FEB-75	.15	7.34	9p
LAFORGE	22-FEB-75	.27	11.88	9q
CARRIER	22-FEB-75	.49	15.84	9r
RZEPKA	22-FEB-75	.38	17.72	9s
KENNEDY	22-FEB-75	.67	18.95	9t
TOMAINI	22-FEB-75	.23	21.80	9u

FEB STATS---Sorted by Connect Time

PANARA	22-FEB-75	,86	29,28	9v

FEB STATS---Sorted by Connect Time

DLS 17-MAR-75 06:32 32105

RADC (400)	15-FEB-75	3,98	188,68	10
NELSON	15-FEB-75	,00	,03	10a
SLIWA	15-FEB-75	,01	,17	10b
IUORNO	15-FEB-75	,01	,32	10c
BARNUM	15-FEB-75	,00	,49	10d
STINSON	15-FEB-75	,02	,51	10e
MCNAMARA	15-FEB-75	,01	,55	10f
RZEPKA	15-FEB-75	,01	,80	10g
WWMCCS	15-FEB-75	,02	1,68	10h
LORETO	15-FEB-75	,01	1,82	10i
HILBING	15-FEB-75	,05	3,59	10j
TOMAINI	15-FEB-75	,18	6,99	10k
WINGFIELD	15-FEB-75	,11	7,03	10l
PATTERSON	15-FEB-75	,08	7,69	10m
LAFORGE	15-FEB-75	,13	7,71	10n
CAVANO	15-FEB-75	,21	8,24	10o
BERGSTROM	15-FEB-75	,29	8,92	10p
LIUZZI	15-FEB-75	,10	9,69	10q
CARRIER	15-FEB-75	,38	12,69	10r
KENNEDY	15-FEB-75	,56	18,53	10s
KRUTZ	15-FEB-75	,22	19,12	10t
PANARA	15-FEB-75	,40	19,23	10u
STONE	15-FEB-75	,71	24,78	10v
LAWRENCE	15-FEB-75	,47	28,10	10w

FEB STATS---Sorted by Connect Time

RADC (400)	8-FEB-75	5,47	136,06	11
LORETO	8-FEB-75	,00	,08	11a
NELSON	8-FEB-75	,01	,32	11b
RWALKER	8-FEB-75	,00	,37	11c
IUORNO	8-FEB-75	,01	,50	11d
LAFORGE	8-FEB-75	,02	,78	11e
SLIWA	8-FEB-75	,02	,87	11f
LAWRENCE	8-FEB-75	,01	,97	11g
STINSON	8-FEB-75	,02	1,12	11h
HILBING	8-FEB-75	,04	1,51	11i
LIUZZI	8-FEB-75	,01	1,58	11j
WWMCCS	8-FEB-75	,03	1,71	11k
MCNAMARA	8-FEB-75	,05	2,34	11l
PATTERSON	8-FEB-75	,05	2,84	11m
WINGFIELD	8-FEB-75	,07	3,93	11n
BERGSTROM	8-FEB-75	,20	4,37	11o
CARRIER	8-FEB-75	,24	8,36	11p
CAVANO	8-FEB-75	,34	11,29	11q
KRUTZ	8-FEB-75	,21	11,31	11r
STONE	8-FEB-75	2,24	18,35	11s
KENNEDY	8-FEB-75	,76	19,56	11t
TOMAINI	8-FEB-75	,53	21,23	11u
PANARA	8-FEB-75	,61	22,67	11v

FEB STATS---Sorted by Connect Time DLS 17-MAR-75 06:32 32105

RADC (400)	1-FEB-75	3,22	149,30	12
BARNUM	1-FEB-75	,00	,09	12a
NELSON	1-FEB-75	,01	,15	12b
SLIWA	1-FEB-75	,00	,15	12c
IUORNO	1-FEB-75	,01	,21	12d
RWALKER	1-FEB-75	,00	,23	12e
LAWRENCE	1-FEB-75	,00	,33	12f
LORETO	1-FEB-75	,02	,50	12g
STINSON	1-FEB-75	,01	,59	12h
LAFORGE	1-FEB-75	,01	,74	12i
WWMCCS	1-FEB-75	,01	1,05	12j
MCNAMARA	1-FEB-75	,03	1,81	12k
HILBING	1-FEB-75	,06	2,46	12l
LIUZZI	1-FEB-75	,09	3,89	12m
CAVANO	1-FEB-75	,17	5,99	12n
PATTERSON	1-FEB-75	,06	7,65	12o
KENNEDY	1-FEB-75	,16	7,79	12p
BERGSTROM	1-FEB-75	,32	8,99	12q
PANARA	1-FEB-75	,23	9,13	12r
KRUTZ	1-FEB-75	,17	11,34	12s
WINGFIELD	1-FEB-75	,20	13,27	12t
CARRIER	1-FEB-75	,36	15,18	12u
STONE	1-FEB-75	,64	21,00	12v
TOMAINI	1-FEB-75	,66	36,76	12w
RADC 1-FEB-75 thru 22-FEB-75		16,63	638,80 FEB TOTALS	13

DLS 17-MAR-75 06:32 32105

FEB STATS---sorted by Connect Time

(J32105) 17-MAR-75 06:32;;;; Title: Author(s): Duane L. Stone/DLS; Distribution: /EJK([INFO-ONLY]) ; Sub-Collections: RADC; Clerk: DLS;

JMB 17-MAR-75 09:06 32106

USER DEVELOPMENT REPORT: COURSE AT Pentagon for ARPA-NSW slot (LGY group) 11-MAR-75

1. 11-MAR-75 - by JMB [1 person-day] 1

2. Persons attending: 2

Bob MORTENSON had previous training, initiated this course for his LGY group, and attended most sessions. Note that LGY is the group responsible for maintaining and printing the series of the Air Force manuals. 2a

Actual users who practiced, etc: 2b

Capt. Raymond L. HERZOG 2b1

Linda Kankey [I'm not sure that Linda will be a user; she is the person who is typing the manuals into a different system from which they will be loaded into NLS from tape] 2b2

Maj. Garrett A. NORRIS 2b3

These people did not intend to be users, but attended various sessions: 2c

Lt.Col Richard J. Mustico 2c1

Col. Rudolph F. D'Urbano 2c2

Col. Billy G. Backues 2c3

Lt.Col. Jerry Johnson 2c4

3. COURSE: 3

Basic TNLS-8 Course 3a

COVERED: 3a1

Logging on, getting NLS, files, origin statement, Create File, Show Directory, Load File, Insert Statement, Insert Text at end of statement, CTRL-O, Print commands, Substitute, Delete & Copy & Move Statement, A: "TYPEIN", Delete File, Update File, CTRL-V CR 3a1a

SKIPPED: 3a2

Groupstat, CTRL-C & Continue, Logout, CTRL-E, initials file, Sendmail, SNDMSG, / as command & address elemennt, Jump to Address, A: ,t, combinations of addresses, addressing across files and directories, Trouble-shooting & Help 3a2a

