JEW 15-APR-74 15:47 22734

Making the Journal Catalog Files Private

Dave-- I've made JCAT, JCAT0, JCAT1, and JCAT2 private files at SRI-ARC. The same needs to be done for TJCAT (which, as usual, is locked and I can't get at it), and for the whole set at OFFICE-1 (to which I don't have access). All you need to do is load each catalog file in turn, do 'E[xecute] [Pr]ivate File', append the visible ',AccessList:;' to the origin statement, display the file's status to make sure it says 'Private File', and update the file. 1

Making the Journal Catalog Files Private

(J22734) 15-APR-74 15:47; Title: Author(s): James E. (Jim) White/JEW; Distribution: /JDH; Sub-Collections: SRI-ARC; Clerk: JEW;

Stanford Research Institute
Augmentation Research Center
333 Ravenswood Avenue
Menlo Park, California 94025

Mr. Burns, RADC/PMA
Department of the Air Force
Headquarters Rome Air Development Center (AFSC)
Griffiss Air Force Base, New York 13440

Dear Mr. Burns:

This is the last letter repsondng to block 10 of DD Form 1664 with respect to contract F30602-73-C-0285 (SRI #2697). 1

The table below shows the person-hours expended on the subject contract since the last reporting period (three weeks), and takes the contract to completion. 2

	Cumulative to 1/21/73	Person Hours Expended During Report Period
Supervisor	200	0
Senior Professional	92	72
Professional	2938	475
Technical	0	0
Other	0	0
	2051	

2a

Our most important work during January was planiing future work on the Forms System. Programming of the Forms system continued where possible. 3

We estimate that the percentage of technical completion at the end of the January was 100 per cent. 4

Sincerely,

Dirk van Nouhuys
Research Analyst

Final Monthly Letter Report to RADC

Augmentation Research Center

dvn

DVN 15-APR-74 16:38 22735

Final Monthly Letter Report to RADC

(J22735) 15-APR-74 16:38; Title: Author(s): Dirk H. Van Nouhuys/DVN;
Distribution: /DLS; Sub-Collections: SRI-ARC; Clerk: DVN;

DIA DCW MEH 15-APR-74 16:54 22737
ARC Facility, What To do, Recommended Actions By Task Group Number 2.

This is a plan of action to move from our PDP-10 configuration to the Utility by (or shortly after) July 1, and be set up to develop the NLS frontend system and MST system. This is prepared by the RWW task group number 2. (LJOURNAL, 22655, 1:w) (DIA, DCW, MEH). A reference document showing possible system configurations and interfaces required (including detailed discussions and considerations) is journal document (22732,). 1

RECOMMENDATIONS: (DISCUSSIONS FOLLOW) 1a

1) Terminate our lease on our current PDP-10 and related equipment. 1a1

Make arrangements ASAP, termination to take place July 1. 1a1a

2) Have 128K of DEC memory added to the Office-1 facility. 1a2

Ampex memories are available through Tymshare at a greater savings but we advise against using them because they have thus far proved unreliable. 1a2a

If Tymshare is willing to back reliability then perhaps a mutual agreement could be reached. This is a decision that will have to be made by Operations; it depends on actual cost because of Tymshare's decision to, in the future, use only Ampex memories. They should not penalize us for their Ampex decision. 1a2a1

The order should be placed ASAP. 1a2b

3) IF POSSIBLE: move our Bryant drum to the Office-1 facility. IF NOT: Expand the capacity of the existing Office-1 drum system to four drums and two controllers. 1a3

(Tymshare estimates they could have DEC equipment installed by July 1). 1a3a

To accomplish this we should begin talking to ARPA as soon as possible about moving the Bryant drum, and request from Tymshare a cost and delivery quote. 1a3b

The logic here is: The Bryant drum is the ideal swapping device for Tenex, and without question could be operating at office-1 by July 1. In addition it would buy us some time to survey the market (since we know the Bryant Drum is no longer being manufactured) and make a more rational and proper decision on how to fill our swapping device needs. 1a3b1

4) Expand the Office-1 disk capacity if necessary. 1a4

The NLS frontend and MST system programmers will need about 20,000 pages of disk space. 1a4a

5) Modify the OFFICE-1 TENEX system to use the Bryant drum and extra memory. 1a5

6) Order 13 LineProcessors ASAP, 1a6

We would only have to order a few more Mice and Keysets since we have several already, 1a6a

Cost, Mouse Keyset pair: $500 ea 1a6b

Cost, 13 Lineprocessors: $2,000 X 13 = $26,000 1a6c

Delivery time not well fixed, 60-90 days? 1a6d

7) Lease 13 Hazeltine video terminals month-to-month ASAP, 1a7

Cost: $159/mo ea = $2,192/mo total 1a7a

Plus $300 one time charge for remote video, 1a7a1

(We should order several with remote video, in order to drive television monitors and our video projector,) 1a7b

Delivery time 60 days 1a7c

(Delta Data terminals could be substituted but they are not available on a month-to-month lease) 1a7d

8) Investigate further the logic, and possibility, of buying 16 textronix 4023 video display terminals modified for Lineprocessor use, 1a8

If we decided; to order them we would then cancel the Hazeltine orders coincedent with deliveries, 1a8a

9) Order a disk system for the PDP-11 ASAP, 1a9

10) Begin designing and buying parts for a microcomputer device to interface our line printer to the PDP-11, OR, if funding is available lease DEC's standard line printer, 1a10

Micro-computer: 1a10a

$2,000 plus .2myr hardware and .1 myr software, 1a10a1

DEC line printer: 1a10b

about $20,000 or $800/mo 1a10b1

11) Order a DL-11 or extra TTY interface for the PDP-11 (for connection to the TEN), 1a11

12) Have installed, on about June 1, two 4800 baud modems to office-1 for use by office-1 staff. 1a12

Cost: approximately $800/mo. 1a12a

This would be a workstation system similar to the one shown in (22732,sys6). 1a12b

If it is determined that two workstations are not adequate, then we should consider the micro-computer system shown in (22732,sys8) 1a12c

For considerations and discussion see those references. 1a12d

13) Make arrangements to send Rodney Bondurant to PDP-11 maintenance school as soon as possible. 1a13

DEC PDP-11 maintenance service appears inadequate for our needs. 1a13a

See (22732,11-maint) for discussion and considerations. 1a13a1

14) Begin negotiations with BBN to incorporate things needed for DNLS into standard TENEX. 1a14

15) Begin modeling a design for connecting Workstations to the PDP-11, a design that has no restriction because of distance or number of connecting wires. 1a15

See (22732,mice-keyset) for considerations and discussion. 1a15a

SCENARIO: 1b

IMMEDIATE 1b1

Realign our efforts to insure that the PDP-11 currently on order is delivered and running stand-alone as soon as possible, similar to the configuration shown in (22732,sys7), and that the software for the new Office-1 configuration is operational by July 1, 1b1a

We can connect it to the PDP-10 via the Data Line Scanner and the DL-11 to load PDP-11 programs - they have done this at ISI, 1b1a1

In addition, take formal steps to insure that the actions suggested in the preceding plan occur, 1b1b

ABOUT JUNE 1 1b2

If possible (see plan step 3), the Bryant drum would be disconnected from our PDP-10 and moved to Office-1. We would work on a disk-only TENEX for the month of June. Other aspects of the system would be intact (e.g. tasker). 1b2a

Two LineProcessor workstations would be connected directly to office-1 via two 4800 baud links. Their use would be primarily for office-1 staff. (See plan step 12.) 1b2b

JULY 1 1b3

Our PDP-10 would go away and the Office-1 system would come up with 256K (rather than 128K) of PDP-10 memory (see plan step 2) and either the Bryant drum or four DEC drums and two drum controllers (see plan step 3), 1b3a

The hope is that this new office-1 configuration will provide reasonable service for 30 users, 1b3a1

Connect the PDP-11 to the IMP via the ANTS interface which we have already ordered, 1b3b

At that time we can run 12 or so Lineprocessor Workstations through the PDP-11 to Office-1, using the PDP-11 as a terminal concentrator. This can probably most easily be done by using the ELF-11 system developed at SCRL, 1b3b1

Dave Retz (Mr. ELF) says we can do this and run 9600 buad with the current ELF system, but need to make minor changes in the equivalent of TELNET to make it transparent (avoid special terminal handling functions). This is a minor change which he can do for us. 1b3b1a

We select the ELF system because it has a working NCP and now runs as a terminal concentrator. The RSX-11D has no NCP now, (That we know of). The ANTS II system is not yet operational (that we know of). 1b3b1b

ELF is a PDP-11 operating system which is like a mini-TENEX. It is being developed primarily for the speech research people but is turning out to be quite general. 1b3b1c

If we decide to use the DEC RSX-11D software for the frontend operating system, we could switch to the RSX-11D when we get the required disk on the PDP-11 and incorporate an NCP into RSX11-D. 1b3c

We have to move ELF's NCP to RSX-11D or find another existing NCP. 1b3c1

DISCUSSION AND ALTERNATIVES: 1c

SWAPPING DEVICE FOR OFFICE-1: 1c1

The office-1 drum system configured as is (one DEC drum and controller) is inadequate in capacity (and possibly speed) for the current load on that system (20 users). The considerations are listed below. What to do is somewhat a controversy. (Some interesting information uncovered by this survey appears to show that when office-1 is supporting 20 users: a lower load average would probably be realized with a disk only system. -- Because of the small page capacity of the DEC drum; with 20 users Tenex must, almost always, be defaulting to the disk) 1c1a

WE COULD ADD TO IT. 1c1a1

We could reconfigure Office-1 to have four DEC drums and two controllers. This we expect would give us the speed (because of parallel swapping) and capacity necessary for 30 users. Just increasing its capacity may not be enough to support 30 users. 1c1a1a

WE COULD REPLACE IT. 1c1a2

Move our Bryant drum over to Office-1. 1c1a2a

The maintainance panel needs some work and we sould clean surface and maybe replace bearings. It would also be worth trying one of the new heads. 1c1a2a1

It is not possible to replace the heads on the Bryant drum exactly. We have a replacement set that is supposed to work but has not been tried. 1c1a2a1a

Outside maintenance is available but is very expensive and has not proved succesful in the past (we do our own). Tymshare is not experienced with it but is probably willing to support it. 1c1a2a2

The Bryant drum is a carefully designed swapping drum with special characteristics which other drums (e.g. the one on Office-1 now) do not have. The performance of that drum is outstanding under heavy load. 1c1a2a3

Replace it with whatever Tymshare would like to see there. (of large capacity) 1c1a2b

Replace it with fixed head disk. 1c1a2c

Replace it with a drum similar to the Bryant drum in swapping characteristics. Such a device is available, ISI has one -- a fixed head disk designed for swapping, made in LA (DDC??). 1c1a2d

Replace it with a disk system with many controllers - e.g. one controller for each disk drive (such as the MAXC system). It is not clear how many controllers would be required (4? more?). (This may be the most expensive but most reliable way.) 1c1a2e

OFFICE-1 CAPACITY: 1c2

We are assuming that ARC will buy ten slots at Office-1 for programming, documentation and analysis workers for the frontend, MST and related development. 1c2a

The addition of 128K and the Bryant drum should increase the capacity of the Office-1 system considerably. We do not know enough about the behavior of TENEX and NLS on systems with 256K of memory to make a statement about just how such a configuration would perform. However, I (DIA) think we are as justified in selling 30 slots on such a configuration as we are in selling 20 slots on the current configuration. I am assuming that we (and others) will be using only the running NLS and not compiling, etc. We may, however, use that system for such 'bad' things in off hours. 1c2b

TERMINAL ACCESS TO THE ARPANET: 1c3

We are getting a PDP-11 for MST workstation and future systems development. And if this is the only high speed connection to Office-1 there will most likely be a conflict between the software and hardware development and staff users. 1c3a

We could ,in addition, install a Line Processors modem system to Office-1, for use by office-1 staff and SRI subscribers. 1c3a1

See (22732,sys6) and (22732,sys8) for consideration and discussions. 1c3a1a

We could get a TIP (which would allow direct terminal connection) but that may be expensive and take a long time, and may not benefit us in the long run. 1c3a2

We could get another PDP-11 just for terminal access but then we would have an IMP-port shortage, Two PDP-11's would be desirable from the system development standpoint -- one system dedicated to development, However, we don't want to be in the IMP-connection switching business, There may be a good way to do this -- and if so, we should try it, 1c3a2a

