In response to everyone's responses, let me respond:

I withdraw my numerous objections/suggestions, as long as we don't call it THE network Editor. How about calling it EDS (since that's what it is)?

The proposed editor does not reflect the wisdom of the Network. It is not, in my mind, a particularly great editor, tho it is clearly usable. My objections run along the lines of "what will it be like for a non-computer person to learn?".

Expediency has been a consistently poor reason for choosing an existing mechanism, instead of developing a better one. Therefore, don't tout it as THE network Editor.

More on "NETED"

(J17570) 29-JUN-73 12:47; Title: Author(s): David H. Crocker/DHC; Distribution: /USING; Sub-Collections: NIC USING; Clerk: DHC;

Journal Bug??

I just received a journal message link for Document (17564,) entitled DNLS COUSE OUTLINE and dated 29-JUN-73. I attempted to read it and got 'No Such Document'.

Hmmm.

1

Journal Bug??

. . . .

(J17571) 29-JUN-73 12:54; Fitle: Author(s): David H. Crocker/DHC; Distribution: /BUGS; Sub-Collections: NIC BUGS; Clerk: DHC;

mail problem

is there any way that a journal message can be retrieved after it has been deleted? I had journal mail and accidently destroyed it before I could read it. (I typed r b .journal - thinking r for "read" instead of p for "print". the result was I replaced the branch with null text.) If the message itself can't be restored, is there anywhere else I can look to see who It was from?

thanks, gary

1

mail problem

(J17572) 29-JUN-73 13:57; Title: Author(s): Gary L. Bockweg/GLB; Distribution: /SRL; Sub-Collections: NIC; Clerk: BAR2; Origin: <ARPA>RUIN.NLS;1, 29-JUN-73 13:42 BAR2;

About the only place of which I know that uses Jovial is Systems Development Corporation [believe they were early developer of JOVIAL]; for information, call Jerry Cole: (213) 393-9411 ext. 6186 - he is a nice guy.....Incidentally, was delighted with your response to NETED - really great to see group incentives ascribed more importance than personal desires. My sentiments, which I expressed to Mike were very much along the same lines - think that going with an available, tried one will ultimately lead to better one faster and in a more sure manner. Incidentally, Ron, we will send you a draft copy of the user network handbook soon, within a week or two - would very much appreciate your telling JRP who has been most gratious to our invitation for collaboration and coordination in this area - will try to write him a response in very near future. Also, thank you for your efforts on behalf of the newsletter article - [it is great and will write Roland a note to that effect]. Hoping to see you all in the fall sometime. With warmest regards, Jean I.

(J17573) 29-JUN-73 13:58; Author(s): Jean Iseli/JI; Distribution: /RMS JRP(will write you a note soon, thanks) RFB(thank you for the fine article, really appreciate it : Jean); Sub-Collections: NIC; Clerk: JI;

I would like to cast my small vote in confidence with the evolving majority opinion - going with something that works should enable us in the long run to progress more surely towards our desired goals - believe Mike merits our expression of thanks for his rapid response, Jean.

10.00

1

(J17574) 29-JUN-73 14:07; Author(s): Jean Iseli/JI; Distribution: /USING; Sub-Collections: NIC USING; Clerk: JI;

. .. -

. .

Charles, Would it make sense to have two separate print commands (hopefully both mnemonic), such that one will not reset the pointer and the other will? I guarantee that I would use the non-resetting one most (if not all) of the time, and so would, I think, a lot of others (especially new users). On the other hand, it's probable that the resetting one serves a usefuly purpose; also, people who like it shouldn't be penalized.

(It's too bad that the default is to reset the pointer and that extra work is required to undo it. I would probably have recommended the opposite, i.e. that the pointer be reset only if the user said to.) As for the suggestion that the pointer be reset on to and not otherwise, that doesn't appeal to me, because I imagine it would do the wrong thing fairly often and it seems somewhat non-intuitive (perhaps inconsistent).

One disadvantage of having two commands is the proliferation of commands, which you might prefer to avoid. You could consider having a single print command and adding an extra argument for resetting the pointer, with a default of not resetting it (or vice versa). Offhand, though, two separate commands seems better to me. Eleanor Warnock

More about the print command

(J17575) 29-JUN-73 14:23; Title: Author(s): Eleanor H. Warnock/EHW2; Distribution: /CHI; Sub-Collections: NIC; Clerk: EHW2;

Why Laura Gould should Come to ARC

Our contracts man will use this text for a formal letter asking to use project money to pay Laura's expenses.

BBN in Boston is developing a computer aided instruction system called SCHOLAR. The Air Force Electronic Systems Division at Hanscom Air Force Base partly sponsers this work. For some time people in the SCHOLAR program have been studying NLS as a subject for trial applications of SCHOLAR. Sylvia Meyer of SSD has also discussed teaching NLS through SCHOLAR with the staff at Rome Air Development Center.

Last week Mike Kudlick and I were at BBN teaching NLS. Several members of the SCHOLAR program audited the class to study the learning/teaching process. We talked with them at some length about the problems of learning and teaching NLS and allied matters. We were particularly struck by the sensitivity and analysis of one staff member, Laura Gould. In addition to programming experience, she is trained and experienced in both the theory and practice of teaching. Mike Suggested and I immediately agreed it would be worth while for her to come to ARC to share her thought with others at ARC, particularly those concerned with rationalizing the command language and adapting it to novices.

(J17576) 29-JUN-73 14:35; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /EKM MCG MDK CHI EKM JCN LPD RWW DCE DLS; Sub-Collections: NIC SRI-ARC; Clerk: DVN; Origin: <VANNOUHUYS>SCHOLAR.NLS;3, 29-JUN-73 14:25 DVN;

As a member of the Journal Design Team, I'd say there is such a possibility. We are currently spending resources on some other areas. However, your suggestion has come up and the need is recognized.

1

(J17577) 29-JUN-73 14:38; Title: Author(s): Diane S. Kaye/DSK; Distribution: /DHC; Sub-Collections: SRI-ARC; Clerk: DSK;

Pam, Here I am again. I need more copies of the yellow and blue booklets that ARPA puts out: The Arpa Network and Resource Sharing Computer Networks. I will be needing 20 of each. Can you send them sometime soon? Thank you Marcia.

1

Yellow and Blue Books

(J17578) 29-JUN-73 14:55; Fitte: Author(s): Marcia Lynn Keeney/MLK; Distribution: /PJK; Sub-Collections: SRI-ARC; Clerk: MLK;

i will not be able to attend the network graphics meeting as i will be on vacation july 17-26.

(J17579) 29-JUN-73 15:37; Author(s): Jonathan B. Postel/JBP; Distribution: /SRB AAM; Sub-Collections: NIC; Clerk: JBP;

could you please correct the spelling of my first name of the inwg mailing list? the correct spelling is "Jon". thank you.