USER DEVELOPMENT REPORT: COURSE AT Pentagon for ARPA-NSW slot (LGY group) 11-MAR-75

Material discussed that's not in course outline: 3b

TIP's @ c CR command - useful to start over when @ L 43 CR takes too long to get response 3b1

Set Viewspecs m,y,n 3b2

The Journal facility 3b3

Info you type into your files vs. text that gets in there some other way:
tape read-in, mail, copy, origin statements, etc. 3b4

4. ISSUE: WHO HAS BEEN SELECTED BY THEIR ORGANIZATION TO BE IN THE CLASS 4

The people in this class were selected by one member of the first group that had been trained: some to make them feel comfortable with the new methods in the organization, but who were never going to use NLS themselves, only two people--naive about systems--who were going to use the system, one programmer type who wasn't interested in using NLS but just technically curious--brought in because he was the only person with a computer backround, and the one person who had already taken the first two courses. 4a

I felt conflicting pressures concerning the goals of my time with them. Some of the people needed more of a briefing about how to make use of trained people, general policy and design effects of NLS, a general overview of NLS's capabilities, and technical questions about the system's structure. Other people had come to learn and practice NLS, hopefully step-by-step, without too much esoterica, and only swallowing the NLS capabilities covered in the first course. To a great extent, these needs were incompatible uses of the time allotted. 4b

Can any of you offer any advice on how to deal with such situations? 4c

5. DISCUSSION: COURSE MATERIAL 5

For various reasons, this had to be mainly a lecture course, with only one long period for people to practice at terminals. I decided to try to use the Sample Session I handout (developed by SGR) that goes with ARPA's first course. This starts with a sheet of handwritten copy--a memo--and the remainder is an annotated copy of printout of the process of putting it online, editing it, printing it, and going through second draft which includes inserting blocks of text at various places in statements. 5a

JMB 17-MAR-75 09:06 32106

USER DEVELOPMENT REPORT: COURSE AT Pentagon for ARPA-NSW slot (LGY group) 11-MAR-75

This attempt was very successful--much improvement over past situations where users didn't have a chance to try commands as I was presenting them. I was able to cover the material much faster (though the time saved went into other unforeseen discussions), with less confusion for people who couldn't otherwise picture what would be going on. 5b

Also, I did not get the complaints I usually get when it's time to practice inserting statements, "I can't think of anything to compose." Most people want to type something from a page, so most actually did type that memo. 5c

JMB 17-MAR-75 09:06 32106

USER DEVELOPMENT REPORT: COURSE AT Pentagon for ARPA-NSW slot (LGY group) 11-MAR-75

(J32106) 17-MAR-75 09:06;;;; Title: Author(s): Jeanne M. Beck/JMB; Distribution: /JMB([INFO-ONLY]) RH([INFO-ONLY]) SGR([INFO-ONLY]) SLJ([INFO-ONLY]) JCN([INFO-ONLY]) RLL([INFO-ONLY]) DCE([INFO-ONLY]) JHB([INFO-ONLY] especially section 5) ; Sub-Collections: SRI-ARC; Clerk: JMB;

FGB 17-MAR-75 10:03 32107

hi, there

this silly thing still doesn't work
Greg

1

FGB 17-MAR-75 10:03 32107

hi, there

(J32107) 17-MAR-75 10:03;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /FGB([ACTION]) FGB([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: FGB;

RA3Y 17-MAR-75 14:13 32108

test

this is the sendmail test

test

TITLE: test
COMMENT: this is the sendmail test
AUTHOR(S):RA3Y
NUMBER:32108

DISTRIBUTE FOR ACTION TO:ra3y
DISTRIBUTE FOR INFO-ONLY TO:
SUBCOLLECTION(S):
KEYWORD(S):
HANDLING INSTRUCTION:
RECORDING INSTRUCTION:
OFFLINE ITEM -- LOCATED AT:
RFC NUMBER:
OBSOLETES ITEM NUMBER(S):
ACCESS STATUS: pr
UPDATE TO ITEM NUMBER(S):
INSERT LINK TO FOLLOW:
FORWARD ITEM NUMBER:
MESSAGE:
BRANCH AT:
PLEX AT:
GROUP AT:
FILE:
SEND THE MAIL, 1

2

(author) Journal documents authored (oldauthor) 3

RA3Y JCN 14-MAR-75 09:30 32097
Office-1 Use by ARPA-NSW in February 1975
Location: (IJOURNAL, 32097, 1:w)
*****Note: Author Copy***** 3a

RA3Y JCN 13-MAR-75 14:56 32086
Office-1 Use by NICGUEST in February 1975
Location: (IJOURNAL, 32086, 1:w)
*****Note: Author Copy***** 3b

RA3Y JCN 13-MAR-75 14:43 32084
Office-1 Use by MIT-SEISMIC in February 1975
Location: (IJOURNAL, 32084, 1:w)
*****Note: Author Copy***** 3c

RA3Y JCN 13-MAR-75 10:11 32079
Office-1 Use by ARPA in February 1975

test

Location: (IJOURNAL, 32079, 1:w)
*****Note: Author Copy*****

3d

RA3Y JCN 13-MAR-75 09:33 32077
Office-1 Use by BRL in February 1975
Location: (IJOURNAL, 32077, 1:w)
*****Note: Author Copy*****

3e

RA3Y JCN 13-MAR-75 09:04 32075
Office-1 Use by Bell in February 1975
Location: (IJOURNAL, 32075, 1:w)
*****Note: Author Copy*****

3f

RA3Y JCN 13-MAR-75 08:45 32074
Office-1 Use by RADC in February 1975
Location: (IJOURNAL, 32074, 1:w)
*****Note: Author Copy*****

3g

RA3Y JCN 13-MAR-75 08:23 32071
Office-1 Use by ARC-MGT in February 1975
Location: (IJOURNAL, 32071, 1:w)
*****Note: Author Copy*****

3h

RA3Y 13-MAR-75 07:59 32069
Two January Use Reports - Why?
Location: (IJOURNAL, 32069, 1:w)
*****Note: Author Copy*****

3i

Office-1 Use in February 1975

3j

RA3Y JCN 12-MAR-75 16:00 32061
Office-1 Use by HUDSON in February 1975
Location: (IJOURNAL, 32061, 1:w)
*****Note: Author Copy*****

3j1

RA3Y JCN 12-MAR-75 15:50 32060
Office-1 Use by NSRDC in February 1975
Location: (IJOURNAL, 32060, 1:w)
*****Note: Author Copy*****

3j2

test

RA3Y JCN 12-MAR-75 15:35 32059
Office-1 Use by SRI in February 1975
Location: (IJOURNAL, 32059, 1:w)
*****Note: Author Copy*****