The port shortage may go away soon, We should find out about this, (Is another IMP coming here someday?? when??) 1c3a2a1

Getting a TIP would be generally beneficial to SRI, Perhaps SRI could foot most of the bill? We would still be faced with a timing problem since it would not be in soon enough, and we are going to have the PDP-11 here anyway, 1c3a2b

Of course, we could use couplers and TI's to get to AMES or Tymshare TIPs and work that way, Or we could install modems to Tymshare, However, it seems possible and much more desirable to work through the PDP-11 and our IMP at high baud rates, 1c3a3

WORKSTATIONS: 1c4

We could build hardware to connect Mice and Keysets directly to the PDP-11, or we could use Lineprocessors or a modified Lineprocessor for long distances between terminal and PDP-11, There are advantages to all, For detailed discussion and consideration see (22732,mice-keyset), The following is a summary: 1c4a

Direct connections would be cheapest, but would limit terminals to within 100 feet of the PDP-11 and would require additional PDP-11 software development -- this software work is already done in the Lineprocessor, 1c4a1

Lhndprncdsrnrs are more flexible (e,g,usable over modem) and already available but are limited to 200 or 300 feet from the PDP-11, 1c4a2

We could easily modify our Lineprocessors to operate with long connections, by converting the line interface to current loop or modem type transmission, 1c4a2a

We could design or adapt (there may be one commercially available) a radio frequency (coax cable or airspace) type distribution system which would allow us to extend Lineproceesors several thousand feet, 1c4a3

I (MEH) think that this is where it is all heading, and therefore is the best long term investment. See (22732,comm-mod) and (22732,meh). 1c4a3a

The Lineprocessor route seems advisable considering the short time remaining before this system is required to be operation. 1c4a4

VIDEO DISPLAYS: 1c5

We require 16 video displays because: 1c5a

1. Then we can be fairly sure of 14 of them working at once. 1c5a1

2. Some will be used for local messing around with the PDP-11 system itself. 1c5a2

3. We will want as many as possible to do load studies on the frontend system and we have PDP-11 ports for 16. (We would like to do studies with 32 terminals someday). 1c5a3

4. There is a law that says that you never have too many terminals (what was his name??) 1c5a4

5. In most applications the display terminals would be preferable to, and could replace our TI's. We could turn in several TI's when the displays arrives. 1c5a5

6. With an extra or two, we will then be able to make demonstrations without cramping the development people. 1c5a6

7. Several will be used by office-1 staff, not necessarily connected to the PDP-11 (2 to 4?). 1c5a7

The current (inexpensive) choices are Delta Data and Hazeltine. After having them side by side for a short time, most agree than each has its evils and its good points -- almost a draw, but with a little more weight on the Hazeltine side. Hazeltine is much cheaper, but they haven't been very friendly with us. Perhaps ordering 13 of them would change that. 1c5b

Another possibility is the modified Tektronics 4023 video terminal. If we can get Tektronics to build them, they would most likely be superior to both Delta Data and Hazeltine. However, it is not clear that they will ever exist. 1c5c

LINE PRINTER: 1c6

We could build an interface to adapt our Data Products line printer to the PDP-11. 1c6a

The most intelligent way seems to be to make it look like an ASCII device. We can then run it in a variety of ways. We could do this with a microcomputer device similar to a Lineprocessor which would also allow it to be replaced easily if it becomes no longer serviceable (It is very old and no longer available). See (22732,printer-ascii) for detailed discussion and considerations. 1c6a1

Programming this device would require about 3-6 man-weeks of work. 1c6a1a

Hardware cost: about $2,000 plus .2myr. 1c6a1b

We could purchase or lease the standard DEC printer and interface for PDP-11. 1c6b

The print quality looks comparable to our Data Products. 1c6b1

TENEX: 1c7

We need several changes made to standard TENEX before we can run DNLS on it. The chief problem is convincing BBN that our changes are cool. The best way is perhaps to bring up 1,32 without changes in it and show them it works. Ferg will work on this. 1c7a

DIA DCW MEH 15-APR-74 16:54 22737
ARC Facility, What To do, Recommended Actions By Task Group Number 2,

(J22737) 15-APR-74 16:54; Title: Author(s): Don I. Andrews, Donald C. (Smokey) Wallace, Martin E. Hardy/DIA DCW MEH; Sub-Collections: SRI-ARC; Clerk: MEH;
Origin: <HARDY>JULY1.NLS;11, 15-APR-74 16:46 MEH ;

JEW 15-APR-74 16:57 22738

A New Version of JSTRIP to Support Journal Privacy

This procedure should replace (hopper,kpgms,jstrip).

JEW 15-APR-74 16:57 22738

A New Version of JSTRIP to Support Journal Privacy

```
FILE jstrip % L10 to <WHITE>JSTRIP,REL %                                    1
   (jstrip) PROCEDURE;                                                      1a
      LOCAL st1,st2;                                                        1a1
      LOCAL TEXT POINTER p0, p1, p2, p3, p4;                                1a2
      IF nlmode = fulldisplay                                               1a3
         THEN                                                               1a3a
            BEGIN                                                           1a3a1
            DSP (<Strip Jcat Entries at Group);                             1a3a2
            in2sca ($p1,$p2);                                               1a3a3
            END                                                             1a3a4
         ELSE                                                               1a3b
            BEGIN                                                           1a3b1
            typeas ($"Strip Jcat Entries at Group ");                       1a3b2
            tbug ($p1);                                                     1a3b3
            typeas ($" ");                                                  1a3b4
            tbug ($p2);                                                     1a3b5
            typeas ($" ok? ");                                              1a3b6
            getctc ();                                                      1a3b7
            END;                                                            1a3b8
      st1 _ grptst (p1,p2;st2);                                             1a4
      dismes (1, $"In progress");                                           1a5
      LOOP                                                                  1a6
         BEGIN                                                              1a6a
         %regular%                                                          1a6b
```

A New Version of JSTRIP to Support Journal Privacy

```
        IF NOT FIND SF(st1) ^p3 ( [')] ^p0 [';] ^p1 ["Author(s)"]
        ^p2 < [';] ^p2 _p2) THEN GOTO com1;                              1a6b1
        IF fndunqtxt (s" ,ACCESSList;", $p3, $p3, $p4) THEN              1a6b2
           IF NOT FIND ^p4 > [';] ^p4 THEN GOTO com1 ELSE NULL           1a6b2a
        ELSE FIND SF(st1) ^p3 ^p4;                                       1a6b3
        ST p2 _ SF(p2) p0, SP, p1 p2, p3 p4;                             1a6b4
     (com1): IF st1 = st2 THEN EXIT;                                     1a6c
     st1 _ getsuc(st1);                                                  1a6d
     END;                                                                1a6e
  dismes (0);                                                            1a7
  IF nlmode = fulldisplay THEN recred ();                                1a8
  RETURN;                                                                1a9
  END.                                                                   1a10
FINISH                                                                   1b
```

JEW 15-APR-74 16:57 22738

A New Version of JSTRIP to Support Journal Privacy

(J22738) 15-APR-74 16:57; Title: Author(s): James E. (Jim) White/JEW; Distribution: /JDH; Sub-Collections: SRI-ARC; Clerk: JEW; Origin: <WHITE>KPGMJSTRIP.NLS;2, 15-APR-74 16:52 JEW ;

DVN 15-APR-74 17:15 22739

Sendprint Works from Office-1

It turns out sendprint works fine from Office-1...Elein Walters usese it all the time. I think we should have the print files of the userguides available for that reason. You could do it too to your TI if you wanted to try.

1

DVN 15-APR-74 17:15 22739

Sendprint Works from Office-1

(J22739) 15-APR-74 17:15; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /&DPCS JMB JHB(fyi) ECW; Sub-Collections: SRI-ARC DPCS; Clerk: DVN;

Section 1 SUMMARY and OBJECTIVES 1

ORGANIZATION OF THIS PROPOSAL 1a

Section 1 SUMMARY and OBJECTIVES
Section 2 RELEVANCE TO THE DOD/ARPA MISSION AND FUNCTIONS
Section 3 BACKGROUND and TECHNICAL NEEDS
Section 4 PROPOSED EFFORT
Section 5 BUDGET
Section 6 REFERENCES
APPENDIX: PAST ACCOMPLISHMENTS 1a1

SUMMARY 1b

Our Proposal is that ARPA sponsor the Network Information Center (NIC), with its own contract, Principal Investigator, and staff. 1b1

Stated as briefly as possible, the technical need which this Proposal addresses is a well-understood, well-structured, useful and useable mechanism that allows users to access and exchange information and computer systems resources that are on the Network and are relevant to their needs. 1b2

The overall objective in this Proposal is the development of an "information center" technology on the Network. That is, approval of this Proposal would establish a single coordinated focal point through which ARPA can sponsor the development of Network-wide standard mechanisms that will enable users to learn about and obtain those computer-based information resources on the Network which they have a need and a right to obtain. 1b3

The information resources that the NIC would be concerned about are in three categories: 1b4

- data bases and other information sources
- computer programs and facilities
- personal reports and correspondence 1b4a

OBJECTIVES 1c

This Proposal has two types of objectives: LONGTERM objectives, and SERVICE objectives. The objectives outlined here are further discussed in the "Proposed Effort" section of this Proposal. 1c1

Service Objectives 1c2

The main service objective is to provide a Network-wide standard mechanism by which people find and gain access to individuals, systems, and information that they need, to attain their own objectives. 1c2a

This entails: 1c2b

- coordinating the present Network-oriented databases maintained at the NIC with other similar databases maintained at various sites on the Network, 1c2b1

- distributing these information resources around the Network at selected, willing server host systems, and making them accessible through a command language that is common to all those server hosts, 1c2b2

The distributed mechanisms would encompass all aspects of information collection, maintenance, storage, and access. These mechanisms would eliminate the bottleneck that results when important data resources are stored at only one site (such as the NIC). And, the mechanisms would reduce the time and money that are wasted through questions and redundant efforts to find answers to specific questions, both by those who need the answers and by those who have the answers. 1c2c

Please note that we do not wish to provide the services described in the "Proposed Effort" section of this Proposal unless the development described in that section is also supported, at the levels indicated in the "Budget" section. 1c2d

Longterm Objectives 1c3

The longterm objectives of SRI-ARC in proposing to provide NIC services for the ARPA Network are: 1c3a

a) to understand the problems associated with maintaining an information center for a network-based community of users, 1c3b

b) to evolve organizational and operational procedures that will ensure continued timeliness, relevance, and accuracy of responses to specific inquiries about information resources and, 1c3c

c) to transfer these procedures to mission- and discipline-oriented groups of computer network users. 1c3d

PROVIDING SERVICES IS NOT OUR PRIMARY GOAL. 1c3e

We wish to understand how communities of users on the Network can address the ARPA Network and obtain coordinated information services that are useful, useable, and well-structured. 1c3f

We believe this involves the development of a network information technology that couples and interfaces the technologies of digital computers, information processing, and computer networks, with people. 1c3g

The information center technology we are striving to create entails functions, procedures, and tools that are relevant and useful for users who need to access, compose, study, modify, communicate, publish, and use a variety of types of information. 1c3h

In the approach we are suggesting, the facilities of the information center would evolve through feedback, analysis, and development cycles. This would be coordinated under a single contract, but would utilize personnel from several ARPANET organizations. 1c3i

In this way, the functions of the NIC would be distributed; a wide variety of viewpoints and ideas would be included; and exposure to the concept of the NIC technology would, we believe, foster future support for work in this area that could be tailored to the needs of one large-scale special interest groups. 1c3j

ULTIMATE CLIENTS FOR THE NIC TECHNOLOGY 1d

Because of the present stage of development of the NIC, we therefore believe that sponsorship must continue to be by ARPA/IPT. 1d1

We are still in the early stages of understanding the required functions, and building the procedures and tools. 1d2

We believe therefore that it is too early to put price tags on NIC-type services and expect Network user communities to buy them. The services, based as they are on still-developing computer systems, are bound to be priced way above everyday procedures that would provide the same minimal services. 1d3

To survive the initial exploratory and development stages, we believe these services must be subsidized, and that direct

support should be provided for further development of a network information center technology. 1d4

However, we anticipate that the main thrust of the information center technology will ultimately be directed at coherent subsets of the general Network user community. These subsets will be mission- or discipline- oriented, i.e., special interest groups. 1d5

As examples, we anticipate that network information center technology would be desired by 1d6