(J17580) 29-JUN-73 15:40; Author(s): Jonathan B. Postel/JBP; Distribution: /MLK; Sub-Collections: NIC; Clerk: JBP;

2

3a

3h

3c

3d

## THE VELA PROJECT AND SOME MISCELLANEOUS NOTES

The following rough notes summarize my present views about the VELA Project and our possible relations to them. They include some notes I have taken during a meeting of the "Seismic Data Working Group" (SDWG) I have attended in Washington D.C. on May 29th as well as a statement of the goals and purpose of the project. I have gotten the latter material, via TELNET, from the VELA directory at USC-ISI.

## INTRODUCTION AND SUMMARY

The objective of the VELA project is to design, develop, operate, and evaluate a world-wide seismic data collection, processing, analysis, and storage system which will be using satellite communications, the ARPANET, large frame special purpose computers, and newly developed mass storage systems. Its purpose is to investigate the important remaining problems affecting the seismic verification of a comprehensive TEST BAN TREATY and to obtain the operational experience necessary to design an optimium seismic verification system.

Thus, the VELA Project is a very large scale project involving many geographically distributed contractors whose tasks and schedules are tightly interrelated. The management of such a large project is a difficult task by itself which, in this case, is compounded by the fact that many iterations in the design of the seismic verification system will probably be necessary to arrive at the desired optimal configuration.

Consequently, given that slippages in the development schedules and rates of expenditures will have serious consequences, any improvement in communications, information handling procedures, and support to the group cooperation process will have a significant impact on the final outcome of the project.

Thus, the VELA project is an ideal candidate for possible "augmentation" by the NLS technology. It appears that it would be beneficial for both the project and ARC to introduce the existing NLS technology, procedures and methodologies into the VELA project, and to study how these techniques can be adapted to such an environment.

Basically, the Vela Project has a primary need for project management support. It is made up of a group of contractors whose interactions and schedules are tightly interrelated. The organization of the project is centralized under ARPA's leadership with spurs going towards the various contractors. This organization requires a great deal of formal and, most

importantly, informal communications between the geographically distributed parties of this project. There is a need for frequent reporting and many informal information exchanges about the latest developments.

30

Therefore, this project seems to present an application possibility where the power of NLS could probably be demonstrated. Provided easy access to NLS could be guaranteed to the main parties concerned and enough initial technical support could be given to the project it could probably be demonstrated quite easily that the use of the presently available augmentation techniques could be beneficial for the management of large scale projects.

3 f

They have a need for a quick and reliable message system. The SNDMSG feature available on the ARPA network seems ideal for that purpose. For more elaborate information exchange and processing a type of journal system adapted to their specific needs would probably be worth considering. I believe that in the long run it would be the availability of such a system which would really make a difference in the final outcome of this project. The necessary iterative process for arriving at an optimal design of the seismic verification system would certainly be facilitated.

3g

## TYPE OF SUPPORT ARC COULD PROVIDE FOR THE VELA PROJECT

The VELA project is considering using NLS for facilitating its communication needs and project management requirements. They are contemplating sponsoring a low level back up project over a one year period to get our support and gain access to our engineering services.

4a

The purpose of the project could be twofold.

4b

1) To assist the management of the VELA project and its contractors in the utilization and evaluation of NLS.

4b1

2) To study how project management can be facilitated by the use of NLS, to assist the VELA project in developing appropriate procedures for that purpose, and to make recommendations leading to an effective on-line project management system.

462

In particular, we could study the possibility of adapting known project management techniques, such as CPM and PERT, for use within the NLS framework.

4b2a

The work could cover the following tasks.

4c

4c1

4c2

techniques available on the ARPA Network.

involved parties. This could include:

providing live space, identifications, bassaces and same	
system resources to accommodate up to four initial users	
	4c2a
until the NLS Utility becomes available, and	
giving assistance in the use of the available procedures to	
assure the privacy of file access.	4c2b
assure the privacy of the assesse	
3) Provide support for the distribution of hard copy	
information through NIC.	4c3
4) Participate in the analysis of their information handling	
problems and assist them in the development of appropriate	
solution procedures.	4c4
457 B (1917-1919) (B (1917-1919) (B (1917-1917-1917-1918) (B (1918-1918-1918-1918-1918-1918-1918-1918	
5) Help in the development and utilization of an on-line	
project management information base, and participate in the	
assessment of its effectiveness for project coordination and	
control.	4c5
사용 사용 하나 나는 사람들이 되었다면 가는 사용 사용이 되었다면 하는 사람들이 되었다면 보고 있다면 하는데 하는데 되었다면 하는데 하는데 되었다면 하는데	
6) Make recommendations towards the design of an on-line	
project management.	4c6
THE VELA PROJECT	5
THE VERY TAGGET	
	5a
OBJECTIVE OF THE VELA PROJECT	34
To design, develop, operate, and evaluate a world-wide seismic	
data collection, processing, analysis, and storage system using	
satellite communications, the ARPA net, large frame special	
purpose computers, and newly developed mass storage systems.	5a1
The purpose is to investigate the important remaining problems	
affecting the seismic verification of a comprehensive Test Ban	
Treaty and to obtain the operational experience necessary to	
design an optimium seismic verification system.	5a2
BASIC CONCEPTS	5b
DAGIO CONCELIG	
The seismic data communications, processing, analysis, and	

1) Training and assistance in the use of the full capabilities

2) Technical assistance and engineering support in linking up

providing file space, identifications, passwords and other

of NLS, its user programming packages, and other relevant

and automatic acquisition of data from selected Overseas

storage system developed by this program will emphasize remote

	Seismic Arrays/Stations by communication United States.	tion satellites to the	5ъ1
	Overseas seismic data received at a U.S. seismic arrays will be transmit storage device via the ARPA net.		5b2
	Trade-offs between station detection processing will be investigated.	processing and centralized	5b3
	Detection processing, event processing will be accomplished using available on the ARPA net.		5b4
	The data storage system for both ray be designed to permit remote access interested users (both foreign and to	over the ARPA net by other	565
	Multi-station seismic data communication program processing and analysis tech		5b6
A	GENDA OF THE WASHINGTON MEETING (May 29, 1	973)	6
	Location		6 a
	Seismic Data Analysis Center 314 Montgomery Street Alexandria, Virginia		6a1
	Agenda		6 b
	Introduction and Overview of Seismic Verification	Dr. Willis/ARPA	6b1
	Program Discussion	Col. Russell/ARPA	6b2
	Status of SRO Program	Mr. Murphy/NOAA Mr. Peterson/NOAA	6ь3
	Status of Iranian Array	Mr. Murphy/NOAA Mr. Peterson/NOAA	6b4
	Status of NORSAR Data Link	vsc	6b5
	Review of Data Link Design Study	BBSN	6b6
	Communication Satellite Link		