3j3

RA3Y JCN 12-MAR-75 19:34 32065
Office-1 Use by ARC-APPL in February 1975
Location: (IJOURNAL, 32065, 1:w)
*****Note: Author Copy*****

3j4

RA3Y 12-MAR-75 19:10 32064
Misnaming of February Use Report to ETS
Message: The February Use Report <IJOURNAL, 32062, 1:w> was mislabeled a January Use Report in the message we sent to you on March 12, 1975 (16:26).
*****Note: Author Copy*****

3j5

RA3Y JCN 12-MAR-75 16:26 32062
Office-1 Use by ETS in February 1975
Location: (IJOURNAL, 32062, 1:w)
*****Note: Author Copy*****

3j6

RA3Y 12-MAR-75 15:21 32058
The January Report
Message: Sorry about the confusion. Yes, I was trying to solve the wrap-around problem in TNLS. I tried to kill the first report, but I obviously failed. Yes, the February report is in the mill. It should come quickly, now that I am getting familiar with the system. By Monday next. One copy this time. Thanks for the message.
*****Note: Author Copy*****

3k

RA3Y 12-MAR-75 10:43 32055
Should BELL talk to DDSI for their COM work?
Location: (IJOURNAL, 32055, 1:w)
*****Note: Author Copy*****

31

Office-1 Reports, January 1975

3m

NSRDC in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32042, 1:w)

3m1

test

HUDSON in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32045, 1:w)

3m2

ETS in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32044, 1:w)

3m3

ARC-APPL in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32048, 1:w)

3m4

ARC-MGT January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32050, 1:w)

3m5

RADC in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32043, 1:w)

3m6

BELL in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32046, 1:w)

3m7

BRL in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32037, 1:w)

3m8

SRI in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32041, 1:w)

3m9

ARPA in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32040, 1:w)

3m10

MIT-SEISMIC in January 1975
RA3Y JCN 11-MAR-75

test

RA3Y 17-MAR-75 14:13 32108

Location: (IJOURNAL, 32039, 1:w)

3m11

NICGUEST in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32047, 1:w)

3m12

ARPA-NSW in January 1975
RA3Y JCN 11-MAR-75
Office-1 Usage by ARPA-NSW in January 1975
Location: (IJOURNAL, 32030, 1:w)

3m13

NSA in January 1975
RA3Y JCN 11-MAR-75
Location: (IJOURNAL, 32031, 1:w)

3m14

RA3Y 11-MAR-75 08:04 32026

Message: Hi, Inez, Tracking down information on DDSI has been a bit more difficult than expected. Sorry for the delay. Latest DDSI quotes are found in <MJOURNAL,23549,1:w>. More to come on your specific questions.
*****Note: Author Copy*****

3n

RA3Y 1-MAR-75 09:33 31927
update of computer conferencing chapter
Location: (HJOURNAL, 31927, 1:w)
*****Note: Author Copy*****

3o

Bad January Use Reports for O--: unfit or TNLS

3p

RA3Y JCN 28-FEB-75 09:03 31920
January Office-1 Usage Report to Bell-Canada

3p1

RA3Y JCN 28-FEB-75 08:27 31919
January Office-1 Usage Report to RADC

3p2

RA3Y JCN 27-FEB-75 20:09 31917
Office-1 Usage Report for ETS (Anatasio) January 1975

3p3

RA3Y JCN 27-FEB-75 19:51 31916

RA3Y 17-MAR-75 14:13 32108

test

Office-1 Usage Report for HUDSON January 1975

3p4

RA3Y JCN 27-FEB-75 19:37 31915
Office-1 Usage Report for NSRDC January 1975

3p5

RA3Y 27-FEB-75 16:07 31914
notes on computer conferencing
Location: (HJOURNAL, 31914, 1:W)
*****Note: Author Copy*****

3q

Comments: here is an outline of a paper I am writing on computer conferencing. It is basically for Roger's project. The paper is all typed, but it is not all entered online on the computer. I'll updatY you from time to time in the future

3q1

(Journal) Journal documents (most recent first) (oldmail)

4

DCE 13-MAR-75 00:51 25558
Announcement -- all-ARC meeting next Monday
Message: There will be an all-ARC meeting next Monday morning, 17 Mar, at 1000. Dick and Jim will fill us in on the ARPA-IPTO contractors' meeting this week (Wed-Fri), and there is much other food for thought that is ready to put on the table. Doug
*****Note: [ACTION] *****

4a

JEW JBP 12-MAR-75 12:05 25556
Reply to Section II of BBN PCP Critique
Location: (IJOURNAL, 25556, 1:W)
*****Note: [INFO-ONLY] *****

4b

DLS 12-MAR-75 12:31 32056
JAN User Stats...Two files
Location: (IJOURNAL, 32056, 1:W)
*****Note: [INFO-ONLY] *****

4c

MAP2 11-MAR-75 21:28 32053
IDENT Request for Special Interest Group on TeleConferencing
Message: Please set up an IDENT "TELECON" for a special interest group on Teleconferencing. It should initially include the following:

MIKE,FGB,JAKE,RAH,RLL,IMM,CKM,RA3Y,MAP2,DAP,SDP,RLR,RMS2,GAS2,DLS, SMT,RPU

test

*****Note: [INFO-ONLY] *****

4d

DVN 8-JUL-74 19:49 23549
Letter from DDSI Giving Latest Prices Including Fiche
Location: (MJOURNAL,23549,1:W)
*****Note: [INFO-ONLY]
(Secondary Distribution Copy from DVN)*****

4e

KEV 7-MAR-75 17:22 25532
dropped line processor characters
Location: (IJOURNAL, 25532, 1:W)
*****Note: [INFO-ONLY] *****

4f

POOH 6-MAR-75 19:21 25527
The Evolving Ever-Changing Emlf Userguide
Location: (IJOURNAL, 25527, 1:W)
*****Note: [INFO-ONLY] *****

4g

Comments: This version of the ELF Userguide is updated as of Friday February 28. It is in the process of being revised and additions and corrections are glady accepted. A new version will be out.....the elf queen

4g1

RLL 6-MAR-75 14:01 25524
Visit to Tymshare re: TYMNET [7 FEB 75
Location: (IJOURNAL, 25524, 1:W)
*****Note: [INFO-ONLY] *****

4h

KIRK 4-MAR-75 19:50 31977
New version of NLS-8
Location: (HJOURNAL, 31977, 1:W)
*****Note: [INFO-ONLY] *****

4i

JBP 27-FEB-75 19:19 25510
RFC Index for 1-JUN-74 to 1-FEB-75
Location: (HJOURNAL, 25510, 1:W)
*****Note: [INFO-ONLY] *****

4j

DCE 27-FEB-75 18:12 25507
ARC Planning Notes from 3 Nov 74
Location: (HJOURNAL, 25507, 1:W)

test

*****Note: [INFO-ONLY] *****
4k

Comments: For the record; un-edited; as used in planning dicussions
4k1

DCE JCN 27-FEB-75 17:49 25506
An ARC IR&D Proposal: AKW Technology Transfer Techniques
Location: (HJOURNAL, 25506, 1:W)
*****Note: [INFO-ONLY] *****
4l