- energy-related interest groups (such as the present Defense Energy Information System, or DEIS); 1d6a

- computer systems developers (such as the National Software Works); 1d6b

- private corporations and institutes (such as SRI); 1d6c

- geographically distributed groups collaborating on common problems (such as the developers of Network technology itself, and such as military bases that are connected by computer Network); 1d6d

- government agencies desiring either to set up their own networks or to use a logical subset of the ARPANET (e.g., NSA, GSA, NSF, NBS) 1d6e

Section 2 RELEVANCE TO THE DOD/ARPA MISSION AND FUNCTIONS 2

We believe that continuing to support the evolutionary development of the NIC is vitally important to the long-term success of the ARPA Network. 2a

The current situation with respect to information resources on the Network is not coordinated. Consequently, the Network does not yet function as an "information utility", either for users at large or for specialized groups and communities of users. In part, this is because there are several separately funded, independent projects that are responsible for collecting, maintaining, and disseminating information about ARPANET resources. There is but scattered coordination of these efforts, and of efforts to establish data transfer and data access mechanisms. These efforts have therefore tended to proceed in the directions that dedicated individual researchers wish them to proceed in. 2b

To some extent this situation has produced good results, but in our opinion it must be replaced by a better mechanism. 2c

Individuals at Network computer sites are often asked to provide in-depth information to different groups of data collectors and to other seekers of information about their facilities, in order to satisfy immediate needs. Time and money are wasted through questions and redundant efforts to find answers, both by those who need the answers and by those who have the answers. 2d

The NIC can, if properly supported, ultimately provide a responsive, coordinated mechanism that would make it possible for Network users to 2e

a) communicate with one another through an easily accessible message center; 2e1

b) obtain up-to-date, timely information about Network computer systems and information resources; 2e2

c) access those resources they are interested in through a useable, common command language. 2e3

The benefits of such an approach to DOD/ARPA would, in our opinion, be 2f

- to allow ARPA to coordinate the development of extensions of ARPANET information handling facilities; 2f1

- to allow ARPA to manage these resources as to their numbers, kinds, usefulness, and effectiveness; 2f2

- to allow ARPA to put into clear focus the scope and depth and accessibility of the Network's resources. 2f3

Section 3 BACKGROUND and TECHNICAL NEEDS 3

Stated as briefly as possible, the technical need which this Proposal addresses is a well-understood, well-structured, useful and useable mechanism that allows users to access and exchange information and computer systems resources that are on the Network and are relevant to their needs. 3a

A. TECHNICAL NEEDS 3b

Needs 3b1

In general, these are the needs we believe should be addressed by the NIC: 3b1a

1) The need for network information center technology that encompasses functions, procedures, and tools that are relevant and useful for users who need to access, compose, study, modify, communicate, publish, and use a variety of types of information, 3b1a1

2) The need for a common user-oriented command language through which users can address and access the information center facilities, 3b1a2

3) The need for comprehensive message center facilities on the Network, 3b1a3

Why We Believe ARPA/IPT Should Sponsor the NIC in These Efforts 3b2

The development of the Network and the resources connected to it have made several problems and needs very clear. Among these are the following: 3b2a

Fhrst, development of the underlying protocols that allow communication and data transfer among disparate computer systems is an exceptionally difficult, time consuming process. This is because the development requires interactions and agreements on solutions and priorities, by technical representatives of all the different computer systems connected to the Network. The results must be applicable to a wide variety of needs, and extendable as new needs arise, 3b2b

Second, there are several things still clearly lacking in the protocols and processes that have already been developed. One of the most important of these is the ability to transfer data that is structured, rather than sequential. Another is to allow users to have interactions with the Network through a common command language, regardless of which host system they are using, 3b2c

In our opinion, the efforts needed to develop further protocols need overall direction, coordination, and backing through a contract from ARPA/IPT. No other organization at this time his the motivation to strengthen the Network's capabilities in these areas, 3b2d

We believe that it is timely and vitally important that such an effort be formally supported and subject to the same type of control that other ARPA research contracts are, 3b2e

We know that the group undertaking this contract must have an exceptional interest in the success of the endeavor, and must be technically competent to carry out the work. We believe the NIC meets both criteria, for these reasons: 3b2f

In the Network Information Center, the needs and problems mentioned above have been very apparent, 3b2f1

The NIC, as part of SRI-ARC, was one of the prime contributors in the development of the Telnet and Mail protocols, and participated in the design of the File Transfer and Graphics protocols. It understands not only the technical problems, but also the difficulties of getting things to happen when the efforts are uncoordinated. 3b2f2

The NIC would rely heavily on (and therefore have an exceptional interest in) the mechanisms of any new protocols for the transfer of structured data, 3b2f3

There are several individuals at SRI who are competent and experienced in these technical areas. (For example, see References 7 and 8). 3b2f4

B. GENERAL BACKGROUND CONSIDERATIONS 3c

A Short History 3c1

The Network Information Center was originally created to develop and provide reference and dialog support services for a small number of research sites involved in the development and use of the ARPA Network. No other group on the Network was, to our knowledge, explicitly given this mission by ARPA. 3c1a

But the character of the ARPA Network and its planned future has significantly changed since it was initially conceived, and since the Augmentation Research Center of Stanford Research Institute volunteered to develop and operate the NIC in 1970. 3c1b

The initial plan for the Network, as is of course known, was for a small number of research sites (approximately 12) to be experimentally interconnected in order to develop the packet switching technology mechanisms under ARPA sponsorship. Now, however, the number of sites is around 50, and is growing at an increasing rate. Use of the Network is no longer confined to ARPA-sponsored research groups working on Network technology, but is broader in

scope, in mission, and in degree of interconnectednesss among the users. 3c1c

With all these changes evolving on the Network, the Network Information Center must evolve also to keep pace with changing needs. 3c1d

The NIC's Roles 3c2

For the past four years, the NIC has endeavored, under limited funds and resources, to provide a uniform level of experimental services to the entire Network community. These services, described more fully in the section on "Accomplishments" (see the Appendix), have been four-fold in nature: 3c2a

1) Providing a mechanism that facilitates correspondence and dialog among the geographically distributed individuals and research teams that have contributed either to the development of Network technolgy, or to the support of other network oriented research. 3c2b

2) Providing detailed on-line and off-line reference information about the Network's resources and facilities. 3c2c

3) Developing prototypical concepts and services for possible extension to other network oriented information centers. 3c2d

4) Stimulating use of and interest in the ARPA Network. 3c2e

The NIC is not yet a self-sufficient enterprise. Its methodology and services are continuing to evolve. (This evolution has been hampered by inadequate levels of support for the NIC, a problem described in Reference 3.) 3c2f

The Central Difficulty 3c3

The central difficulty has been to cope with the basic growth problems referred to above: expanding numbers of sites, expanding scope of user needs, rapidly changing information and information needs. In short, a rapidly evolving environment. 3c3a

This difficulty has recently been analyzed at SRI-ARC (see Reference 1). The problem can be stated briefly as follows: 3c3b

Goal-Oriented System Development Strategy (figure 1) 3c3b1

It is universally acknowledged that the development of a problem-oriented system must begin with an analysis of the problem areas and user needs. This phase must be followed by a definition of the products and services that must be provided to meet the identified user needs. And this must be followed by the design phase that is to determine how the contemplated system is to be interfaced with other systems. 3c3b2

This theory is a linear one that works marvelously well when the needs are simple, easy to identify, and stable and recurring in nature. However, for ill-defined needs, as well as for urgent needs occurring in a rapidly evolving environment, the situation is unfortunately not as simple. In such cases great caution must be exercised, and flexible, iterative approaches must be adopted when an information system must be developed under those conditions. This is absolutely crucial because needs do change according to the tools available. 3c3b3

Analysis of User Needs (figure 2) 3c3b4

In theory, a matrix of user needs exists which, if properly decomposed, shows how the potential user population can be decomposed into special interest groups (SIG's), and exhibits those needs that are shared by the whole user community. 3c3b5

In practice, however, such a matrix can only very rarely be obtained, and an initial analysis of the problems to be dealt with must rely almost exclusively on educated guesses from tradition-bound practitioners who might have some stake, real or imagined, in preserving the existing status quo. 3c3b6

Thus the real problem one has to face explicitly is how to capture, over time (and not only in the early phases of a development project), the essence of this matrix of needs, to understand the nature of its various elements, and to get reliable indications of their real values and permanence. 3c3b7

This calls for an evolutionary development approach if the resulting system is to fit the various specific needs the services are to fulfill. 3c3b8

Growth Pattern of Communities of Interest (figure 3) 3c3b9

Most organizations, most communities of interest, as well as most growing and living organisms, usually exhibit an S-shaped growth pattern. 3c3b10

The early phase is usually characterized by a search of true identity, by the apparent chaos it entails, and by only a relatively slow real growth. It is typically the R&D phase, the planning phase, or the pioneer's phase. Nothing is clearly settled and many future problems remain unrecognized altogether. It is essentially a phase of breakthroughs (or needed breakthroughs), of high potential, and of great hope. 3c3b11

The next phase is usually a phase of rapid expansion. Problems have been clearly recognized, the needed resources are easily available and the pace of growth is often much faster than generally expected. 3c3b12

The last phase is stabilization and maturation, the phase for linear systems development strategies. 3c3b13

Obviously, the ARPANET user communities are only in the early phase as far as the changed network environment is concerned. THIS SEEMINGLY TRIVIAL FACT IS OF CRUCIAL IMPORTANCE TO THIS PROJECT AND MUST NOT BE DISREGARDED. 3c3b14

On Our Proposed Effort 3c4

Later in this Proposal, in the section "Proposed Effort", we will describe the evolutionary development approach we wish to follow to overcome the difficulties of a rapidly changing environment. 3c4a

We think it is appropriate first, however, to describe the short-term and long-term technical needs that this Proposal attempts to address. 3c4b

Section 4 PROPOSED EFFORT 4

[The terminology and context of this section is defined and amplified in the Appendix.] 4a

Our proposed effort has two components: a SERVICES component, and a DEVELOPMENT component. Under this Proposal, we do not wish to provide the services described here unless the Development component is also supported, at the levels indicated in the "Budget" section. 4b

1. Rech, P. "The Concept of an Evolutionary DEIS"
15-Feb-74 NIC# 21971 (on-line link --hjournal,21971,1:wy) 6a

2. Kudlick, M. "SRI-ARC Proposal for Network and Community Information Centers"
6-Oct-73 NIC# 18369 (on-line link --kjournal,18369,1:wy) 6b

3. Kudlick, M. "Network Information Center: Goals, Problems, Requirements"
26-Nov-73 NIC# 20439 (on-line link --ijournal,20439,1:wy) 6c

4. Perry, J. "Thoughts on the Automated Office"
7-Dec-73 NIC# 20808 (on-line link --mjournal,20808,1:wy) 6d

5. Rech, P. "Towards the Design of an Information Management System"
21-Jun-73 NIC# 17394 (on-line link --jjournal,17394,1:wy) 6e

6. Kudlick, M. "NIC Programming Needs: January 1974"
17-Jan-74 NIC# 21504 (on-line link --gjournal,21504,1:wy) 6f

7. Watson, R. "Some Thoughts on System Design to Facilitate Resource Sharing"
20-Nov-73 NIC# 20391 (on-line link --ijournal,20391,1:wy) 6g

8. White, J. "A Proposed Mail Protocol"
13-Jun-73 NIC# 17140 (not an on-line document) 6h

9. Engelbart, D. "Coordinated Information Services for a Discipline- or Mission- Oriented Community"
12-Dec-72 NIC# 12445 (on-line link --mjournal,12445,1:wy) 6i

APPENDIX: PAST ACCOMPLISHMENTS 7

The past accomplishments of the Network Information Center (NIC) will now be discussed in some detail. This discussion is included in this Proposal for one main reason: 7a

It will, by delineating the extent to which the NIC services have been developed, provide an understandable context in which the gaps in these services can be understood. Therefore, we feel this discussion provides important background information for the section on "Proposed Effort". 7a1

Overview 7b

The NIC's accomplishments over the past three years have been in the following four areas: 7b1

1) Developed prototypical concepts and services for possible extension to other network oriented information centers. 7b1a

2) Provided a mechanism that facilitates correspondence and dialog among the geographically distributed individuals and groups of individuals. 7b1b

3) Provided detailed on-line and off-line reference information about the Network's resources and facilities. 7b1c