Options to NORSAR and IRAN,

	Future Plans	COMSAT	6b7
	Status of Data Processing, Analysis, and Retrival Plan to Support the SeismicData Program	TELEDYNE GEOTECH	6b8
	summary of Data Storage Options	CCA	6b9
	Discussion and Summary	Col. Russell/ARPA	6510
Re	eporting Procedures		6c
	Presentations should provide a short su and future plans.	mmary of work to date	6c1
	Where appropriate, each speaker should by the government are required to guide		6c2
	A meeting of government groups is sched review the program and act on identifie the tasks/schedule file in the <vela> U suggested and problems in meeting targe file should be clearly identified.</vela>	d problems. Review of SC-ISI directory is	6c3
	The target date for completion of plann the seismic data program remains 31 ju TASKS/ SCHEDULE file.)	ing for the design of 12 to 13. (Task 74-6 < VELA)	6c4
Si	igned: Dave Russell/ARPA		6 d
NOTE	S TAKEN DURING THE MEETING		7
1	or Willis		7a
	ARPA network is an important tool for e be performed by the SDWG.	xpediting the tasks to	7a1
	Fiscal constraints require now a consta and slippages will have crucial consequence by Congress).		7a2
	He urges the use of the ARPA network an acquainted with it.	d asks everyone to get	7a3
Mu	urphy from NOAA		7 b
	(Boulder, Colorado & Seismological Cent	er Albuquerque NM)	7b1

The SRO Program covers from 15 to 20 stations.	7b2
The Iranian Program includes 7-9 elements.	7ь3
This program has been discussed with the Iranian Government and its technical people. Program has to catch up with the rest of the SRO Program.	7b3a
Priority is for the development of 8-9 of these stations in selected areas. U.S. Government will provide advantages to countries which cooperate.	754
Contacts with foreign Governments are made through the embassies with the help of the State Department.	755
The U.S. Government will provide advantages to countries which cooperate and in return will expect facility support, technical support and access to the records produced. Some political hassle is expected.	7b5a
Replies are expected in a few months.	756
Remote sites require remote recording and protection of the system. SRO people won't have to stay on these sites permanently.	7b7
The SRO system has four hole sensor (7 inch hole). The objective is to provide ARPA with the data from sensors. Holes are at a depth of 75 to 300 meters.	7ь8
In Iran the site is 60 km from Teheran.	7ь9
USO: Unmanned Seismic Observatory	7ь10
Data will be recorded locally. Must be in a format adequate for transmission by communication satellites. It will then be sent through the ARPA Network to mass storage in NASA Ames,	
California.	7511
Data will be transmitted in digital form to the worldwide system	7b12
The amount of data generated will be 2 reels per week per station and 2 to 4 times that amount if short observations are taken. All these data has to be transmitted through the ARPA	
network.	7b13

The delay between generation of data and its arrival into the

network could be up to 2 months. A quality review will take place in Albuquerque.	7514
NORSAR Data Link	7c
The NORSAR SPS and the NORSAR TIP (local terminals are linked to it) are linked to an MPX and a MODEM. The later through 9.6 KB leased lines will be connected to a MODEM AND an MPX in the U.S. which are linked to SDAC-SPS and SDAC TIPS connected to local terminals again, and a a360/44.	7c1
Another scheme would be to lease a 50kb line between the U.S. and Norway. The scheme would be the following:	
NORSAR> PLI> TIP> SIMP> shared 50kb transatlantic line	7c2
PLI: Private Line Interface SIMP: Satellite IMP	7c2a
This mode should be less expensive. But no decision has been reached because the common carriers cannot decide about the price of the system.	7c2b
BB &N Data Link	7 d
Emphasis was on where new technology may be used. The study started by looking at communication problems.	7d1
ARPA net communications	
leased links mail	7d1a
Concentration was on the ARPA network. In Europe we only have spurs (no multiple connectivity).	7d2
Interface. Data is passed in packets which are routed separately towards their destination. There is a packet switching which optimizes the utilization of the network.	
Transmission delays are less than 1 sec.	7d3
Advantages of the Network	7d4
One needs to access only one node to send messages to many sites.	7d4a
When one wants to change destination one just needs to change the header of the messages.	7d4b

Usage rate of any link may vary. Therefore there is a flexibility in data rate.	7d4c
Communication system does error control (not too important	
for transmission of raw data which has a lot of redundancy).	7d4d
Two way communication possibility	7d4e
Significantly increased reliability.	7d4f
Payments proportional to usage (pay by packets).	7d4g
Economies of scale of high band width lines (a capacity	
increase of a factor of 5 only costs twice as much). There	
is a 20% overhead for data transmission.	7d4h
Disadvantages	7d5
Not suitable for voice because of variable delays. Voice	
grade requires constant delays.	7d5a
More complicated sytem.	7d5b
Difficulties in introduction of new technology.	7d5c
High cost of IMP: \$100 K (should decrease rapidly).	7d5d
SIMP : Satellite IMP	7d6
A satellite IMP does not want to talk with other computers but only with other IMPS.	7d6a
Total site cost is \$50 K in addition to communication facilities.	7d7
CONSAT GROUP	7 e
Objectives of the Group	7e1
1) Evaluate technical alternatives.	7e1a
2) Compare costs	7e1b
3) Recommendations	7e1c
Approach	7e2
Access to nearest earth station	7e2a

Improvement to interconnection links	7e2b
Suitability for DICOM	7e2c
Standard earth station vs DICOM	7e2d
Recommendations	7e2e
Example of Schedule	7e3
Facilities trade-off	7e3a
Cost analysis	7e3b
Recommendations	7e3c
Preparation of report	7e3d
Far East survey	7e3e
Facilities trade-off	7e3f
	7e3g
Problem Areas	7e4
Tarriffs. Facility ownership. Acceptance of new technology by PTT*s.	7e4a
TELEDYNE	7 f
Topology for seismic markets: three basic types.	7f1
Spider network. Octopus network. Stegosaurus network.	7f2
The last one has the sites connected to mass storage (ILLIAC 4) through the ARPA network.	713
Data acquisition and storage	7f4
Raw data: 18,000 tapes per year.	7f4a
Event Summary: 2 tapes per year.	7f4b
Signal Waweforms: 540 tapes per year.	7f4c
Signal Description: 4 tapes per year.	7f4d
Data Processing	715