Comments: Submitted and accepted in Jan 75 for an SRI IR&D Program
4l1

SGR 27-FEB-75 09:20 25502
User Services March Training Schedule
Location: (HJOURNAL, 25502, 1:W)
*****Note: [INFO-ONLY] *****
4m

NDM 26-FEB-75 18:14 25498
How To Recreate the Display in L10
Location: (HJOURNAL, 25498, 1:W)
*****Note: [INFO-ONLY] *****
4n

RWW 26-FEB-75 12:47 25495
STANDARD NSW FRONTEND CONTROL FUNCTIONS
Location: (HJOURNAL, 25495, 1:W)
*****Note: [INFO-ONLY] *****
4o

JHB 25-FEB-75 22:21 25478
THE BASIC TNLS-8 COURSE OUTLINE
Location: (HJOURNAL, 25478, 1:W)
4p

enable a user to enter, edit, and 'mail' text.
4p1

JHB 25-FEB-75 21:51 25477
TNLS COURSE OUTLINE #2: INTRODUCTION TO STRUCTURE AND VIEWING
Location: (HJOURNAL, 25477, 1:W)
4q

NLS structure (hierarchical) and special tools for viewing structured information ('view specs'). It is derived from the TNLS Courses master file which contains 5 graduated course

test

levels (by filtering on statement name keys which are then turned off for printing). 4q1

JBP 24-FEB-75 22:35 25453
Journal Citations vs. ARPA Network Standards
M ARPA network standard for message headers for reference during the discussion of new journal headers. RFC 561 <,18516,>. --jon. 4r

RLL 24-FEB-75 15:04 25451
'Final' citation template with complete discussion.
Location: (HJOURNAL, 25451, 1:W) 4s

RLL 24-FEB-75 14:44 25450
Contact report with Tymshare on Tymnet, 7 Feb 75
Location: (HJOURNAL, 25450, 1:W)
*****Note: [ACTION] ***** 4t

RWW 19-FEB-75 09:47 25423
New Charge Number for NSW Project from 9229! to 4051 4u

JCN 16-FEB-75 15:23 25408
ARC Applications Organization and Staff - February 1975
Location: (HJOURNAL, 25408, 1:W)
*****Note: [INFO-ONLY] ***** 4v

JHB 10-FEB-75 12:43 25321
What To Do About Commands Not Implemted Or Prohibitively Bugged , re. 31806,
Location: (HJOURNAL, 25321, 1:W)
*****Note: [ACTION] ***** 4w

(oldauthor) old messages sent out 5

JCN RA3Y 9-FEB-75 13:00 25320
Office-1 User and System Accounts and Allocations
Location: (HJOURNAL, 25320, 1:W)
*****Note: Author Copy***** 5a

RA3Y 30-JAN-75 08:12 31742
Prof. Samuelson's Visit
Message: I would be interested in meeting Professor Samuelson

if he comes to ARC. In addition to working at SRI, I am a graduate student in communications at Stanford, and I am interested in NLS's capacity as an information retireval system or front end.
*****Note: Author Copy*****

5b

5c

(oldmail) file to hold old messages

6

DVN RWW POOH 21-JAN-75 12:45 25158
Maintenance of NLS-8 Documentation
Location: (HJOURNAL, 25158, 1:W)
*****Note: [INFO-ONLY] *****

6a

DSM 21-JAN-75 23:36 25173
Sysgd Lives!
Message: The file (nls,sysgd,) has been recreated. It contains a named statement for each NLS procedure. This statement contains a link pointing to the current source code for the procedure and gives a brief description of the procedure's arguements and function. It can be used as your "external names link file" which allows you to "Jump (to) Name External" on any nls procedure name.
*****Note: [INFO-ONLY] *****

6b

RWW 22-JAN-75 14:21 25181
SRI-ARC Mid Point NSW Status Report
Location: (HJOURNAL, 25181, 1:W)
*****Note: [INFO-ONLY] *****

6c

JBP 29-JAN-75 18:16 25247
NSW Version 2 Changes
Location: (HJOURNAL, 25247, 1:W)
*****Note: [INFO-ONLY] *****

6d

This document records the ways in which the NSW implementation is diverging from its Version 2 documentation. It is a dynamic document of primary interest to implementers of NSW and code which must run in a NSW environment.

6d1

Comments: This is available in output processed form as <NSW-Sources>NSWV2CHANGES.PRT for SRI-ARCs Line Printer and as <NLS>NSWV2CHANGES.TXT for access by network users.

6d2

test

RLL 10-JAN-75 11:29 25058
Contact report: Telenet Communications Corp. / Barry Wessler
Location: (HJOURNAL,25058,1:w)
*****Note: [INFO-ONLY]
(Secondary Distribution Copy from RLL)*****
6e

JHB 20-JAN-75 10:16 25151
USER DEVELOPMENT REPORT: TRIP TO THE EAST COAST, DEC, 74
Location: (HJOURNAL, 25151, 1:w)
*****Note: [INFO-ONLY] *****
6f

DCE 21-JAN-75 18:18 25166
Visit Log: Larry MacKechnie, Australian Post Office, 21 Jan 75
Location: (HJOURNAL, 25166, 1:w)
*****Note: [INFO-ONLY] *****
6g

(files) for old mail 7

(computer service) 7a

(nsw) 7b

(training) 7c

DIA 6-FEB-75 08:04 25308
Extensions to the L10 Programming Language for the DEC PDP-10 and DEC PDP-11
Location: (HJOURNAL, 25308, 1:w)
*****Note: [INFO-ONLY] *****
7c1

Comments: This document should accompany the L10 Documentation entitled A Programming Laguage for the Augmentation Research Center by W.H. Paxton. Offline copies of both are available in Rm. J2082. 7c1a

JHB 2-FEB-75 23:05 25278
SRI/ARC TNLS COURSE 2: INTRODUCTION TO STRUCTURE AND VIEWING
Location: (HJOURNAL, 25278, 1:w)
*****Note: [INFO-ONLY] *****
7c2

&SRI-ARC 2-FEB-75 14:42 25275
SRI/ARC BASIC TNLS-8 COURSE
Location: (HJOURNAL, 25275, 1:w)

test

*****Note: [INFO-ONLY] *****

7c3

Comments: This is a revised version of the first course in NLS, designed by ARC to be minimally complex and yet contain the commands necessary to enable a user to enter, edit, and 'mail' text. It is intended to be used by ARC trainers in all beginning courses although Architects are welcome if they have to provide their own training. Completion time ranges from 1/2 to 2 days. Printed copies are available from User Development.