4) Stimulated use of and interest in the ARPA Network. 7b1d

The Augmentation Research Center of Stanford Research Institute (SRI-ARC), under contract to ARPA/IPT, has provided the personnel and computer resources that have allowed these accomplishments to be made. 7b2

1: PROTOTYPICAL CONCEPTS AND SERVICES 7c

This part of the discussion describes 7c1

- the concept of NIC Station Agents and Liaisons
- the concept of Dialogue Support
- the concept of a Reference Center 7c1a

2: CORRESPONDENCE AND DIALOG 7d

This part of the discussion describes 7d1

- the NIC "ident" and "journal" systems
- support of special interest groups
- the Arpanet Directory 7d1a

3: DETAILED ON-LINE AND OFF-LINE REFERENCE INFORMATION 7e

This part of the discussion describes 7e1

- the Network Resource Data Base
- the Network Hostnames Data Base
- other Documentation Center aspects of the NIC 7e1a

4: ARPANET USE AND INTEREST 7f

This function has had two aspects: assisting in marketing the ARPA Network and assisting in the development of Network protocols. 7f1

The NIC's staff has taken an active role in introducing

visitors and Network users (both potential and actual) to the Network's resources. This has been done in two main ways: 7f2

- distribution of reference materials to Network Hosts and Associates, 7f2a

- discussions and demonstrations for those who visit the Network Information Center, 7f2b

In addition, the NIC and SRI-ARC staff devoted many man months in helping ARPA prepare for the 1972 International Conference on Computer Communications. 7f3

Finally, others such as the MITRE Corporation have been using NLS and the NIC online Query system to demonstrate the capabilities and potentials of the Network. 7f4

This function of the NIC in marketing ARPANET technology has not been explicitly funded, but has been implicitly accepted and used as part of our services. We have continued this role because we believe it has been of strategic value to ARPA. 7f5

The other aspect of the NIC's role in this area (with support from SRI-ARC), has been active participation in the development of Network protocols, ensuring that the needs for information exchange were adequately addressed. For example, we were one of the prime contributors in the development of the Telnet and Mail protocols, and participated in the design of the File Transfer and Graphics protocols. 7f6

theo (draft)

(J22740) 16-APR-74 08:10; Title: Author(s): Michael D. Kudlick/MDK;
Distribution: /MDK; Sub-Collections: SRI-ARC; Clerk: MDK;
Origin: <KUDLICK>THEO.NLS;24, 29-MAR-74 10:29 MDK ;

Things I understood the Help software would do but doesn't yet

<^Q> at any place in a command would take the user to an appropriate place in the database that would elaborate on what the user would have seen via questionmark. 1

ViewSpecs would work in links. 2

Branch nodes marked to not be menued would display all lines and all levels. 3

Every user typed word that was not located in the Help database would be Automatically remembered in a file for review by database builders. 4

Links marked by a certain Q-spec would be menued within a statement instead of being automatically "INCLUDED" or warped. 5

When the second word of a two word show search was not found, help would take a link at the node addressed by the first word to search for the second. 6

KIRK 16-APR-74 12:11 22741

Things I understood the Help software would do but doesn't yet

(J22741) 16-APR-74 12:11; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DIRT; Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

KIRK 16-APR-74 12:21 22742

My notes of the observations of Sandy trying to learn xnls

My notes of the observations of an intelligent, but cybernetically naive secretary (Sandy Johnson) trying to learn xnls via the HELP system. 1

The three character heralds are not meaningless. They are confusing. I don't think we want to advertise to people that they are in HEL with every command. Three character heralds are an artifact left over from when the Useroptions subsystem was not ~~available~~ to change them. The default should be ALL the characters of the subsystem word or at least four characters: EDIT SEND READ HELP PROG USER CALC, etc. The extra character is the difference between something meaningful and garbage: EDI SEN REA HEL PRO USE CAL etc. 1a

Expert Expert as the default Recognition mode is impossibly confusing for a new user. It should be Expert Anticipatory. The problem is it's too easy to accidently hit a space and be nowhere. 1b

"When I type "<", It prints out some garbage about a subsystem stack instead of returning." 1c

[This was explained clearly ahead of time but the problem kept occurring as it was too confusing to remember.] 1c1

"Why do I have to keep typing Show in front of everything?" 1d

[The Show command causes endless hassles and is impossible to exlain. I predict it would continue to be so even if there WAS a way for the help database to know the user's recognition mode. Which there isn't.] 1d1

The message: "Give MORE command for rest of menu" is confusing. She tried to say "Show MORE". The message should be changed to be consistant with the rest of Help syntax. I suggest: 1e

"Type the command-word "More" for rest of menu" 1e1

Prompts for the Show command "T:/[A]:" are unnecessary and confusing. There is no way for the user to find out about the prompts in the help system because if you try to Show A:, or Show [A]: or Show /, or Show T:, etc. it doesn't work because the database cannot have names with anything but alphanumeric characters, - and '. Not even & can be used in a name. 1f

The help system software must convert :, /, T:, etc. in the Show command to the database equivalent (e.g. colon, slash, t-colon). 1f1

The Execute command doesn't work in HELP even though it shows up

My notes of the observations of Sandy trying to learn xnls

with questionmark. (Of all the universal subsystem stuff that usually confuses the user, this one that would be invaluable to her is prompted, but not available!!!!). 1g

Control-0 dosn't work. 1h

"Everything is too fragmented and random." 1i

Several times Sandy kept saying in many different ways what a hassle it was in order to see all the menu items under one node. It turns out you have to recompute the number of <'s back after each Show. 1j

Showing two valid menued numbers like "Show i 5" results in the message "5 is an invalid menu number" and prints 1. Aside from the brutalness of the message, I think there are other reasons for changing this. It seems to Sandy that it could allow her to show more than one menu item at a time. It seems to me that to be consistent, it should allow you to see menu 5 under menu 1. Either one of these things would be preferable to what currently happens. 1k

The Execute Help command causes the same large branch to print out that Goto Help does. I think Execute Help should instead work like the IDENTIFICATION and CALCULATOR subsystems allowing the user to show one thing and still be in his current subsystem. 1l

Thd b'bj dnnr Vdlbnld ldssage below is not worth seeing everytime you enter HELP. It should go away. It definately should not appear when you enter via the front door (Goto Help). There is already a message telling how to get help with help. 1m

"A brief description of the NLS capabilities you were using follows:" 1m1

"This Help system seems like it would be alright if you already knew NLS, but I would rather have some printed pages to read." 1n

I really feel that the Help system can be used to learn NLS once the initial hurdle of learning how to use help is crossed and it's undefendable limitations are excepted. However, this initial hurdle is probably, for most people much too much of a pain to cross. 1o

KIRK 16-APR-74 12:21 22742

My notes of the observations of Sandy trying to learn xnls

(J22742) 16-APR-74 12:21; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DIRT FDBK; Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

The current status of the Help database

16-APR-74 The current status of the help database is as follows: 1

I would estimate that 70% of the minimal basic information is written. 1a

This includes concepts, command syntax, and command function statements for all subsystems except Useroptions, Calculator, Identification, and those not yet available: Readmail, and Query. This does not include examples. 1a1

Of that already written, I would say 60% needs to be reformatted for more optimal querying and maintenance and 40% needs to be updated for content. 1b

For a list of specific things that need to be done see -- DO>. 1c

The ongoing algorithm (see -- Algorithm) can virtually eliminate links or statement names that don't work but at this stage of the database development, algorithm augmentation, and cpu allocation, it takes about two months to complete one pass of the algorithm. We are about half way through the current cycle. This looping time should decrease by about half each succeeding cycle. The algorithm is intended to eventually loop once a week. 1d

Algorithm of steps for developing the help database:
should loop once a week or as appropriate. 2

Collect FEEDBACK from people reporting innacuracies and problems with HELP and distribute them to QUERY software ~~thth HDLP 'nd dhrtrhbttd thdl tn ptdrx rnftv'rd~~ ddvelopment or place them in the DO list. 2a

Run the Program: <DOCUMENTATION>CHANGES to compare <NLS,SYNTAX,> or with a SINCE (15-JAN-74 09:09); content analyser, to get the latest that has been done. 2b

Change the DATE and TIME in the content analyzer above to the time the content analyser has just been used. 2b1

Update the syntax in help from the changes in <NLS,SYNTAX,>. 2b2

Update the FUNCTION branch. 2b3

Update the Categories branch. 2b4

Update the Subsystem's branch if necessary 2b5

Update the EXAMPLE branch. 2b6

Update the COMMAND branch. 2b7

The current status of the Help database

Update other concepts 2b8

Check the file that holds the record of unsuccessful user show tries. Incorporate these items in the database. 2c

Jump to link <analysis, nnls, Executed> 2d

Place everything in the branch that has been implemented since the last check under a new branch under the Executed branch that contains the current date. 2d1

Journalize the new branch to the appropriate distribution media. (ARPANET NEWS, the replacement for FOLKLORE, other people who request to be on the distribution list) 2d2

```
TITLE:Changes to NLS since DATE and TIME
COMMENT:
AUTHOR(S):HELP
DISTRIBUTION:DVN, KIRK, JMB, JEAN
SUBCOLLECTION:
CLERK:KIRK
GO,
```
2d2a

Copy items that need to be documented into the Do branch. 2d3

Do the items in the Do branch. 2e

Cleanup 2f

Run the program TESTLINKS to see what links don't work. Update these databases accordingly. 2f1

<help,> 2f1a

<trdrfthddr,'rblnb'tnr,> 2f1b

<nic,locator,> 2f1c

For directories that need to be copied at another site. 2f2

After running link test, 2f2a

Get files back from Archive 2f2b

Clean directory and mark the rest of the files not to delete. 2f2c

```
@TELNET
#OFFICE-1
```

The current status of the Help database

```
@LOGIN xxxx
[@CONN NIC]
@NLS
*G P G <hopper>ftpmsys CA
*G P E 1 CA
>Open connection
SRI-ARC NAME PASS ACCT
>Get files
   <NIC>*.nls;*
>Quit CA
*Quit CA
@Arcive *.*;*,
@@ DO<ALT> ARCH<CR>
@@DO<ALT> DEL<CR>
@@<CR>
@LOGO
```

2f2d

Run the program NOSTKR to generate a new names list and make sure there are no troublesome duplicates. 2f3

Generate a new <documentation, names,> when ever needed by running the user program: tstnme. Sort the resulting plex using SORTNOCASE. 2f3a

After adding a name to the concepts branch, Update Compact so that links will always find the right one. 2f4

Place changes that have been made into the Done branch of this file. 2f5

Update this manual to reflect any changes in procedure. 2f6

Update the offline documentation. <userguides, manual,> 2f7

Print out each section at least twice each time as specified below: 2f7a

one page, one line (viewspecs z mGJ) 2f7a1

[all levels, one line] (viewspecs z mGJ) 2f7a2

all levels, all lines. (viewspecs y mGJ) 2f7a3

Print out this file, and the help file to update the help hardcopy notebook. 2g

2h

Dn lhrt: Bh'nfdr th't nddd tn bd made 3

The current status of the Help database

Names that need to be added (or fixed to show up in the right places). 3a

- re-setting 3a1
- resetting 3a2
- Sendmail 3a3
  - Citation 3a3a
  - Author 3a3b
  - Journalized 3a3c
  - Item 3a3d
  - GROUP-IDENT(s) 3a3e
- BC 3a4
- BW 3a5
- SID 3a6
- Commandwords 3a7
- command-words 3a8
- NUmber under Statement 3a9
- Number under Journal 3a10
- Modification under files 3a11
- Effects: as a concept 3a12
- Ownership 3a13
- Write concept for "Write-access" 3a14
- back-arrow and backarrow 3a15
- add angle-bracket in DAE as concept. 3a16
- anglebracket (left and right) 3a17
- greater-than and greaterthan 3a18

The current status of the Help database

less-than, lessthan 3a19

contents (as in "Table of" 3a20

Expert Expert recognition 3a21

Other changes
~~Nthdr bh'nfdr~~ that need to be made in approximate order of expected execution. 3b

The herald business can be deleted under each subsystem since it is a varable useroption whose default is obvious. . 3b1

put all links on the second line. 3b2

all commands from the old system that are not in the new system need to be placed in the branch at the end of help that links from the old command to their new counter parts. 3b3

DO a Lexicon item for every word that's not already in the Database and that appears as a result of "?" in nls. 3b4

Delete references to the following EDITOR commands from categories, COMMAND, SYNTAX, EXAMPLE, & FUNCTION: 3b5