1000 detections per day. (2.10,000 bits per dectection)	7f5a
Queries would be essentially for event summary and signal description.	7f6
The data storage system would be the ARPA network data storage system.	7f7
DATACOMPUTER Corporation	7 g
Design concepts	7g1
Storage, retrieval and file maintenance.	7g1a
Large on-line files.	7g1b
Uniform interface: datalanguage	7g1c
Reformatting & Conversion	7g1d
Shared data	7gle
Shared system	7g1f
Inverted files	7g1g
Content addressable	7g1h
Checkpoint restart	7g1i
Fully redundant (optional by file)	7g1j
Access security (at user level, at file level, at subfile level)	7g1k
Economy of scale	7g11
Two types of storage are considered:	7g2
Ampex TBM	7g2a
UNICOM (strip capacity: 1.7 billion bits) (Max capacity: .75 trillion bits) (average access time: 8 sec)	7g2b
Application to seismic data: Needs	7g3
Bits per year: between 3.15 and 6.11 trillion bits per year.	7g3a

Yearly transmission costs: \$ 945,000 to \$ 1,833,000. It costs 10 cents per kilopacket for any single hop in the	
network	7g3t
Questions	7g4
Will datacomputer approach be used for seismic data?	7g4a
How much of the raw data has to be kept on-line?	7g4h
Will all computing be done on the ARPA network?	7g4c

The VELA Project : Some Miscellaneous Notes

4 4 7 4

(J17581) 29-JUN-73 16:00; Title: Author(s): Paul Rech/PR; Distribution: /RWW DCE SRL JCN MDK DVN; Sub-Collections: SRI-ARC; Clerk: PR; Origin: <RECH>U.NLS; 2, 29-JUN-73 15:52 PR;

Feedback on (IJOURNAL, 16935, 1): Journal "action items" and "copies".

1) There should be a default distribution type, either "action" or 1a

"copies". I see no reason to have NO default. However, it's not entirely clear what it should be. The arguments as I see them are these: On the one hand, if we want to be sure that people will send

1a1

1

On the other hand, it makes sense to me to make the change be upwards compatible with the present distribution mechanism. That is, it would be nice if the user didn't suddenly find out that "D" for Distribution no longer works. This argues that the default should be "action", as it is now.

action items judiciously, then we should make it easier to send "copy" items, and slightly harder to send "action" items. This

1a2

My own preference is that the default be "action".

1a3

P.S. --- The use of the word "INFORMATION" in the Journal Command Form, as suggested in (KAYE, ACTION, ) is misleading. Sounds too much like "COMMENTS". I suggest "CC's:" or "COPIES TO: "

1a4

2) The title of the "JOURNAL" branch should read

argues for making the default be "copy".

1b

(JOURNAL) Journal Mail: Action Items --- Most Recent Items First

151

3) The title of the "COPIES" branch should read:

1c

(COPIES) Journal Mail: Non-Action Items --- Most Recent Items First

1c1

4) The "execute secondary distribution" mechanism should also allow one to specify "action" and "copy" (with default to one or the other). The new addressees should be added to the distribution list of the original journal item, and be accessible by all subsequent readers of that item.

1d

It makes sense to me to always have ALL the addressees stored in one place, so that a reader of an article will be able to determine who got it, whether it was via secondary distribution or primary.

1 41

Either we should add the new addressees to the origin statement of the original Journal item, or put all addressees (including

those on the original distribution list) in some updatable file	
that is linked to through the origin statement.	1d2
Some Personal Observations:	2
The justification for the action/copy dichotomy in the initial file is basically as stated in #16935, namely:.	2a
"When reading his mail, the user will be able to determine which items should receive his urgent attention, and which he needs to read to keep abreast of the general happenings."	2a1
Personally, I don't believe the distinction in the initial file between "action" and "copy" is desireable. (But I suspect I'm in the minority on that.)	2ь
I'd prefer to receive all my mail in one bucket initially and then pigeonhole it myself. I'd even prefer "author" copies along with my regular journal mail, so I wouldn't have to do a separate "jump" to see that my stuff got delivered.	2c
WHAT'S WRONG WITH SIMPLY TAGGING EACH CITATION IN THE (JOURNAL) BRANCH AS ACTION OR COPY OR AUTHOR OR WHATEVER ?	2c1

(J17582) 29-JUN-73 16:21; Title: Author(s): Michael D. Kudlick/MDK; Distribution: /DSK JDH RWW JCN CHI; Sub-Collections: SRI-ARC; Clerk: MDK; Origin: <KUDLICK>CC\*S.NLS; 2, 29-JUN-73 13:38 MDK;

q.v.

Jake ... Two quickies (RSVP):

- 1) Were you able to move the programs stuff over to the resource notebook, and did you let Schelonka know? Where does it live now?
- 2) Where does the situation sit now ... still waiting for Cerf ?

1

q.v.

(J17583) 29-JUN-73 16:32; Title: Author(s): Michael D. Kudlick/MDK; Distribution: /JAKE; Sub-Collections: SRI-ARC; Clerk: MDK;

WEEKLY ANALYSIS B	EPORT:					1
						2
WEEK: JUN 17 - 23	, 1973	(24 HOURS	/DAY)			3
						4
TOTAL SYSTEM CPU:	58.617					5
						6
(ARC)						6a
IDENT	CPU HRS	CON HRS	CPU/CON	% SYS	CON/CPU: 1	6a1
						6a2
(STAFF)						6a3
(MFA)	.250	12.606	.020	.426	50.424	6a3a
(DCE)	.389	14.716	.026	.664	37.830	6a3b
( BAH )	1.366	24.458	.056	2.330	17.905	6a3c
(SRL)	.321	9.895	.032	.548	30.826	6a3d
(JCN)	.620	8.605	.072	1.058	13.879	6a3e
(DVN)	.203	16.540	.012	.346	81.478	6a3f
(PR)	.085	3.656	.023	.145	43.012	6a3g
(RWW)	.065	2.094	.031	.111	32.215	6a3h
						6a31
(TOTAL)	3.282	84.585		5.599		6a3j
						6a3k
( PSO )						6a4
(KFB)	.065	5.952	.011	.111	91.569	6a4a
(MEJ)	.899	60.278	.015	1.534	67.050	6a4b
(KIRK)	4.295	92.868	.046	7.327	21.622	6a4c

(LLL)	-	-	-	-	-	6a4d
(NDM)	1.981	44.356	.045	3.380	22.391	6a4e
						6a4f
( TOTAL	7.240	203.454		12.352		6a4g
						6a4h
(NIC)						6a5
(JDC)	.027	1.489	.018	.046	55.148	6a5a
(EJF)	.381	20.172	.019	.650	52.945	6a5b
(CBG)	.009	.219	.041	.015	24.333	6a5c
(MLK)	.422	22.648	.019	.720	53.668	6a5d
(MDK)	.270	9.283	.029	.461	34.381	6a5e
(JBN)	.344	19.066	.018	.587	55.424	6a5f
						6a5g
( TOTAL	1.453	72.877		2.479		6a5h
						6a51
( HARDWARE	)					· 6a6
(MEH)	.149	13.866	.011	.254	93.060	6a6a
(JR)	.013	. 289	.045	.022	22.231	6a6b
(EKV)	.012	1.040	.012	.020	86.667	6a6c
						6a6d
( TOTAL	.174	15.195		.296		6a6e
						6a6f
(TENEX)						6a7
(DIA)	.746	13.720	.054	1.273	18.391	6a7a
(KEV)	.540	17.175	.031	.921	31.806	6a7b