7c3a

(users)

7d

(visits)

7e

JHB 7-FEB-75 08:55 31818
VISITLOG, JAN 30, 75, Alex Curran, BNRL in Palo Alto
Location: (HJOURNAL, 31818, 1:w)
*****Note: [INFO-ONLY] *****

7e1

RA3Y 17-MAR-75 14:13 32108

test

(J32108
) 17-MAR-75 14:13;;;; Title: Author(s): Raymond R. Panko/RA3Y;
Distribution: /RA3Y([ACTION]) ; Sub-Collections: SRI-ARC; Clerk:
RA3Y;

RWC 17-MAR-75 13:23 32109

request to change ident info

I can't get on as myself, so could you please change the ident info for jgn to: 1

Name: Noel, J. Gregory 2

Organization: NELC 3

Hardcopy Address: commander, Naval Electronics Laboratory Center
271 Catalina Blvd
San Diego, Calif 92152

Attn: Code 5200, Mr. J. G. Noel 4

RWC 17-MAR-75 13:23 32109

request to change ident info

(J32109) 17-MAR-75 13:23;;;; Title: Author(s): Robert W. Calland/RWC; Distribution: /FEEDBACK([ACTION]) FEEDBACK([ACTION]) JGN([INFO-ONLY]) FGB([INFO-ONLY]) ; Sub-Collections: NIC FEEDBACK; Clerk: RWC; Origin: < NALCON, TEMP,NLS;1, >, 17-MAR-75 13:00 RWC ;;;;####;

FGB 17-MAR-75 15:02 32111

ident for bornstein

Dear frank:

Unless you want me to continue using fgb, I would appreciate your creating an ident for me.

Details are as follows:

Name: Bornstein, Isaac (no middle name/initial)

Organization: NUC or NSRDC

Groups: NSRDC NAVIMP NALCON

Mail addresses: Naval Undersea Center, San Diego, CA 92132

User: NAVIMP

As an added note, the zip for NUC is 92132, not 92152 as you gave for Bob Unger (ident RAU).

tnx

I. Bornstein

NUC

FGB 17-MAR-75 15:02 32111

ident for bornstein

(J32111) 17-MAR-75 15:02;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /FGB([ACTION]) RAU([INFO-ONLY]) FEEDBACK([INFO-ONLY]) ; Sub-Collections: NIC FEEDBACK; Clerk: FGB; Origin: < NALCON, IDENT-FOR-BORNSTEIN.NLS;1, >, 17-MAR-75 14:49 FGB
;;;;####;

JGN 17-MAR-75 18:42 32112

SAILING RESULTS

ALWAYS SUNSHINE AND FAIR SAILING IN SAN DIEGO!! 1

JGN 17-MAR-75 18:42 32112

SAILING RESULTS

(J32112) 17-MAR-75 18:42;;;; Title: Author(s): J. G. Noel/JGN;
Distribution: /JPS([ACTION]) ; Sub-Collections: NIC; Clerk: JGN;

DLS 18-MAR-75 06:54 32113

Phone Call, to George Tompson (SAMTEC)

I talked with George Tompson (8-276-8995), SAMTEC, who works in the Operating Systems Branch under Col Thayer. They are holding a presolicitation conference this week on the Telemetry Information Processing System (TIPS) buy. They expect the RFP to be out by Jul and under contract by next Jan. 1

TIPS is a project to build an integrated telemetry system in the $10-14M cost range. They will be asking the bidders to submit bids under a "design to cost" concept, where off-the-shelf machines, compilers, operating systems etc, will be emphasized. 1a

They have Vols, 1, 5, 6, 7, & 9, of the SP series and are awaiting the rest. He seemed to think that the exhibit they have for the SP part of the effort was "adequate". He has reviewed the ATDOS project and the plan prepared by FEC. His comments were that it was too formalized and costly. He felt that they should just pick a project or two that was on-going and try it with the SP approach. (I believe this reflects their concern with operations and not R&D.) 2

He said that they were looking into LIBRARIAN, PPL and PREFOR which they have on their machine. I relayed to him our most recent letter from IBM, which says that we can have the Program Management Facility (PMF), (developed for NASA at Houston), which meets the functional requirements in Vol 5 of the SP series and can handle FORTRAN, assembly language and soon PREFOR. This looks like the best PSL uncovered yet, since it will collect management data and generate module statistics reports. 2a

ONE OF THE RADC PSL EXPERTS SHOULD LOOK FURTHER INTO THIS, TO SEE WHATS MISSING AND TO CHECK THE ADEQUACY OF THE DOCUMENTATION. 2a1

A problem remains for our desires to set up an experiment. If we are satisfied with just helping them to get started with SP, they will take our help. But if we are still serious about the experimentation aspects of it, there needs to be some clear direction from Col. Thayer to his troops. 3

I set up a tentative visit out there for the 1st week in Apr. We will verify this on Thur 20th. 4

DLS 18-MAR-75 06:54 32113

Phone Call, to George Tompson (SAMTEC)

(J32113) 18-MAR-75 06:54;;;; Title: Author(s): Duane L. Stone/DLS;
Distribution: /JLM([ACTION]) FJT([ACTION]) ARB([ACTION])
RDK([ACTION]) RN2([INFO-ONLY]) DFB([INFO-ONLY]) EJK([
INFO-ONLY]) ; Sub-Collections: RADC; Clerk: DLS;

EJK 18-MAR-75 07:15 32114

Helpful Hint #4 from your Friendly AKW - Screen Splitting on the IMLAC

INSERT EDGE - ON THE IMLAC: (= split the screen) 1

When the IMLAC user wants to view two or more files at the same time, or if he wants to look at two or more different parts of the same file he will need to split the screen. 1a

The commands and the procedures are a little different now and bear review. 1b

The command to use is INSERT EDGE; typing ie gets you the prompt "(perpendicular to) B/C:" This means that the system is waiting for you to bug the edge of the screen (top, bottom, left or right side) where you want the split to originate (the split will be perpendicular to that edge). Some users bug somewhere in the middle, as they used to in the old NLS, but they are taking pot luck. The split will start at the nearest edge, even if the difference is just a fraction of an inch. Thus you might want a vertical split and instead get a horizontal one. 1c

The next point to remember is that after you bug the edge where you want the edge to originate, the system waits for a <ca>. This command accept is important because it performs two functions. In addition to telling the system to go ahead and split the screen, the position of the bug determines where your file will be. Thus if you want a horizontal split with the currently loaded file on the top of the screen, you should type ie, bug the side of the screen at what ever height you want the split to be. Then move the bug to the top of the screen and then give the <ca>. 1d

When you no longer have need for a split screen the command is DELETE EDGE. Type de and bug somewhere near where the edge is. The location of the bug when you give the command accept <ca>, in this case the top or the bottom of the screen, will determine which file will be kept when the edge is deleted and there is only one file left. 1e

EJK 18-MAR-75 07:15 32114

Helpful Hint #4 from your Friendly AKW - Screen Splitting on the IMLAC

(J32114) 18-MAR-75 07:15;;;; Title: Author(s): Edmund J. Kennedy/EJK; Distribution: /RADC([ACTION]) FEED([INFO-ONLY] Just wanted you to see a sample of things I've been sending out) ; Sub-Collections: RADC; Clerk: EJK;

DLS 18-MAR-75 07:56 32115

Summary of Individual Use of Office-1 for FEB

For weekly listings and other organizations use, see the bulletin board in Mac's office.