Set Recognition 3b5a

Reset Recognition mode 3b5b

Set Feedback mode 3b5c

Reset Feedack mode 3b5d

[also fix links under concepts recognition and feedback] 3b5e

DCW 28-JAN-74 14:30 21642
New Stuff in XNLS
Message: Two new features are now available in XNLS
USER-OPTIONS subsystem
The USEROPTIONS subsystem is now generally available to users of XNLS. This subsystem allows you to alter system standard settings for a wide variety of parameters. Your modified profile is maintained in a file (in your directory) and will live across NLS sessions.
TRY IT YOU'LL LIKE IT!!
SECONDARY recognition modes
If your primary recognition mode is EXPERT you may now select the recognition mode invoked after typing the "escape" to secondary recognition mode character (SP). The significant difference is that in EXPERT EXPERT mode

only secondary commands are recognized (and shown) after typing a space!
Bugs and Troubles to Smokey...
3b6

Document the new Run, and Kill Tenex Subsystem, and Show Tenex Subsystem Status. 3b7

DAE (is now called just AE--but not when you do a ? in this) 3b8

Important AE changes: 3b9

(name-search) 3b9a

add !name element 3b9a1

add &name element (but not implemented yet--element has % before it) 3b9a2

group (character-search) thru (intra-statement) 3b9b

this is the group describing the searches: character-search, word-search, conent-search, intra-statement. These functions are now replaced by the "TYPEIN"=2c-s and 'CHARACTER=2w, for example; how to use these two new ones for each of the 4 old functions should be described. It might be best to do it in one or two concepts; in that case it would be nice to save the old statement names somewhere, like in LEXICON. 3b9b1

(search) in LEXICON: 3b9c

change that branch to conform to the new concepts it refers to. See branch--0364> above. 3b9c1

DIROPT and ADIROPT 3b10

files in <BECK> to get up to date and put in lexicon. 3b10a

Document the new "fireup tenex subsystem" commands 3b11

File links are now used in all file commands instead of TENEX filenames. Get all TENEX filename references out of HELP. 3b12

Write EXAMPLES for Editor commands: Insert Date; Insert TIme and date 3b13

Rewrite the example for the new Protect command in Editor, see the revised syntax statement (see--0248). 3b14

The current status of the Help database

What does ... do, and in what cases does it work. 3b15

The default directory for typein links is different than the default directory for links in a file. 3b16

Go through help and add alternate spellings (with dashes, synonyms, etc.) to lexicon. 3b17

Add hostname fields to link syntax in help but note that it is not yet implemented 3b18

3b19

kirk Database algorithm, content <help,> 3c

Do help syntax, functions 3c1

Write Example concept under example. 3c2

merge HELP with cue 3c3

<^G> in help should take the user to a reasonable place. 3c4

Do send-mail and read-mail syntax, function 3c5

Link testing program 3c6

(testlinks) 3c6a

Look at the following programs for examples of how to jump to links: (meyer,sysgdform,) (user-progs,sublist,), I think the latter provides a better model. 3c6b

only-colon-named program: 3c7

NAME-colon: Names statements that contain a colon in the first 3c7a

Uname-no-colon: Unnames statements without colons in the first line. 3c7b

Update User programs 3c8

Compile <hopper,utilityplans,srccom> 3c9

Do examples for programs. 3c10

Add Backspace in commands to concepts. 3c11

Backlink system 3c12

Whenever the Insert Link command is used, 3c12a

before it inserts the link, it parses the link and 3c12a1

finds the addressed statement and 3c12a2

places a link appended to the end of the addressed statement 3c12a3

preceded by a carriage return, and 3c12a3a

surrounded by pound signs: #<01234># 3c12a3b

It then inserts the SID of the statement addressed by the hnrdrtdd lhnj 3c12a4

after comment dashes 3c12a4a

after the address inserted by the user, 3c12a4b

If it does not find the addressed statement, 3c12a5

it will insert the link without the "== SID" 3c12a5a

but only after sending out a message and requesting an extra confirmation, 3c12a5b

The delete statement command 3c12b

checks to see if any links delimited by # are in the statement, and 3c12b1

if one is found, refuses to delete the statement. 3c12b2

If the user still wishes to delete such a statement, he must use the Delete Referenced Statement command. 3c12c

The Renumber SID's command will check for links and either not work, or else only renumber those statements without links. 3c12d

You must use the Renumber Referenced SID's command to renumber referenced statements. 3c12e

NP 3c13

This needs to be better worked out and understood.

The current status of the Help database

The option to replace a word with a visible and the option to Combine Move and Replace should be available with BW to backspace over noise words and respecify them, This need not be implmented in TNLS until a better way is found to do it consistently in both systems. 3c13a

Hardcopy 3c14

use index userprog on TNLS Journal user guide, if it works, give to JMB for userguides. 3c14a

HGL 19-DEC-73 15:54 21028 update ident documentation, Imminent IDENT System Changes-- Of interest to programmers and PSO
Location: (MJOURNAL, 21028, 1:w) 3c14b

Syntax for Help, Journal, Readmail, Sendmail, 3c15

3c16

jeanne [Database content, hardcopy writing and updating] 3d

Write Syntax for User-options 3d1

Write Function statements for User-options 3d2

Do OLD-COMMANDS for editor 3d3

Rewrite the function branches for the editor file handling commands (DIrk's former list) 3d4

Items in the AE do not need to be seperated by spaces? Help description misleading. 3d5

3d6

dirk hardcopy writing, editing printouts of database 3e

User-options subsystem 3e1

Help subsystem 3e2

3e3

Future Needs and possibilities 4

The first line of every function statement could be the syntax, 4a

The current status of the Help database

Change all STRING and STRUCTURE references in Function, (syntax and example) to a reference for each command-noun. 4b

Done: Changes that have been made 5

This branch has only recently started to be used. 5a

INSERT as a confirmation character should be changed to OKINSERT to avoid the conflict with t insert command. 5b

(elements) 5c

add !name 5c1

add &name (has % sign before it because not implemented yet) 5c2

add description of +e and -e 5c3

[skip to "end" (last character) of statement] 5c3a

add description of +f and -f 5c4

[skip to "front" (first character) of statement] 5c4a

delete elements: "_" jump to beginning of statement and ">" jump to end of statement 5c5

change the statement starting:
"(TYPEIN)" jumps to link...
to read:
"(TYPEIN)" or "<TYPEIN>" jumps to link... 5c6

change the group of four which describe content search, word search, intra-statement content search, and character search to be these two:
"TYPEIN"=3w=4s
'CHARACTER=2c=2s
[these are examples - w & c are allowed in both] 5c7

Protect command--revise SYNTAX - done. 5d

Insert Date, and Insert TIme and date--in Editor--have been added to SYNTAX, FUNCTION, CATEGORIES, COMMAND, EXAMPLE not written (altho names made) for either one (see above--0378) 5e

5f

Conventions used in developing Help. 6

The current status of the Help database

Statement designators 6a

% (preceeding per-cent sign) makes a statement invisible to the query user. 6a1

] (preceeding right square-bracket) do not menu (number) this statement. 6a2

Name: 6b

Delimiters: 6b1

SYNTAX and EXAMPLE branches 6b1a

The default name delimiter is NULL EOL. Classifying statements that contain neither an example nor syntax; and syntax statements whose first word is the same as the name of the statement have delimiters NULL NULL. 6b1a1

OTHER branches except the SYNTAX and EXAMPLE branches. 6b1b

The default name delimiter is NULL COLON. This is changed to NULL NULL for those statements where the colon does not appear immediately after the first word. 6b1b1

For the maintainer's convenience, named statements have a colon in the first line. Unnamed statements do not. 6b1b2

CONCEPTS and COMMAND branches 6b1c

Statements linking off to commands should not have names in hopes that it will cut down on duplicate names within thd bnnbdptr br'nbh. 6b1c1

Searches:
The link and Show name searches will start with a canonical walk from the beginning of the file every time. Second name elements in a link must be preceeded by an exclamation point. Second name searches in a Show will be limited to the branch defined by the preceeding name. 6b2

Duplications: 6b3

Duplicate names in the concept branch should be avoided. The hassle with duplicate names is that you must remember if it needs a path-name or not. Otherwise, just the one word in the link (or show) is all that is necessary. However, if you cannot get around using a duplicate name, you have a choice between one of the following. 6b3a

1. Place the duplicated name in the Lexicon with links (by path name) to each of the actual definitions. This is the easiest thing for DB maintainer. Both nodes can be made to print in the lexicon (along with substructure), or there can just be some menued text describing the differences with the link to each of the duplicated statement names. 6b3a1

2. Decide on the concept definition that best fits the conflicting name. If this name comes first in the database, provide a link at or after that node to the other definition that happens to have the same name (but is conceptualy much different...otherwise you would have combined the two or put them in the same branch--right?!). Remember to use a path name to get to the second name whenever you want to link or show it. 6b3a2

The only reason for using these methods is if the duplicated name is necessary for a good intuitive path name. Otherwise, the second concept should go unnamed (dont forget to delete the colon from the first line) or changed by hyphenating two words, if necessary, thereby eliminating any duplication. Hyphenation is used extensively in the <help, categories> branch. 6b3a3

Before adding or deleting a name in Help, check the file <documentation, names,> and modify one of the two lists appropriatly. 6b3b

[This is similar to what the programmers do in order keep from conflicting names of procedures. The difference is, they have immediate feedback if their program doesn't work. We don't. So please do this.] 6b3b1

To generate a complete new <documentation, names,> run the user program: tstnme. Then sort the resulting plex using SORTNOCASE. 6b3c

Links 6c

Link delimiters everywhere are ##< left and >## right. 6c1

Each field within a link is seperated by a space as follows: 6c2

[GSPECS] <comments -- site, directory, filename, path !name !search: viewspecs>## 6c2a

Examples: ##<insert !string>## ##<editing>## 6c2b

Statements that are to be menued but contain only a link should have preceeding text on the first line and the link should always be on the second line. 6c3

Insert String command:
##<insert !string>## 6c3a

Linking to 6c4

concepts:
<see -- name !duplications> 6c4a

commands in: 6c4b

Function branch 6c4b1

Since verb Command-words are not duplicated as names in the concept branch, You can link to (and the user can Show) the function statements just by typing the verb (followed by the noun when desired). 6c4b1a

Command to Insert ##<insert *STRING>## 6c4b1b

Syntax branch 6c4b2

Since the name "syntax" is reserved and not to appear anywhere else, you can link and the user can Show the syntax statemets by "syntax verb [noun]". 6c4b2a

##<Syntax !Insert !STRING>##, Show syntax insert word 6c4b2b

Example branch 6c4b3

Since the name "example" is reserved and not to appear anywhere else, you can link and the user can Show the Example statements by "example verb [noun]". 6c4b3a

##<Example !Insert !STRING>##, Show Example insert word 6c4b3b

the special case of SYNTAX:
SYNTAX (along with example, and function) are specially reserved names to keep from having to use statement numbers or SID's in links and to keep from having to use the slow level-by-level search algorithm. There is no problem with example and function as they are not used in the CONCEPTS branch. However, syntax is an important concept as well as a heading for a major branch. As a result, the concept definition is changed to notation wth a link to it in the

top level SYNTAX statement. The statement named "syntax" under "link" in the concepts branch must be left unnamed.. 6c4c

Use of viewspec capital D (names off) in links to: 6c5

Syntax
In links to syntax, viewspec capital D should be used in all cases where there is more than one noun. If there is only one noun available for a verb, the link to the syntax of the command should not contain viewspec capital D. This is easy in the function branch to see because these will all be at a higher level than those verbs with more than one noun. 6c5a

Examples
All links to examples should contain viewspec capital D. 6c5b

Concepts & Functions
In all other cases, use of viewspec capital D is at the descretion of the DB builder. In general it should not be used unless there is lead-in text that would be duplicated by the name of the statement addressed by a link. 6c5c

Q-specs (query viewspecs)
enclosed in square brackets and located between the left double pound sign and the left link delimiter of a link. 6c6

I don't know anywhere where these are used: 6c6a

N=number = only menu "number" items, then ask "more?" default N=15. 6c6b

C = Columnate the menued items. 6c6c

The following Q-specs are not yet implemented. 6c6d

L = Menu this link. (ie., only show one line and give it a number.) 6c6d1

M = Main node only, do not include substructure of addressed node. (this is unnecessary if viewspec e will work in links.) 6c6d2