(DCW)	1.819	41.881	.043	3.103	23.024	6a7c
						6a7d
(TOTAL)	3.105	72.776		5.297		6a7e
						6a7f
(NLS)						6a8
(WLB)	.077	1.783	.043	.131	23.156	6a8a
(CFD)	.748	28.117	.027	1.276	37.590	6a8b
(JDH)	1.036	18.294	.057	1.767	17.658	6a8c
(JDH)	.050	1.288	.039	.085	25.760	6a8d
(CHI)	.478	15.179	.031	.815	31.755	6a8e
(DSK)	.480	13.426	.036	.819	27.971	6a8f
(HGL)	.707	14.314	.049	1.206	20.246	6a8g
(EKM)	.263	14.543	.018	.449	55.297	6a8h
(JEW)	2.206	184.094	.012	3.763	83.451	6a8i
						6a8j
(TOTAL)	6.045	291.038		10.311		6a8k
						6a81
(GROUP) TOTAL	s					6b
GROUP	CPU HRS	CON HRS	CPU/CON	% SYS	CON/CPU	6b1
						6ь2
(STAFF)	3.282	84.585	.039	5.599	25.772	6b3
( PSO)	7.240	203.454	.036	12.351	28.101	6b4
(NIC)	1.453	72.877	.020	2.479	50.156	6b5
( HARDWARE )	.174	15.195	.011	.297	87.328	6b6
(TENEX)	3.105	72.776	.043	5.297	23.438	6b7

(NLS) 6	.045 29	1.038	.021 1	0.313	48.145	6ъ8
_						6ь9
(TOT) 21	.299 73	9.925	3	6.336		6ь10
						6511
(STATS)						6c
HIGHEST CPU:	KIRK 4.	295 hrs	LOWEST	CPU:	CBG .009 1	ers 6c1
HIGHEST CON:	KIRK 92	.868 hrs	LOWEST	CON:	CBG .219	hrs 6c2
HIGHEST CPU/C	ON: JCN	.072	HIGHEST	CON/CPU:	1: MEH 93.00	60 6c3
						6c4
(OVERHEAD)						6 ct
(JCP)	2.056	32.822	.063	3.508	15.964	6d1
BACKGROUND	3.500	83.474	.042	5.971	23.850	6d2
CAT	10.818	30.556	.354	18.455	2.825	6d3
DOCB	-		-	-		6d4
DOCUMENTATION	.012	.132	.091	.020	11.000	6d5
GILBERT	-	-	-	-	-	6d6
NETINFO	-	-		-		6d7
NIC-WORK	.182	1.662	.110	.310	9.132	6d8
OPERATOR	.670	14.336	.047	1.143	21.397	6d9
PRINTER	5.254	83.726	.063	8.963	15.936	6d10
SYSTEM	8.243	165.947	.050	14.062	20.132	6d11
						6d12
(TOTAL)	30.735	412.655		43.469		6d13
						6d14
(XEROX)						6e

								6e1
	NAME	CPU	HRS CO	N HRS CP	U/CON 9	SYS CO	ON/CPU:1	6e2
								6e3
	( LPD ) DEUTSC	н .0	92 1	.515	.061	.157	16.467	6e4
	( CMG )GESCHK	E .0	003	. 233	.013	.005	77.667	6e5
	( JGM ) MITCHE	LL .	083 3	. 372	.025	.142	40.627	6e6
	( WHP ) PAXTON			-	-	-	-	6e7
	(EHS)SAT-WT	E .2	293 15	.063	.019	.500	51.410	6e8
	( RES ) SWEET	. (	076 2	.738	.028	.130	36.026	6e9
								6e10
	(TOTAL)		547 22	.921		.929		6e11
								6e12
R	ADC)							6 f
								6f1
	NAME CPU	HRS	CON HRS	CPU/CON	% SYS	CON/CP	U:1 DIR	6f2
								6f3
	BAIR .	241	18.425	.013	.411	76.45	2 228	6f4
	BERGSTRM	-	-	11-11	-		40	6f5
	ветнке .	020	1.611	.012	.034	80.55	0 52	616
	CAVANO .	090	5.909	.015	.154	65.65	6 115	617
	IUORNO .	075	7.229	.010	.128	96.38	7 33	618
	KENNEDY .	263	19.375	.014	.449	73.66	9 37	619
	LAMONICA .	221	11.072	.020	.377	50.10	0 97	6f10
	LAWRENCE		-	-	7		43	6f11
	MCNAMARA .	084	4.344	.019	.143	51.71	4 131	6f12

	PANARA	.034	2.969	.0	11 .(	58 8	7.324	114	6f13
	RADC	.126	7.271	. 0	17 .2	215 5	7.706	88	6f14
	RZEPKA	.059	5.406	. 0	11 .1	101 9	1.627	24	6f15
	SLIWA	.006	.661	.0	09 .0	010 11	0.167	18	6116
	STONE	. 365	16.626	. 0	22 .6	523 4	5.551	299	6f17
	THAYER	.002	.048	. 0	42 .0	003 2	4.000	4	6f18
	TOMAINI	.015	.617	. 0	24 .(	026 4	1.133	40	6f19
						-			6f20
	(TOTAL)	1.601 1	01.563		2.	732	13	363.000	6f21
	( PER CENT	TOTAL D	ISK CAP	ACITY)				2.799%	6f22
									6f23
( N	ETUSERS) T	OP FIVE							6 g
									6g1
	NAME	CPU	HRS CO	N HRS	CPU/CON	% SYS	CON/C	CPU:1	6g2
									6g3
	BBN-TENEX	1.0	04 73	. 306	.014	1.713	73.0	014	6g4
	NSRDC	.5	15 18	. 954	.027	.879	36.8	304	6g5
	BBN-NET	.5	08 50	. 352	.010	. 867	99.1	118	6g6
	UCLA-NMC	.4	62 15	.929	.029	.788	34.4	178	6g7
	NBS-TIP	.3	83 13	. 669	.028	.653	35.6	689	6g8
			- 64						6g9
	(TOTAL)	2.8	72 172	. 210		4.900			6g10
									6g11
( N	ET) TOTAL	CPU	HRS CO	N HRS	CPU/CON	% SYS	CON/	CPU: 1	6h
									6h1

BAH 29-JUN-73 17:18 17584

Jun 17-23, 1973: A WEEK IN REVIEW

. .