Summary of Individual Use of Office-1 for FEB

	Month Ending	CPU (hrs)	Connect (hrs)	1
NELSON	22-FEB-75	,02	,54	1a
BARNUM	22-FEB-75	,01	,95	1b
SLIWA	22-FEB-75	,03	1,19	1c
RWALKER	22-FEB-75	,03	1,31	1d
LORETO	22-FEB-75	,04	2,74	1e
STINSON	22-FEB-75	,08	3,79	1f
MCNAMARA	22-FEB-75	,12	7,10	1g
HILBING	22-FEB-75	,30	14,90	1h
RZEPKA	22-FEB-75	,39	18,52	1i
LAFORGE	22-FEB-75	,43	21,11	1j
LIUZZI	22-FEB-75	,27	21,11	1k
PATTERSON	22-FEB-75	,25	21,49	1l
BERGSTROM	22-FEB-75	,93	26,79	1m
WINGFIELD	22-FEB-75	,45	29,05	1n
CAVANO	22-FEB-75	,85	31,44	1o
LAWRENCE	22-FEB-75	,63	34,87	1p
KRUTZ	22-FEB-75	,66	45,07	1q
CARRIER	22-FEB-75	1,47	52,07	1r
KENNEDY	22-FEB-75	2,15	64,83	1s
STONE	22-FEB-75	3,74	67,25	1t
TOMAINI	22-FEB-75	1,60	86,78	1u
PANARA	22-FEB-75	2,10	92,67	1v
		-----	------	1w

DLS 18-MAR-75 07:56 32115

Summary of Individual Use of Office-1 for FEB

RADC TOTALS	22-FEB-75	16.55	645.57	1x

DLS 18-MAR-75 07:56 32115

Summary of Individual Use of Office-1 for FEB

(J32115) 18-MAR-75 07:56;;;; Title: Author(s): Duane L. Stone/DLS;
Distribution: /RADC([INFO-ONLY]) ; Sub-Collections: RADC; Clerk:
DLS;

JBp 15-MAY-75 21:58 32116
T. H. Myer
D. A. Henderson

Network Working Group
RFC #680
NIC #32116
April 30, 1975

1

Message Transmission Protocol

Theodore H. Myer

D. Austin Henderson

BBN-TENEX

1a

This document defines a number of message fields beyond those discussed in RFC 561. The overall message format is compatible with RFC 561; it makes extensive use of the miscellaneous fields defined within RFC 561. The purpose of this document is to establish ARPANET standards with regard to the syntax and semantics for these additional fields. It is fully expected that all fields discussed herein will not be automatically processed by all Message Servers; however, the standard is necessary so that sites which wish to make use of these fields have a standard to work with. 2

This document attempts to tread the narrow line between features for human processing and features for machine processing. The general feeling is that the fields listed are useful to people even if automatic processing is not supplied. In most cases, machine-readable notations have been enclosed in angle brackets (<>) to allow easy non-ambiguous ways for automatic processes to know whether and where to look in any field. The entire specification has been made excessively general to allow for experimentation. Future documents based on experience will try to be more specific. This is simply the next step following <RFC 561>. 3

This document is contained in two sections. Section I contains the relevant parts of RFC 561 which define the basic message syntax. Section II lists the new (and existing) header fields together with their proposed uses. 4

SECTION I: BASIC MESSAGE SYNTAX 5

```
<message>           ::=     <header><crlf><body>                    5a
<header>            ::=     <required header><optional header>      5b
<required header>   ::=     <date item><sender item>                5c
<date item>         ::=                                             5d
   DATE:<sp><date><sp>AT<sp><time>-<zone><crlf>                     5d1
<date>              ::=     <vdate> ! <tdate>                       5e
<vdate>             ::=     <dayofmonth><SP><vmonth><SP><vyear>     5f
<tdate>             ::=     <tmonth>/<dayofmonth>/<tyear>           5g
<dayofmonth>        ::=     one or two decimal digits               5h
<vmonth>            ::=                                             5i
   JAN ! FEB ! MAR ! APR ! MAY ! JUN ! JUL ! AUG ! SEP ! OCT !
   NOV ! DEC                                                        5i1
<tmonth>            ::=     one or two decimal digits               5j
<vyear>             ::=     four decimal digits                     5k
<tyear>             ::=     two decimal digits                      5l
<zone>              ::=                                             5m
   EST ! EDT ! CST ! CDT ! MST ! MDT ! PST ! PDT ! GMT ! GDT        5m1
<time>              ::=     four decimal digits                     5n
<sender item>       ::=                                             5o
   SENDER:<sp><user><sp>AT<sp><host><crlf>                          5o1
<optional header>   ::=     <subjects><optional items>              5p
<subjects>          ::=                                             5q
   ! <subject item> ! <subject item><subjects>                      5q1
<subject item>      ::=     SUBJECT:<sp><line><crlf>                5r
<optional items>    ::=                                             5s
   <optional item> ! <optional item><optional items>                5s1
<optional item>     ::=                                             5t
   <messid> ! <addressee item> ! <other item>                       5t1
<addressee item>    ::=                                             5u
   <addressee keyword>:<sp><addressee list><crlf>                   5u1
<addressee keyword> ::=     TO: ! CC: ! BCC:                        5v
<messid>            ::=                                             5w
   Message-ID:<sp>[<Net Address>]<line><crlf>                       5w1
<other item>        ::=     <other keyword>:<sp><line><crlf>        5x
<other keyword>     ::=                                             5y
   FROM ! IN-REPLY-TO ! REFERENCES ! KEYWORD ! PRECEDENCE !
   MESSAGE-CLASS ! SPECIAL-HANDLING ! AUTHENTICATION !
   ACCESSION-KEY                                                    5y1
<address list>      ::=                                             5z
   <addressee> ! <addressee><addressee list>                        5z1
```

```
<addressee>          ::=    <mailbox> ! <mailbox group>                5a@
<mailbox>            ::=    <user><host spec><attention spec>          5aa
<host spec>          ::=    ! @<host>                                  5ab
<attention spec>     ::=    (ATTN:<sp><user list>)                     5ac
<user list>          ::=    <user> ! <user><user list>                 5ad
<mailbox group>      ::=    <group name>:(<group numbers>)             5ae
<group numbers>      ::=    ! (<mailbox list>)                         5af
<mailbox list>       ::=    <mailbox> ! <mailbox>,<mailboxlist>        5ag
<body>               ::=    <line><CRLF> ! <line><CRLF><body>          5ah
<user>               ::=    <word>                                     5ai
<host>               ::=    a standard host name                       5aj
<group name>         ::=    ! <word>                                   5ak
<line>               ::=                                               5al
   a string containing any of the 128 ASCII
   characters except CR and LF                                         5al1
<word>               ::=                                               5am
   a string containing any of the 128 ASCII
   characters except CR, LF, and SP                                    5am1
<CRLF>               ::=    CR LF                                      5an
<SP>                 ::=    space                                      5ao
```