The following Q-spec is not to be implemented. 6c6e

D=number = do not print "number" lines of the statement addressed by the link. Default number=1. 6c6e1

Lexicon

The current status of the Help database

Keep the LEXICON in aphabetical order to allow for a faster search algorithm in the future. 6d

Function Branch sample 6e

Copy: 6e1

STRING:
This command reproduces a STRING at another location. 6e1a

syntax
##<syntax !copy !STRING>## 6e1a1

example
##<example !copy !STRING>## 6e1a2

effects
After execution the CM points to the last character of the new STRING. SOURCE provides you the choice of TYPEIN, that is, you can "insert" a new STRING, instead of "copying" one, into the new location with this command. For CONFIRM, REPEAT will leave the user ready to specify another SOURCE. Show also: STRING, CM 6e1a3

Nouns for STRING
These are the keywords you can use after Copy in place of STRING: (Show also:) Character, Word, Visible, Invisible, Number, Link, Text 6e1a4

%Nouns 6e1a5

Character:
Copy Character is a special case of Copy ##<Copy STRING>## 6e1a5a

Word:
Copy Word is a special case of Copy ##<Copy STRING>## 6e1a5b

Visible:
Copy Visible is a special case of Copy ##<Copy STRING>## 6e1a5c

Invisible:
Copy Invisible is a special case of Copy ##<Copy STRING>## 6e1a5d

Number:
Copy Number is a special case of Copy ##<Copy STRING>## 6e1a5e

The current status of the Help database

Link:
Copy Link is a special case of Copy ##<Copy STRING>## 6e1a5f

Text:
Copy Text is a special case of Copy ##<Copy STRING>## 6e1a5g

STRUCTURE:
This command reproduces a STRUCTURE at another location. 6e1b

syntax
##<syntax *copy *STRUCTURE>## 6e1b1

example
##<example *copy *STRUCTURE>## 6e1b2

effects
After execution the CM points to the first character of the new STRUCTURE. SOURCE provides you the choice of TYPEIN, that is, you can "insert" a new STRUCTURE, instead of "copying" one, into the new location with this command. For CONFIRM, REPEAT will leave the user ready to specify another SOURCE. Show also: STRUCTURE, CM 6e1b3

Nouns for STRUCTURE
These are the keywords you can use after Copy in place of STRUCTURE: (Show also:) Statement, Branch, Plex, Group 6e1b4

%Nouns 6e1b5

Statement:
Copy Statement is a special case of Copy ##<Copy STRUCTURE>## 6e1b5a

Group:
Copy Group is a special case of Copy ##<Copy STRUCTURE>## 6e1b5b

Branch:
Copy Branch is a special case of Copy ##<Copy STRUCTURE>## 6e1b5c

Plex:
Copy Plex is a special case of Copy ##<Copy STRUCTURE>## 6e1b5d

File: 6e1c

Directory: 6e1d

The current status of the Help database

Archive: 6e1e

Sequential: 6e1f

6f

Userprograms: 7

The program that transfers nls files from office-1 is
<VANNOUHUYS>NETXFER 7a

(auxiliary,rel,) must be loaded to use testlinks, 7b

(paux,) has a Test (links) command and a Help (link test) command, 7c

FILE named % L10 documentation, named.ca % 7d

% Content analyzer for statements with names% 7d1

(named) PROCEDURE (sw); 7d2

REF sw; 7d2a

RETURN (getnmf(sw,swstid)); 7d2b

END. 7d2c

FINISH

7d3

FILE unnamed % L10 documentation, unnamed.ca % 7e

% Content analyzer for statements without names% 7e1

(unnamed) PROCEDURE (sw); 7e2

REF sw; 7e2a

RETURN (NOT (getnmf(sw,swstid))); 7e2b

END. 7e2c

FINISH

7e3

FILE nostkr % l10 documentation, nostkr %
%copy group, bringing everything up to highest level, TNLS only.% 7f

DECLARE curstd; 7f1

The current status of the Help database

```
(nostkr)PROCEDURE;                                              7f2
   LOCAL stid1, stid2;                                          7f2a
   LOCAL TEXT POINTER out, z1, z2;                              7f2b
   % Get parameters %                                           7f2c
      crlf();                                                   7f2c1
      typeas($"Location for output ");                          7f2c2
      tbug($out);                                               7f2c3
      typeas($"remove structure from group: ");                 7f2c4
      tbug($z1);                                                7f2c5
      tbug($z2);                                                7f2c6
      typeas($"Go?");                                           7f2c7
      IF NOT answer() THEN RETURN;                              7f2c8
      stid1 _ grptst(z1, z2: stid2);                            7f2c9
   crlf();                                                      7f2d
   typeas($"In progress");                                      7f2e
   curstd _ out;                                                7f2f
   grpapply(stid1, stid2, scop);                                7f2g
   RDTTRN:                                                      7f2h
   END.
                                                                7f2i
(cop) PROCEDURE (stid);                                         7f3
   IF getnmf(stid)  THEN                                        7f3a
      BEGIN                                                     7f3a1
      curstd _ ccs(curstd, stid, sucdir);                       7f3a2
      END;                                                      7f3a3
```

```
    RETURN;                                                    7f3b
    END.
                                                               7f3c
FINISH                                                         7f4
```

KIRK 16-APR-74 12:43 22743

The current status of the Help database

(J22743) 16-APR-74 12:43; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /RWW MDK DVN JMB &DIRT DCE HGL EKM JHB JCN;
Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;
Origin: <DOCUMENTATION>MANUAL.NLS;87, 16-APR-74 12:33 KIRK ;
The purpose of this file is to contain the important conventions and
step-by-step procedures necessary to maintain the HELP database.

KIRK 16-APR-74 14:36 22744

Help review meeting 19-APR-74

A HELP review meeting has been scheduled for 8:30 Friday morning. This is about the only time when everyone involved, JMB, DvN, HGL, MDK, RWW, EKM, and I can make it. The meeting is not limited to these people. Anyone interested in HELP should feel free to attend. Read (documentation, manual,) for the current status of the Help Database. Read (LJOURNAL, 22742, 1:w) for the current status of someone trying to use xnls.

1

KIRK 16-APR-74 14:36 22744

Help review meeting 19-APR-74

(J22744) 16-APR-74 14:36; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /DIRT; Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

JMB 11-APR-74 22:14 22745

Help Software Need

When the user of New NLS types <control-q>, could you take him to Help's branch explaining the specific command which is the noun with the verb, i.e. Directory under Copy, not just to Copy where he has to choose from among file, statement, directory, etc, if he has already typed the noun before he hit <control-q>? 1

JMB 11-APR-74 22:14 22745

Help Software Need

(J22745) 11-APR-74 22:14; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /HGL(* action *) RWW(* action *) MDK(* action *) ;
Sub-Collections: SRI-ARC; Clerk: JMB;

KIRK 12-APR-74 14:16 22746

Visit Log 12-APR-74 Don Ricker from Syracuse, New York

Don Ricker is a young student interested in three-dimentional computer graphics and visual knowledge. His background is in visual and performing arts. I demonstrated the system for about 30 minutes and answered his questions over lunch. He toured the ARC including the computer room.

1

KIRK 12-APR-74 14:16 22746

Visit Log 12-APR-74 Don Ricker from Syracuse, New York

(J22746) 12-APR-74 14:16; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /KIRK(* info-only *) ; Sub-Collections: SRI-ARC; Clerk: KIRK;

KIRK 15-APR-74 23:14 22747

Definition of Backspace Word (BW)

Backspace Word (BW) is the equivalent of backspacing any number of invisibles ($NP) then any number of visible non letters or digits ($(PT AND NLD)) and then any number of letters or digits ($LD). It is not equivalent to backspacing any number of non letters or digits ($NLD) followed by any number of letters or digits ($LD). However this is the way it is currently implemented in the experimental system. Though this is definately an improvement over backspacing the entire visible which is the way it works in TENEX and in the running system, it means that one (1) BW deletes every one of the following characters in quotes (visibles as well as invisibles):

"Text
(! ##< [**] , >## ,), . . . ?? _" 1

KIRK 15-APR-74 23:14 22747

Definition of Backspace Word (BW)

(J22747) 15-APR-74 23:14; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /CHI(* action *) KEV(* action *) NP(* action *) DVN(
* info-only *) MDK(* info-only *) ; Sub-Collections: SRI-ARC NP;
Clerk: KIRK;

MLK 17-APR-74 08:25 22748

Will send notes to Pinsen

I don't think it's possible for you to reimburse us for the postage and copying. You might address your suggestion to Mike Kudlick and Jim Norton -- but I think they'll just say no.
Marcia

1

MLK 17-APR-74 08:25 22748

Will send notes to Pinsen

(J22748) 17-APR-74 08:25; Title: Author(s): Marcia Lynn Keeney/MLK; Distribution: /VGC; Sub-Collections: SRI-ARC; Clerk: MLK;

Simple Categorization of OFFICE-1 Feedback 1

INTRODUCTION 2

I have just completed a perusal and simple categorization of OFFICE-1 feedback covering the period February 6 to April 3. The numbers in parenthesis following an item indicate the number of different users who had a question or problem on that subject. In some cases, a person submitted more than one item with the same question or problem. Such cases were counted only once. I was surprised at the sophistication of the questions and summarize the feedback for your information below. 2a

SUMMARY 3

Operational 3a

Hardware 3a1

Imlac (3) 3a1a

TIP (2) 3a1b

Dialing (1) 3a1c

Line Noise (1) 3a1d

Want 110 Baud connection (1) 3a1e

Want Line Processor (1) 3a1f

Software & Other 3a2

Rdt up Directories and Idents, and change File Space (5) 3a2a

Journal Files not online (2) 3a2b

Slow Journal (2) 3a2c

Slow System (1) 3a2d

Slow Archive (1) 3a2e

Archive not happening (1) 3a2f

System Down Too Early (1) 3a2g

Error Messages & Weird States 3b

Simple Categorization of OFFICE-1 Feedback

(J22749) 17-APR-74 11:39; Title: Author(s): Susan R. Lee/SRL;
Distribution: /RWW DCE JCN JHB MDK CHI RLL PR DVN; Sub-Collections:
SRI-ARC; Clerk: SRL;
Origin: <LEE>UTILFEED.NLS;5, 17-APR-74 11:37 SRL ;

WRF 17-APR-74 12:18 22750

Party for Smokey and Bacchus in Foothill Park

As you all must know, Friday is Smokey's last day here. To honor this fine Bear, we are having a party at Foothill Park, starting at 4:00pm. We would like to make it a supper picnic, so if you can, please bring someing to eat, drink, play with, (or any items of special interest to you). Foothill is only available to Palo Alto residents, so everyone should get together to share rides. Also, each Palo Alto driver can claim a following car-load as his(her) "guests".

See you all at 4:00. 1

WRF 17-APR-74 12:18 22750

Party for Smokey and Bacchus in Foothill Park

(J22750) 17-APR-74 12:18; Title: Author(s): Ferg R. Ferguson/WRF;
Distribution: /SRI-ARC BOBM JIMB; Sub-Collections: SRI-ARC; Clerk: WRF;

KEV 17-APR-74 13:41 22751

xnls and backspace word

Backspace word will soon be changed in XNLS to back over any number of non-printing characters, then any number of non-letter-or-digit printing characters, and finally over any number of letters or digits.