NET 4.419 269.395 .016 7.539 60.963 6h2

6h3

Jun 17-23, 1973: A WEEK IN REVIEW

- -

(J17584) 29-JUN-73 17:18; Title: Author(s): Beauregard A. Hardeman/BAH; Distribution: /WAR; Sub-Collections: SRI-ARC WAR; Clerk: BAH;

John - JJP is no longer with MITRE, he may be found at the Bureau of Customs in Washington, d.c.

1

(J17585) 29-JUN-73 19:23; Author(s): Jerry J. Powell/JJP; Distribution: /JRP(John, if you need to contact Jerry Powell, please let me know and can do for you); Sub-Collections: NIC; Clerk: JJP;

This is a user's guide to the userguides. It consists of a proposed list of conventions that are designed to meet the following criteria:

1

allow the fastest find-it-yourself online answering to a user's question on how to use the particular feature he needs of the many avaiable in the system.

1a

be intuitive enough for the user to eventually learn the meanings from the context in which they are used though they should also be made easily available at any time, and

16

be general enough to function consistantly for all the userguides.

1 c

## Conventions:

2

In syntax descriptions, alternative user responses to feedback from the system are represented by seperate statements (lines) one level down from the system feedback syntax.

2a

Explinations of the user responses should be conceptual substructure to the syntax for the response. (See -- 16347, conceptual:w)

26

Information Echoed by the system is enclosed in Square Brackets. This would be in addition and seperate from the keys typed by the user. For example: co[Comments] instead of co[mments].

2c

This is for two reasons. First of all, I found the division of a word (especially from the first character) by a square bracket very confusing when I was trying to learn NLS. Second, it seems innaccurate in concept as well as in representing the case of the first character.

2c1

The descriptions on how to use the system are addressed to the second person plural or impersonal you.

2d

This is to eliminate the gender problem (is The User a he or she?) and to simplify the instructions by eliminating the number of words and syntactical gymnastics necessary for third person singular. Also this should provide a more direct and personal style to the userguides similar to that used for the TNLS Primer and in Locator.

2d1

(J17586) 29-JUN-73 19:56; Title: Author(s): Kirk E. Kelley/KIRK; Sub-Collections: SRI-ARC; Clerk: KIRK; Origin: <KELLEY>USERGUIDES.NLS; 4, 20-MAY-73 13:45 KIRK;

## Sailhackbull

Jim: since this is the NIC, it seems to be most appropriate to message you with the Journal, ergo: in reference to the part of my sendmsg about DEC ALGOL, and your notice on SAIL, yes i'd be very interested. An earlier problem I had with ALGOL was that I couldn't use the 10/50 io modes to control echo in the fancy tenex sort of way that I wanted to, and you obviously havent got that problem, or have overcome it with HACK.

yhs Buz.

.

Sailhackbull

\* \*\* \*

(J17587) 29-JUN-73 20:36; Title: Author(s): A. D. (Buz) Owen/ADO; Distribution: /JOC; Sub-Collections: NIC; Clerk: ADO;

Annoying name deliminator bug.

. . .

Occasionally, a statement will become all caps preceding an edit. Shows up using null name deliminators (even after they have been changed back to default) when editing the very beginning or very end of a statement, or if the statement begins with special characters: \*] etc. Very annoying as it occurs without warning after extensive editing, is a hassle to fix. AND THERES NO WAY TO GET AROUND IT Please look at it as more people are beginning to use null deliminators.

-

Annoying name deliminator bug.

(J17588) 30-JUN-73 18:17; Fitle: Author(s): Kirk E. Kelley/KIRK; Distribution: /CFD BUGS; Sub-Collections: SRI-ARC BUGS; Clerk: KIRK;

Visit Notice: for 2 Jul 73, Eric Foxley and Steven Hague, University of Nottingham

Special attention MDK, JBN, RWW: First objective, NIC/NET familiarity: MDK logical host; Dave Brown alerted if they want to discuss topics in his area.

2

2a

2b

Visit Notice: for 2 Jul 73, Eric Foxley and Steven Hague, University of Nottingham

Dr. Eric Foxley, Director of Computing, Cripps Computing Centre, University of Nottingham, Nottingham, U.K. and, Mr. Steven J. Hague, Coordinator, Nottingham Algorithms Group.

To visit ARC Monday, 4 Jul 73, 0930; whole day set aside for SRI visit, ARC being primary contact point. I assume that it is mainly the ARPANET and NIC that initiates the visit, since the London TIP is scheduled to become operational soon.

I want Mike to be their official host. (see -- 14724,4c4:mgwy)

Dave Brown (ext 2944) is alerted and would be interested in having them visit with people in his Information Sciences Laboratory if the visitors are interested. Let it be their host's job to learn early in the day if they want to see other people in SRI, and make arrangements. The AI Group has not yet been contacted; don't know whether Foxley or Hague have AI interests.

Visit Notice: for 2 Jul 73, Eric Foxley and Steven Hague, University of Nottingham

(J17589) 1-JUL-73 11:54; Title: Author(s): Douglas C. Engelbart/DCE; Distribution: /rww drb jcn mdk jbn chi; Sub-Collections: SRI-ARC; Clerk: DCE;

Request for OP Directive Preventing Substatement Page Breaks

CHI -- For the Directory, as well as for production of formatted reports, there is urgent need for an Output Processor directive to produce page breaks at statements of a certain level only. This is not the directive to produce page breaks at specified levels at each occurrence, but one to insure that page breaks are not made at substatements when this is not desired, and the whole branch should be carried to the next page. I have asked for this before, and perhaps there is some reason it cannot be done? -- Jeanne

Request for OP Directive Preventing Substatement Page Breaks

(J17590) 1-JUL-73 20:07; Title: Author(s): Jeanne B. North/JBN; Distribution: /NP CHI MDK NDM; Sub-Collections: SRI-ARC NP; Clerk: JBN;

Use of Catalog Programs by non-ARC People to be Prevented

Beau -- There have been inquiries about use of our catalog progrms by outsiders. MDK says we cannot support such use at this time. Please be sure that password on program directory or directories is secure. -- Jeanne.

1

Use of Catalog Programs by non-ARC People to be Prevented

(J17591) 1-JUL-73 22:13; Title: Author(s): Jeanne B. North/JBN; Distribution: /BAH MDK RWW NEJ NEJ NLK CHI; Sub-Collections: SRI-ARC; Clerk: JBN;

The novice statement of Content Analyser will be ready in a day or so, and we will send it to you.

1

As we discussed, this capability will allow you to prepare bibliographies in any format you choose, and to make searches on them using a content analysis for any term you select.

2

I have talked to Mike Kudlick again about your needs. Reconsideration results in the same conclusions. NIC cannot support the use of catalog programs by any others at the time. Nor, unfortunately, can we see our way to promise to catalog and input items into the NIC data base to have them included in the NIC Catalog.

3

We are looking for a way to allow either or both of these possibilities, and will let you know of the means we find to serve your needs.