Notes: 5ap

1. A message may have at most one MESSAGE-ID item. 5ap1

2. All items with the same keyword must be grasped together. 5ap2

Please note the following: 5aq

(1) The case (upper or lower) of keywords -- specifically, "FROM, 'DATE", 'SUBJECT', 'AT', <host>, <zone>, <vmonth> and <keyword> -- is insignificant. Although 'FROM', for example, appears in upper-case in the formal syntax above, in the header of an actual message it may appear as 'From', 'from', or 'FRom', etc. 5aq1

(2) No attempt has been made to legislate the format of <user> except to exclude spaces from it. 5aq2

(3) The time has no internal punctuation. 5aq3

SECTION II: MESSAGE HEADER FIELDS 6

A. ORIGINATOR SPECIFICATION FIELDS 6a

FROM 6a1

This field contains the identity of the person who wished this message to be sent. This is expected to be the originator field which is specified by the user in the case that the message is being entered by one person for another. The message-creation process should default this field to be the user entering the message. [The usage for FROM and SENDER differs from that of RFC 561.]

SENDER 6a2

This field contains the identity of the person who sends the message. This field is expected to be set by the message-creation process automatically. It is possible that some sites will not include this field in external communications.

AUTHENTICATION 6a3

This field contains a description of which originator fields have been authenticated, and by which operating systems. This field should be created by message transmission and/or reception processes (FTP/Operating System level).

It is expected that current system will be able to authenticate only the SENDER field; however, later systems might have mechanisms to verify that the FROM actually authorized the SENDER to act on his/her behalf. It is expected that, when the FROM is authenticated, the SENDER will no longer be necessary for external distribution.

B. REFERENCE SPECIFICATION FIELDS 6b

MESSAGE-ID 6b1

This field contains a unique identifier to refer to this message. The format for a message identifier is:

[Net Address]Text String CRLF

Examples:

[ISIB]7-DEC-74,14:23:45
[ARC]GJOURNAL 39274a3

The uniqueness of the message identifier is guaranteed by each net-address message processor making the text which follows the net-address unique for that net-address. This, specifically says net-address and not site name. This would allow BBN (for instance) to allocate unique identifiers over all four machines, which may be addressed as BBN within the message system, thus producing a more integrated service for their users.

The text following the net-address is not defined here, as the problems associated with this specification are too great at this time. However, the net-address should allow automatic processes to determine if they can deal intelligently with the following text. Several types of automatic processing by the local message reader are thus possible: 1) if the site uses a filing mechanism known to the reader, the reader can retrieve the message 2) if the site supports remote message access (protocol not currently defined), the message id can be passed to the remote site and the message can be ttwus retrieved by the reader; 3) finally, if the message has been filed in the Datacomputer (using the entire message id [including net-address] as the handle), the reader can retrieve it from the Datacomputer.

IN-REPLY-TO 6b2

The contents of this field identiify previous correspondence which this message answers. If message identifiers are used in this field, they should be enclosed in angle brackets (<>).

REFERENCES 6b3

The contents of this field identify other correspondence which this message references. If message identifiers are used, they should be enclosed in angle brackets (<>).

KEYWORDS 6b4

This field contains keywords or phrases from the message, separated by commas.

C. RECEIVER SPECIFICATION FIELDS 6c

TO 6c1

This field contains the identity of the primary receivers of the message.

CC 6c2

This field contains the identity of the secondary receivers of the message.

BCC 6c3

This field contains the identity of the tertiary receivers of the message. This field should not be made available to the primary and secondary receivers, but it may be recorded to provide information for access control.

D. MESSAGE-TYPE SPECIFICATION FIELDS 6d

PRECEDENCE 6d1

This field describes the importance and urgency of the message. Machine-readable notations will be enclosed in angle brackets (<>). <PRIORITY> means that the message should be delivered as soon as possible. <ROUTINE> means that priority processing is not necessary. Plain text may also be included in this field.

MESSAGE-CLASS 6d2

This field describes the "legal" status of the message. Examples: Official, Unofficial, Record, Off the Record, Junk Mail. No automatic processing of this field is immediately expected. Certain message creation processes might, for example, always insert:

MESSAGE CLASS: Unofficial ARPANET Message

SPECIAL-HANDLING 6d3

This field contains any special instructions with regard to the handling of the message at the receiver's end. Machine-readable notations will be enclosed in angle brackets (<>). <PRIVATE> means that the message reception process should not aid the user in circulating copies to others. Plain text may also be included in this field.

NWG/RFC# 680
Message Transmission Protocol

JBP 15-MAY-75 21:58 32116
T. H. Myer
D. A. Henderson

(J32116) 15-MAY-75 21:58;;;; Title: Author(s): Jonathan B. Postel/JBP; Sub-Collections: NIC NWG SRI-ARC; RFC# 680; Clerk: JAKE; Origin: < POSTEL, RFC680.NLS;6, >, 15-MAY-75 20:15 JBP ;;;;####;

GCE 18-MAR-75 09:51 32117

User Questionaire on NLS

I am working on an evaluation of NLS, primarily on the impact of NLS on Bell Canada, and would like your comments (both positive and negative) for input to the study. Could you use the questionaire as a guide , but expand on any point you wish?

User Questionaire on NLS

Do you consider yourself to be required to use NLS either by your supervisor or by the nature of your job? Does your job description include use of NLS? 1

If so, how did you feel about having to use it? 1a

Would you have been interested and /or willing to try NLS if it had not been required? 1b

Were you encouraged to use the system? In what ways? 2

How were you trained, introduced to the system? Was assistance readily available to you? 3

Have you ever seen a demonstration of all the capabilities of NLS? 4

Do You know what the current capabilities are? 5

Have you ever used any other similar system? For what purposes? How would you compare NLS to that system? 6

What are your feelings on the security aspects of using NLS? 7

User Questionaire on NLS

What types of tasks have you done remotely, either from the home or from another city? 8

What are your comments on the "efficiency" of this medium? 9

Can you recall now the same tasks were accomplished before NLS was installed? 10

Are there things, new types of tasks or work modes you do now that you wouldn't or couldn't do without NLS? 11

Describe how you use or do not use the system in each of the following ways. Please state your reasons for doing or not doing so. 12

For reviewing other people's work. 12a

to access journals (the central file) 12b

for information exchange (sending messages and journal mail) 12c

for general organization of day to day responsibilities 12d

writing and editing reports on the system 12e

editing reports written off the system 12f

For what purposes did you expect to use Englebart before you first used the system, e.g., writing reports at the terminal, composing and storing copies of memos? 13