KEV 17-APR-74 13:41 22751

xnls and backspace word

(J22751) 17-APR-74 13:41; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /SRI-ARC(* info-only *) ; Sub-Collections: SRI-ARC; Clerk: KEV;

HGL 18-APR-74 08:59 22752

Missing book: "Automated Legal Research"

If you have a copy of the book "Automated Legal Research" which you borrowed from me, please return it. 1

HGL 18-APR-74 08:59 22752

Missing book: "Automated Legal Research"

(J22752) 18-APR-74 08:59; Title: Author(s): Harvey G. Lehtman/HGL;
Distribution: /SRI-ARC; Sub-Collections: SRI-ARC; Clerk: HGL;

HGL 18-APR-74 09:15 22753

Response to Kirk's note on things missing in the current version of HELP (22741,)

The following presents my current view of the suggestions offered by Kirk in (22741,). A list of things to be done to the Help system which I feel are of pressing importance follows in the next branch. I do not feel at all badly about bringing up the current system for trial use at ARC. The current limitations are well defined and probably cannot be removed immediately given the current programmer peoplepower shortage and the gross amount of things to clean up in the rest of NLS. 1

It is presently not technically feasible for <"Q> typed at any place in the command to put the user at the (most) appropriate place. (e.g., at the description of entities within a command or the description of level adjust.) This is certainly a desirable feature, but one that most properly awaits the rewriting of the CML interpreter. 1a

Viewspecs currently do not work in links in the database for no reason other than the fact that we didn't get around to fixing the code. Before this can be done, however, we must first examine what conflicts are present between certain viewspecs and the rest of the Help system. I prefer not to attack this problem immediately; a solution should be implemented before 1 July. There is, I feel, no pressing immediate need for it; if there is, action could be accelerated. 1b

It was my impression that nodes marked not to be menued would display all lines, but NOT all levels. The code currently works this way. If forced, I suppose the code could be modified to show all lines, all levels of such branches, but there would a definite conflict with the current help sequence generation algorithm. Again, I fell no pressing need for the feature, but I suppose it could be implemented with moderate difficulty. 1c

What a wonderful idea to have every typed word not located in the Help file "remembered" in a file for review by database builders. It would, however, probably slow the system down from its currently sluggish but tolerable pace. Luckily, if I had been aware of the idea I had conveniently forgotten it. This could be implemented relatively easily, but would make the system VERY slow whenever an unknown word were discovered. (System would connect to the special directory, try to get access to the record file, wait if it were busy, write and update in it, reconnect to the directory the user was in and continue. This is all similar to things the Journal does.) 1d

That links would be menued within statements is a reasonable extension which currently does not exist. Again, it is relatively low on the stack. 1e

HGL 18-APR-74 09:15 22753

Response to Kirk's note on things missing in the current version of HELP (22741,)

The suggestion that the Help system take links when it does its searches is easily implemented, but would slow the system down considerably. 1f

Some important things to do to Help software: 2

Get Query to work with both standard system data bases (resource notebook, Arpanet News, etc.) and general user data bases. Most of the code exists for this already, but it will not be in the system brought up for use at ARC next week. More debugging in required and some modifications in the code are needed. 2a

Finish debugging multi-file database cross file searches. 2b

Fix Help/Query so that users may bug menu selections. Requires allocation of all strings "sent" by the sequence generator so LSRT table string addresses are valid for bugging. Also requires new entity for LSEL== "NODE", which will put up the proper prompts permitting a text string or a single bug which would be translated into a help node selection. 2c

System messages should be obtained from the database files rather than from the code. (A design for this already exists.) 2d

Other QSPECs which were promised should be implemented. 2e

HGL 18-APR-74 09:15 22753

Response to Kirk's note on things missing in the current version of HELP (22741,)

(J22753) 18-APR-74 09:15; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: /DIRT; Sub-Collections: SRI-ARC DIRT; Clerk: HGL;

JHB 18-APR-74 09:28 22754

Recommended default useroptions for New NLS

BASIC DEFAULT MODULE for New NLS 1

These are the recommended defaults for user settable options in response to a request from DCW and CHI. Note the summary (Summary). (Changes from the current default are noted*) 1a

Feedback mode: VERBOSE (alternatives: terse, length, indenting) 1a1

Prompt mode: PARTIAL (alternatives: off, full) 1a2

Recognition mode: FIXED (alternatives: anticipatory, demand, expert) 1a3

Herald mode: VERBOSE, length: 3 (alternative: terse, "*") 1a4

Current Context length: 7 1a5

Jump return: 10 filereturn: 10 1a6

Level adjust prompting: Off (*change, no field) 1a7

Viewspecs 1a8

levels: ALL, lines: ALL, hjm(*change)puzACFHJLP 1a8a

viewspec prompting: Off (*change, no field) 1a8b

Control Characters: 1a9

Standard Definitions (non-alterable): 1a9a

CA:<^D>, CD:<^X>, RPT:<^B>, INSERT:<^E>, BC:<^A>, BW:<^W>, 1a9a1

BS:<^Q>, LITESC:<^V>, IGNORE:<^S>, SC:<^S>, SW:<^S>, TAB:<^I> 1a9a2

User Definitions (alterable): 1a9b

33ASR CA:[<EOL>,<NUL>] RPT:[<ESC>,<^B>] 1a9b1

35ASR CA:[<EOL>,<NUL>] RPT:[<ESC>,<^B>] 1a9b2

37ASR CA:[<EOL>,<NUL>] RPT:[<ESC>,<^B>] 1a9b3

TI/EXECUPORT CA:[<EOL>,<NUL>] RPT:[<ESC>,<^B>] 1a9b4

NVT CA:[<EOL>,<NUL>] RPT:[<ESC>,<^B>] 1a9b5

JHB 18-APR-74 09:28 22754

Recommended default useroptions for New NLS

ALL DEL or RUBOUT: [<NUL>,noise] (*change) 1a9b6

Print Options 1a10

Margins left: 0, right: 72, bottom: 63 1a10a

page size: 66, indenting per level: 3 1a10b

tabstops: 8,16,24,32,40,48,56,64,72,80,88,96,104 1a10c

Statement Name Delimiters (currently settable on a file basis) 1a11

Suggested left: <NUL>, right: . (*change to directory basis if possible) 1a11a

(Summary) Summary: 1b

The new user who has had no training or prior NLS exposure would not see viewspecs, hierarchial levels, or variable character recognition (or the prompts for these). A mechanism will have to be set up whereby he can easily advance beyond this limitation, probably by contacting UD, who will change the option settings, or (when developed, see below) select a pre-set package of useroptions by calling a subsystem such as "NLS2".. 1b1

The application purpose of this limited offering is to enable a user to prepare and send text. Thus, we offer that basic capability as a concrete response to the criticism that NLS is too complex, etc. Some changes are necessary in the command set available, but this will require programming modification and a complete set of graduated NLS modules from basic default through total capability (design recommendations forthcoming). 1b2

JHB 18-APR-74 09:28 22754

Recommended default useroptions for New NLS

(J22754) 18-APR-74 09:28; Title: Author(s): James H. Bair/JHB;
Distribution: /CHI DCW SRI-ARC(for your information/comments)
DLS(comments?) CKM(information/comments); Sub-Collections: SRI-ARC
SRI-ARC; Clerk: JHB;

WRF 18-APR-74 09:32 22755

Skipping Merrily from Foothill to Huddart Park

Since we appear to have very few PA residents in our group, it seems that trying to have the party in Foothill will be a problem, So we will have Smokey's party in Huddart Park instead. (See map next to food list if you're not sure of the route.

WRF 18-APR-74 09:32 22755

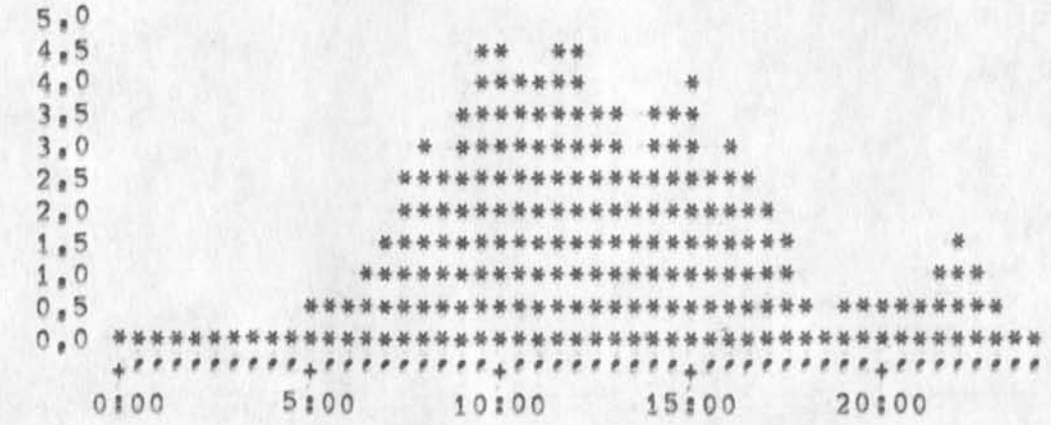
Skipping Merrily from Foothill to Huddart Park

(J22755) 18-APR-74 09:32; Title: Author(s): Ferg R. Ferguson/WRF;
Distribution: /SRI-ARC BOBM JIMB; Sub-Collections: SRI-ARC; Clerk: WRF;

SRL 18-APR-74 09:44 22756

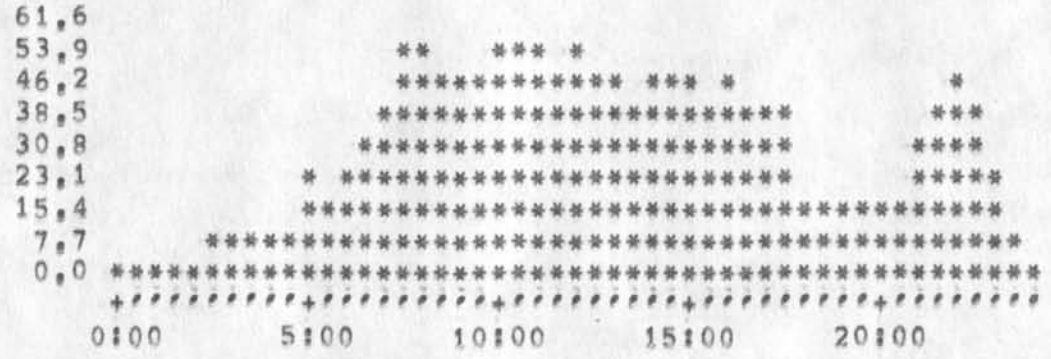
Superwatch Average Graphs for Week of 4/7/74

TIME PLOT OF AVERAGE NUMBER OF GO JOBS FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 1



1a

TIME PLOT OF AVERAGE PER CENT OF CPU TIME CHARGED TO USER ACCOUNTS
FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 2

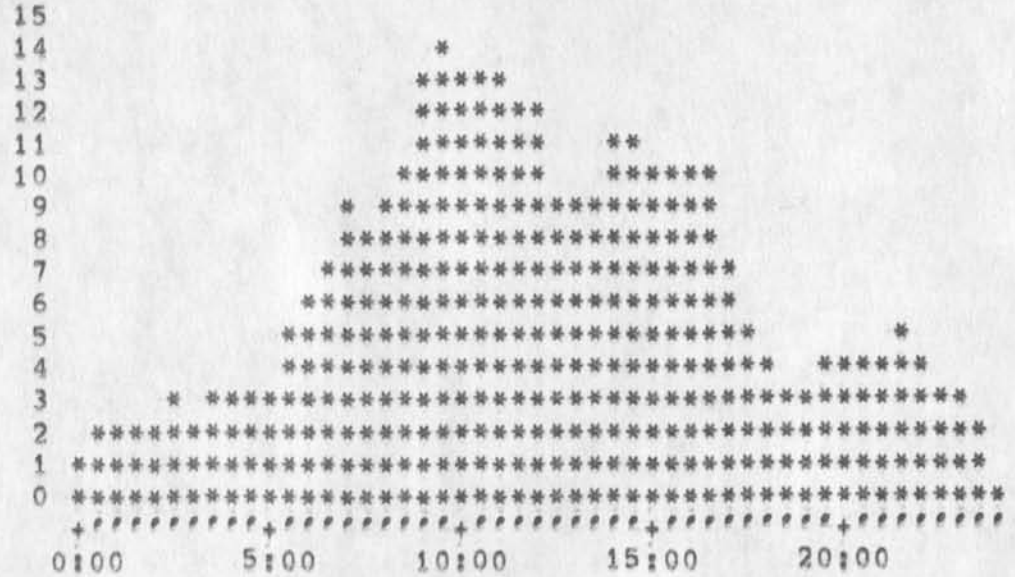


2a

SRL 18-APR-74 09:44 22756

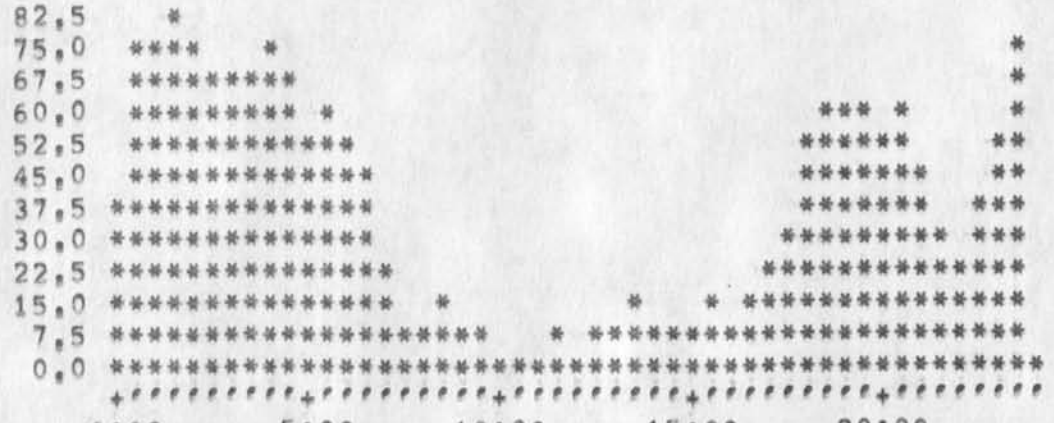
Superwatch Average Graphs for Week of 4/7/74