5

NIC Efforts to Meet Your Need for Input and Retrieval

(J17592) 1-JUL-73 23:12; Title: Author(s): Jeanne B. North/JBN; Distribution: /PLM MDK RWW MEJ NDM; Sub-Collections: SRI-ARC; Clerk: JBN;

Origin: <NORTH>MILLERREPLY.NLS; 1, 1-JUL-73 22:52 JBN ;

A slow response to your last communication giving your reasons for wanting the UCLA manual to accompany RFC 499 as you had requested.

I have talked this over with Mike Kudlick, and it is agreed we should stand by our policy of declining to issue documents which are actually Site documentation as contrasted with Network documentation. The entire RFC actually is Site documentation and properly should be the responsibility of Harvard to publish. We published and distributed the basic document but we could have declined to do this. We certainly have to draw the line at the lengthy UCLA manual cited by it.

Policy Reason for Declining to Issue UCLA Document as Part of RFC 499

(J17593) 1-JUL-73 23:39; Title: Author(s): Jeanne B. North/JBN; Distribution: /BAR MDK RWW MLK JEW; Sub-Collections: SRIARC NIC; Clerk: JBN;

Origin: <NORTH>REUSSOWREPLY.NLS;1, 1-JUL-73 23:29 JBN ;

Request for Status of Work on Sndmsg Address List

Jim -- When you get back and have time, please let me know of the success of your efforts to put sndmsg addresses into a record. We are continuing to receive requests for this information for Network people, and MDK says you have worked on this. -- Jeanne

1

Request for Status of Work on Sndmsg Address List

(J17594) 1-JUL-73 23:57; Title: Author(s): Jeanne B. North/JBN; Sub-Collections: SRIARC NIC; Clerk: JBN;

Efforts to Handle Document Requests Without Referring to SDC2

Steve -- As you request, we are working out a cost estimate for functional documents so that we can reply to many of the requests with an offer to supply for a price. We'll let you know what we come up with. Another, basic reason for referring such requests for documents for your opinion was to insure that we didn't offend requestors who had a closer relation to the Network than we were aware of; we have not yet succeeded in getting into a satisfactory information situation so that we are not surprised by new Sites occuring full-blown, but this is being worked on. For the time being, I have asked Marcia to refer to me all the requests she was referring to you, and we'll try not to burden you unnecessarily. -- Jeanne

Efforts to Handle Document Requests Without Referring to SDC2

(J17595) 2-JUL-73 00:05; Title: Author(s): Jeanne B. North/JBN; Distribution: /SDC2 MDK RWW MLK; Sub-Collections: SRIARC NIC; Clerk: JBN;

Reply to DHC on some Journal Suggestions

Dave, I don't know if anyone else answered your suggestions, but we do pla to allow unrecorded dialog through the Journal and have been thinking about how to aallow an addressee how is not in the ident system but is known to exist at a site. I can't give you a date for when tese features will happen at this time but they are on the stack.

Reply to DHC on some Journal Suggestions

(J17596) 2-JUL-73 08:30; Title: Author(s): Richard W. Watson/RWW; Distribution: /DHC MDK JEW; Sub-Collections: SRI-ARC; Clerk: RWW;

James C. Norton

Assistant Director

Augmentation Research Center

Stanford Research Institute Menlo Park, California 94025

PHONE: AREA 415 326-6200

James C. Norton

Assistant Director

Augmentation Research Center

Stanford Research Institute PHONE: AREA 415 326-6200

Menlo Park, California 94025

James C. Norton

Assistant Director

Augmentation Research Center

Stanford Research Institute PHONE: AREA 415 326-6200

333 Ravenswood Ave., Menlo Park, California 94025

James C. Norton

Assistant Director

Augmentation Research Center

Stanford Research Institute

(415) 326-6200

333 Ravenswood Avenue, Menlo Park, California 94025 U.S.A.

James C. Norton

ASSISTANT DIRECTOR

AUGMENTATION RESEARCH CENTER

Stanford Research Institute

(415) 326-6200

333 Ravenswood Avenue, Menlo Park, California 94025 U.S.A.

James C. Norton

## ASSISTANT DIRECTOR

## AUGNENTATION RESEARCH CENTER

Stanford Research Institute

(415) 326-6200

333 Ravenswood Avenue, Menlo Park, California 94025 U.S.A.

James C. Norton

Assistant Director

Augmentation Research Center

stanford research institute

(415) 326-6200

333 ravenswood ave., menlo park, california 94025

James C. Norton

Assistant Director

Augmentation Research Center

stanford research institute

(415) 326-6200

333 ravenswood ave., menlo park, california 94025

James C. Norton

Assistant Director

Augmentation Research Center

stanford research institute

(415) 326-6200

333 ravenswood ave., menlo park, california 94025

Stanford Research Institute

(415) 326-6200

JAMES C. NORTON

ASSISTANT DIRECTOR, AUGMENTATION RESEARCH CENTER

333 Ravenswood Avenue, Menlo Park, California 94025 U.S.A.

(J17597) 2-JUL-73 09:28; Title: Author(s): N. Dean Meyer/NDM; Distribution: /NDM; Sub-Collections: SRI-ARC; Clerk: NDM; Origin: <MEYER>JCNCARD.NLS; 4, 2-JUL-73 09:26 NDM;

WHEN THIS GOES TO THE PRINTER FOR FINAL PRINTING:
use calling card stock
do not print this page
this is being printed 10-off: make 7 cuts to
produce 2 by 3 1/2 cards

Comments on Your Command Categories for HELP

RE: (Kudlick)nov/exp

Comments on (kudlick)nov/exp

1

Thank you for preparing this first draft of a HELP system. Since it didn't happen to coincide exactly with what I had in mind, and since you had to be out of town, I discussed it with some people, but we didn't approve it yet.

2

I want very much for you to "interview" Dick Watson on this subject. He is very interested in the details of this and will probably have good ideas to contribute.

2

Below is a list of comments I have to make.

4

The approach you took is basically what I had in mind. However, we can go one step further, I think, and take the extreme Novice point of view in the sense that we label the top level categories very much by FUNCTION, not parallel to our arbitrary NLS system divisions. For example,

4a

You show a top level category, "subsystems". The guy you want to assist has a job to get done like "doing arithmetic" or whatever. His mind doen't think in subsystems (yet) although at the bottom level of the information in the HELP system, he will of course find out that there is a subsystem for doing arithmetic, a thing he ultimately has to know to use the system.

4a.1

You mention under ADDRESSING "distinguishing DNLS from NLS addressing problems"...?

45

Maybe you mean DNLS from TNLS. Yes, in general we need to define separate text for the two NLSes wherever commands actually differ, a task which should "fall out" of Chuck's table-driven command language approach anyway. He has flagged differences internally.