Describe the functions that you are using the system for at present. 14

For what purposes do you expect to use the system once we are on full time and your general familiarity with the commands increases? 15

What percent of the time during a working day do you expect to be using the system once we are on full time and your familiarity with the system increases? 16

For what purposes do you expect the other group members to use the system once we are on full time and general familiarity with the commands has increased? 17

For what purposes did you expect the other group members to use the system before you first used it yourself? 18

What are the advantages of the system over previous methods used by

you to carry out your duties,e.g., what can you omit from your activities now that you use the system? 19

What are the disadvantages of the system over previous methods used by you to carry out your duties? 20

Do you have any general comments you would like to make about Englebart or the evaluation process? 21

22

GCE 18-MAR-75 09:51 32117

User Questionaire on NLS

(J32117) 18-MAR-75 09:51;;;; Title: Author(s): Gwen C. Edwards/GCE;
Distribution: /HEM([ACTION]) IMM([ACTION]) MHV([ACTION])
PAN([ACTION]) DMA([ACTION]) PIW([ACTION]) PF([ACTION])
LHD([ACTION]) MIKE([ACTION]) ; Sub-Collections: NIC; Clerk:
GCE; Origin: < GEDWARDS, QUESTIONAIRE.NLS;4, >, 18-MAR-75 09:47
GCE ;;;;####;

MIKE 18-MAR-75 10:16 32118

confirmation letter to Turoff re MDS visit

Dr. Murray Turoff
Computer Sciences Department
New Jersey Insititute of Technology
Newark, New Jersey

1

Dear Murray,

2

This letter is to confirm the visit of Mr. Anand Kumar of Bell Northern Research, Ms. Penny Nappe of Bell Canada, and myself to your department on March 26, 1975.

3

We are looking forward to spending most of the day with you, and exchanging ideas on the application of multi-dimensional scaling to some of the SPRITE questionnaire data and your latest work in mini-computer-based conferencing systems.

4

Yours sincerely,

Michael T. Bedford
Supervisor- Business Planning

5

MIKE 18-MAR-75 10:16 32118

confirmation letter to Turoff re MDS visit

(J32118) 18-MAR-75 10:16;;;; Title: Author(s): Michael T. Bedford/MIKE; Distribution: /PAN([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: MIKE;

JGN 18-MAR-75 13:01 32119

remarks on first use of the NLS subsystem.

A reaction on how well the mail system is working.

JGN 18-MAR-75 13:01 32119

remarks on first use of the NLS subsystem.

DEAR FRANK 1

THANKS FOR TELLING ME ABOUT THE NAVIMP GROUP. I'VE BEEN TRYING TO LOG ON TO NALCON FOR LO THESE MANY WEEKS. I ONLY FOUND OUT ABOUT IT BECAUSE TWO LOVELY GALS FROM SRI CAME TO PRESENT NLS TO US. THEY MANAGED TO LOOK UP MY NAME (AND THE NAVIMP PASSWORD!) SO THAT I COULD GET ON AND READ MY MAIL. Incidentally, everybody else seems to be a member of the NSRDC group as well -- is this an oversight or were the others put in accidentally? 2

TO RESOLVE THE ACTION ITEM SENT 4 MAR 75, A COPY OF THIS IS GOING TO ILA TO VERIFY THAT SOMETHING (I DON'T KNOW WHAT) IS WORKING. 3

IT WAS NICE TO FIND OUT ABOUT THE FICHE THAT CAME TODAY -- IT ARRIVED THE SAME DAY I READ MY MAIL, SO I WAS ONLY MYSTIFIED FOR A COUPLE OF HOURS. I WONDER WHERE I CAN STEAL A FICHE VIEWER. This note is also a response to that bit of mail. 4

I hope that the long note on alternative methods is still rough, you need to more clearly outline where each alternative is defined -- I was half-way through the second one before I realized it was distinct. A synopsis of the alternatives would also be useful, as would be some titles, breaks, etc. A bottom-line cost comparison in one place would clean up the style a lot. 5

I was contacted by Mr. Frank Walden of ADR about ELF development for NALCON. (He is Dr. Pete Waal's manager.) They would presumably be interested in bidding on the contract. They have a bunch of well-concealed documentation on ELF software. I think you should talk to him so as to get a better estimate of the software costs -- I still think your estimates are too low. His number is (703)281-2000. I gave him your number. 6

The info you gave for my user ident was not entirely correct. I sent a note to FEEDBACK to have it corrected. A copy should come to you. 7

I gave the documentation on the H-FE protocol to our systems programming group with a request that they figgure out what the impact would be. They haven't been speaking to me since then -- I wonder if there's a relationship. 8

Pardon the mix of text types -- this was composed on two different terminals. 9

10

10a

remarks on first use of the NLS subsystem.

Greg Noel, NELC 10b

10c

10d

A late update -- I talked to the system staff and they said that doing it for batch should be no problem. Interactive access would be a disaster, exactly how much he wasn't sure. I'll find out more and get back to you. 11

JGN 18-MAR-75 13:01 32119

remarks on first use of the NLS subsystem.

(J32119) 18-MAR-75 13:01;;;; Title: Author(s): J. G. Noel/JGN;
Distribution: /FGB([ACTION]) ILA([INFO-ONLY]) ; Sub-Collections:
NIC; Clerk: JGN; Origin: < NAVIMP, TEMP,NLS;1, >, 17-MAR-75
18:43 JGN ;;;;####;

RAU 18-MAR-75 16:46 32120

addendum to ident for bornstein

Two added notes to my letter ofyesterday, acceptable idents would be:
ib,ibi,ixb in that order. also, my phone number is
714-225-2211/7908/7979/7155. tnx 1

RAU 18-MAR-75 16:46 32120

addendum to ident for bornstein

(J32120) 18-MAR-75 16:46;;;; Title: Author(s): Robert A. Unger/RAU;
Distribution: /FGB([ACTION]) FEEDBACK([INFO-ONLY]) ;
Sub-Collections: NIC FEEDBACK; Clerk: RAU;

FGB 18-MAR-75 17:32 32121

NAVIMP Directory & ELF Listings

Greg,

Apologies about the NAVIMP directory but we wanted to make sure everything was set up correctly and working before sending out the word. A memo should be along shortly explaining the situation.

Jim Shores of NUSC can probably produce listings of the ELF O/S so you wont have to steal a fiche viewer. I'll let you know. We will contact ADR on ELF development.

Regards,

Frank

NAVIMP Directory & ELF Listings

(J32121) 18-MAR-75 17:32;;;; Title: Author(s): Frank G. Brignoli/FGB; Distribution: /JGN([ACTION]) ILA([INFO-ONLY]) JPS([INFO-ONLY]) ; Sub-Collections: NIC; Clerk: FGB;