TIME PLOT OF AVERAGE NUMBER OF USERS FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 3



3a

TIME PLOT OF AVERAGE IDLE TIME FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 4

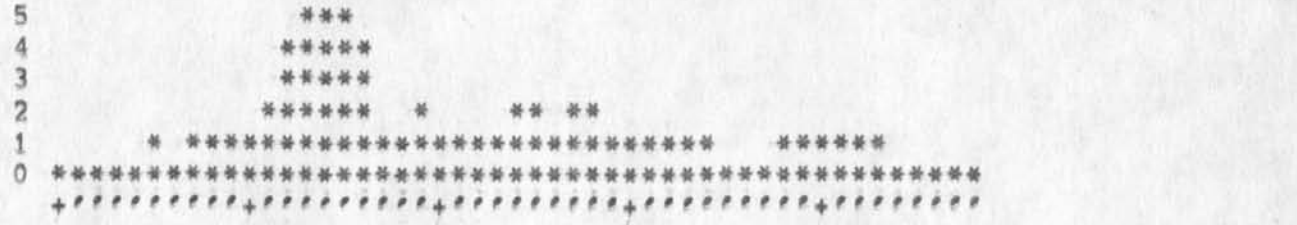


4a

SRL 18-APR-74 09:44 22756

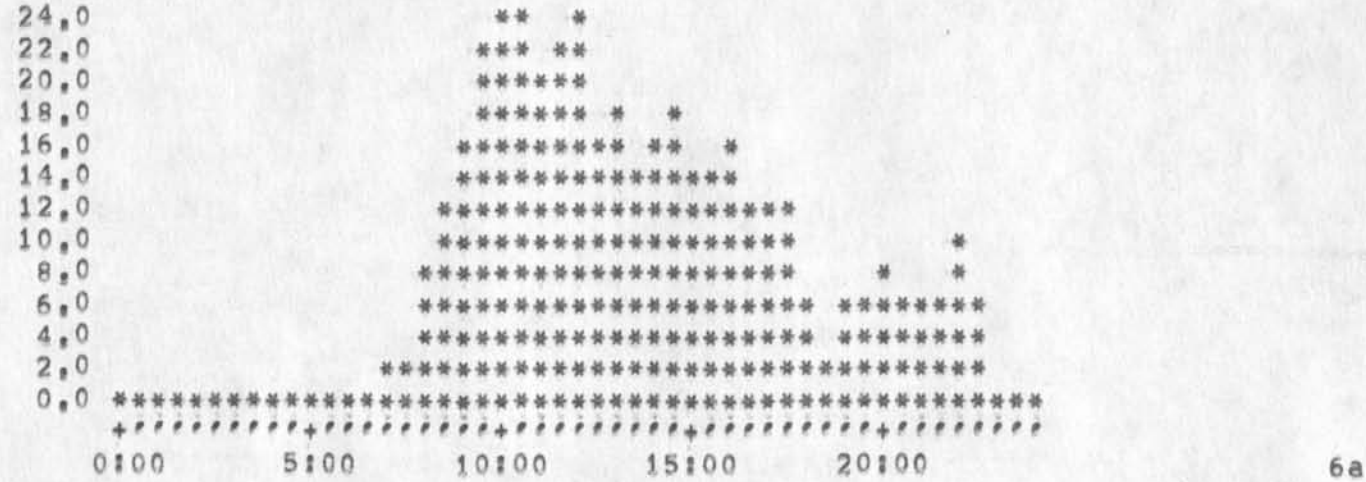
Superwatch Average Graphs for Week of 4/7/74

TIME PLOT OF AVERAGE NUMBER OF NETWORK USERS FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 5



5a

TIME PLOT OF AVERAGE PER CENT OF SYSTEM USED IN DNLS FOR WEEK OF 4/7/74
x axis labeled in units of hr:min, xunit = 30 minutes 6



6a

SRL 18-APR-74 09:44 22756

Superwatch Average Graphs for Week of 4/7/74

(J22756) 18-APR-74 09:44; Title: Author(s): Susan R. Lee/SRL;
Distribution: /JCN RWW DCE PR JCP DVN JAKE DLS BAH; Sub-Collections:
SRI-ARC; Clerk: SRL;
Origin: <LEE>WEEK4/7GRAPHS.NLS;2, 18-APR-74 09:39 SRL ;

Living Information Handling and Retrieval

Guess my general sense of tidiness made me go ahead and journalize it....

Living Information Handling and Retrieval

Jim Norton linked to me and chatted a few minutes tonight and set me to thinking about some of the approaches to Doug's "knowledge work" that the ARC environment could handle beautifully, but which I have not seen even suggested as yet ... much to my sorrow. What follows is a brief discussion of the philosophy and techniques of handling "living information" as against storage of "dead information". I have used the former techniques in my professional life for many years and find it highly workable. Some form of this technique is used by every knowledge worker, whether he uses the same words or not, whether he considers his action as a whole or fragments it in his mind as necessary tasks preliminary to getting a particular job done.

1

A knowledgeable, concerted approach to setting up such handling of "living information" could possibly be an interesting project for some clients.

2

From a long and rugged life as a free lance writer (both part time and full time), I have found the following method of handling information retrieval of value for

3

Writing speeches (particularly where the association is a long-term one, and of ghost writing for some busy executive type)

3a

Journalism - (every good newspaper office has the concept given below; it is usually called "the morgue", although in some newspapers and news syndicates the actual morgue is photos and cuts and the database is separate)

3b

Free lance writing (the free lancer must find his own stories, techniques, sources, and publication outlets on his own initiative; such an approach as below is highly critical to his success)

3c

Politically oriented executives who have many responsibilities for news and information dissemination (in highly complex situations such as this, the fine tuning of political awareness -- politics here defined not in the sense of "Democrat and Republican", but as dynamic interplay of decision-making where all the "lines of force" are not contained by the one person --is vital, and must be "instantly" available. The enormous complexity of some situations requires a sophisticated system to give a true overview of the complex factors involved, and an analysis of the probabilities of

the effects of various "potential" actions.)

3d

Assistance to speech, public appearance, and interview writing could profitably be set up by preparation of a database in the following structure and content:

4

Top approach level - bibliographic

4a

Second approach level - author indices

4b

Third approach level - combined titleword/keyword indices

4c

Search approach level - concept indices

4d

Working approach level - extended abstracts which include long quoted passages where particularly applicable to the concept (include reference notations for quote acknowledgements)

4e

Review or state-of-the-art approach level - indices with annotations, set up with major headings of

4f

- o People of note in the discipline, with annotations of quotes from their papers, talks, comments, interviews, with dates, references, and circumstances of their comments (i.e., in an interview, at a speech and where, etc.)

4f1

- o Events of interest, either past or potential; description of dynamics of events, people involved, background, effects

4f2

- o Resources involved; description same as above

4f3

- o Problems involved; analysis, probablities, probable futures

4f4

Political involvement approach level - particularly relevant if client is a federal bureau or agency; include international as well as national.

4g

Note that this list of approach levels is NOT a bibliographic list, but is a working approach list. Bibliographic databases are of interest to reference and research librarians and that is about all -- when they are merely bibliographic databases. A bibliographic database is merely step number one in actual USE of that information. This can readily be seen if the enormity of the database and its handling techniques can be set aside and one can look at UTILITY instead of COLLECTION -- collection as an end unto itself is merely a hoarding of trivia; utility is the dynamism of living information as against dead storage.

5

Note also that the above list is NOT just a bibliographic one -- as "living information", it is created and maintained from the viewpoint of NEED FOR INFORMATION, not from COLLECTION of information with inbuilt restrictions as to structure and form. Here structure and form are applied after the need is defined; need is not forced to conform to a pre-set structure and form.

6

If this approach seems of any value to you, I can go into it in some depth showing how such databases are set up and how they are used to advantage.

7

Living Information Handling and Retrieval

(J22758) 18-APR-74 12:54; Title: Author(s): Mil E. Jernigan/MEJ;
Distribution: /DCE JCN RWW; Keywords: Information retrieval IR;
Sub-Collections: SRI-ARC; Clerk: MEJ;
Origin: <JERNIGAN>FEO,NLS;1, 14-APR-74 22:08 MEJ ;

JEW 18-APR-74 13:49 22759

Network Information

The SRI IMP will go down (as if it weren't already) at 5:30 PM today for continued hardware work. 1

JEW 18-APR-74 13:49 22759

Network Information

(J22759) 18-APR-74 13:49; Title: Author(s): James E. (Jim) White/JEW; Distribution: /SRI-ARC VGC DCL; Sub-Collections: SRI-ARC; Clerk: JEW;

KIRK 18-APR-74 13:39 22760

Help with Help message

"again" should be deleted from the "For help with Help" message. 1

KIRK 18-APR-74 13:39 22760

Help with Help message

(J22760) 18-APR-74 13:39; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /HGL(* action *) &DIRT(* info-only *) ;
Sub-Collections: SRI-ARC DIRT; Clerk: KIRK;

KIRK 18-APR-74 13:44 22761

Order of the interrogate command

(type of source:) should come after (title:) and (send to:) so a message could be written in relation to the title and sendlist. 1

KIRK 18-APR-74 13:44 22761

Order of the interrogate command

(J22761) 18-APR-74 13:44; Title: Author(s): Kirk E. Kelley/KIRK;
Distribution: /NEWNLS(* action *) ; Sub-Collections: SRI-ARC NEWNLS;
Clerk: KIRK;

JMB 18-APR-74 19:04 22762

HELP software/database - the manpower comes from somewhere anyway

Items 2 & 3 of the Help software design requirements listed in (LJOURNAL, 22741, 2) through (LJOURNAL, 22741, 3) are necessary & extensively used features for the way I've written the Help Database, that is, I will have to do extensive rewriting of many parts of the DB if they are not implemented, in order for tat information t be available to the user. The last 3 will not cause any immediate problems (I did not assume those things in my writing). Therefore, if XNLS becomes the NLS without 2 and 3 being implemented, I will go ahead and do that rewriting (at least put it on my list of priorities) in order for the affected parts of the data base to function.

1

JMB 18-APR-74 19:04 22762

HELP software/database - the manpower comes from somewhere anyway

(J22762) 18-APR-74 19:04; Title: Author(s): Jeanne M. Beck/JMB;
Distribution: /DIRT; Sub-Collections: SRI-ARC DIRT; Clerk: JMB;

NDM 19-APR-74 08:12 22763

Line Processor Troubles

This has happened to me both on ARC and Office-1, I have Quit (old) NLS and found myself in a state where a lower case letter is interpreted as a control character (I type "t" and get "LOAD..." or "c" and get a <control-c>. Breaking my TIP connection, re-establishing a connection, then attaching seems to cure it. 1

NDM 19-APR-74 08:12 22763

Line Processor Troubles

(J22763) 19-APR-74 08:12; Title: Author(s): N. Dean Meyer/NDM;
Distribution: /DIA CHI; Sub-Collections: SRI-ARC; Clerk: NDM;

CHI 19-APR-74 08:34 22764

LP problems

Re: 30496 and 30494, Sent to NDM, DIA

CHI 19-APR-74 08:34 22764

LP problems

Dean, Due to the large number of applicants and visitor this week, I have had virtually no time to debug know LP problem. I will try the Journal Distribution list stuff and determine what is wrong. Yes, we will try to make it solid with old nls. The business with the TIP intercept character is quite bothersome news. What have you been using instead of @? -- Charles 1

CHI 19-APR-74 08:34 22764

LP problems

(J22764) 19-APR-74 08:34; Title: Author(s): Charles H. Irby/CHI;
Distribution: /NDM(* info-only *) DIA(* info-only *) ;
Sub-Collections: SRI-ARC; Clerk: CHI;