451

In general, you seem to be combining two approaches here (I may misunderstand). I get that you want to communicate "philosophy" and reasons why things are done a certain way, a little salesmanship, an NLS overview, etc. This is all fine, and can largely be borrowed text from already existing sources I would think. The important thing here is HOW the guy perceives his choices at each node.

4c

If he comes to get syntax for links (and he may be somewhat of an Expert) we want to approach it so that he may quickly get this WITHOUT philosophy.

4c1

With respect to HOW choices are presented to him, I would

ultimately like us to come up with a scenario of the tree of choices, something like what I wrote up for our 3-point HELP proposal. Know what I mean?

4d

Also, I have requested documentation on the Carnegie Mellon ZOG system, which may be very relevant to this topic.

5

I really appreciate your working on this. I very much liked your earlier short manual and think you do this kind of thing well. It seems like we can afford to take the time to do this right, but I want to make sure we keep thinking about it, and maybe try out some examples using QUERY.

Comments on Your Command Categories for HELP

(J17598) 2-JUL-73 11:02; Title: Author(s): Diane S. Kaye/DSK; Distribution: /MDK; Sub-Collections: SRI-ARC; Clerk: DSK; Origin: <KAYE>MIKE.NLS; 2, 2-JUL-73 10:42 DSK;

Jim-- Why is it that only some of my journal mail gets delivered to my network mailbox (i.e. NEIGUS at BBN) and the rest just gets to my initial file here at NIC. There does not seem to be any pattern; I have received both messages, and journal references at BBN. Also I tried to FTP a journal reference to BBN, and each time my connection was terminated without the file being sent. I tried to retrieve (JJOURNAL)17564.NLS; XNLS. Would the results have been different if I had using lower case letters? Thanks for looking into this. Nancy

Network Journal Mail

(J17599) 2-JUL-73 11:13; Title: Author(s): Nancy J. Neigus/NJN; Distribution: /JEW; Sub-Collections: NIC; Clerk: NJN;

. AUTHOR branch

jim, i did a upte of the file MM.NLS; 4. it said that the update was unnecessary. this message is being typed after the update was tried. I am using the submit Message command.

. AUTHOR branch

(J17600) 2-JUL-73 14:33; Title: Author(s): Michael L. Marrah/MLM; Distribution: /JCN; Sub-Collections: NIC; Clerk: MLM;

In response to Dave's response to my response ... (assuming everybody's seen 'em all) I never said it was T\*H\*E Network editor. Clearly I need to introduce the paragraph on Limitations. Will whomp one up soon and send around. Re names: I fear that eds is too likely to conflict with existing installed commands. How abt neteds as a compromise, if many people share Dave's fear abt the implications of neted. Final thought: somebody (maybe even me) thought at the mtg that it would be a nice touch to have NET-USING rather than MIT-Multics as the home base entry on the RFC version. How does this strike peole? (meant to be 'people'). For that matter, should this be labelled NET-USING Memo 1 (or 2) or the like? At any rate, I seem to have gotten through a whole message without forgetting the ctl-v's, so I'd better quit while I'm ahead. cheers, map

(J17601) 2-JUL-73 14:44; Author(s): Michael A. Padlipsky/MAP; Distribution: /USING; Sub-Collections: NIC USING; Clerk: MAP;

I'm confused (not unusual for me) I thought our intent was to avoid (resist?) the temptation of building a 'great' editor. I tend to agree (again, from an (almost) totally ignorant point of view) with Dave that 'eds' is not a 'great' editor. However, what little greatness it does possess is derived from its simplicity. Where novice users are concerned, I'm inclined to cast my vote in favor of simplicity at the expense of elegance. From my experience, these tend to be mutually exclusive characteristics.

(J17602) 2-JUL-73 15:05; Title: Author(s): Ronald M. Stoughton/RMS; Distribution: /USING; Sub-Collections: NIC USING; Clerk: RMS;

Visitor: Jeff Franklin

1

Address:

2

Code 431 Naval Ordinance Lab White Oak Silver Springs, Md (301) 495 8544

2a

Note: DCE met Jeff at the NCC in New York. Jeff is involved in the development of a graphics based circuit design and verification system. He is interested in NLS as a tool for group management. HGL and JCN demonstrated parts of the system emphasizing those parts related to community development and software implementation. DCE spoke to him about possible utility participation.

Materials to be sent:

4

3

1972 Report

4a

1970 Report

4 b

1962 Report

4c

NCC paper (14724,)

4d

Visitor log: Jeff Franklin, Naval Ordinance Lab , 2-JUL-73

(J17603) 2-JUL-73 15:20; Title: Author(s): Harvey G. Lehtman/HGL; Distribution: /DCE JCN RWW; Sub-Collections: SRI-ARC; Clerk: HGL;

## Text Editors: Answer to your Message

Thanks for letting us know of your interest in comparative analysis of the information handling systems available over the ARPANET. We'll gladly cooperate with you on that area, and we would be very pleased to hear about your present views on the subject. In particular we would be interested in getting the results and conclusions you have reached so far about SOS, TECO, DED, and NLS.

As far as we are concerned, we have, indeed, a small analytical effort going on in that domain. Our main obective is to gain some perspective in this field in order to back our development group in understanding how we fare in general and finding out what specific functions need to be improved.

We have first looked at the question of frequency of usage of the various commands in NLS and their timings. We found out that less than 20 commands are responsible for over 80% of the total command usage. It is this group of commands that we attempt to optmize first. In particular we have already improved the text input in NLS by a fator of 2 or 3 as a result of these studies.

## Some further references:

Note: The following journal items will give you some additional information about our work in this area. I would like to remind you that they are only informal working papers reporting incomplete results and tentative conclusions. These documents should not be considered as reports and we would prefer not to be quoted from them. If you need some further assistance to get to this material please contact Susan Lee (SRL).

Cost of text insertion with NLS (14351,)

Revised Timing and cost of text insertion with NLS (15466,)

The DNLS Command Language Monitor. Function and Results (14170.)

Command Usage Analysis: Report on phase I (13788,)

Analysis of the NLS language: Phase II Design (15367,)

The economics of text editing functions: cost effectiveness analysis of NLS (16017,)

1 a.

1 b

1d

1c

1d1

1d2

1d3

1d4

1d5

1d6

1d7

	Computer Augmentation of Human Intellect: A revolution in communication (17061,)	14
	Please let me know if you need any further help.	1
	Paul RECH SRI-ARC	1
Re	eference	
	from NSRDC : Text Editors - Comparisons	
	Date: 29-JUN-73 0729-PDT	4
	PAUL,	28
	Jim Norton said to contact you for information on text editors.	
	We at NSRDC are very interested in the various text editors that	
	are around especially those on the ARPANET. I have info on SOS,	
	TECO, DED, and NLS. What we really would like to know is	
	(1) personal experiences with each	
	(2) statistics comparing various editors.	
	We have one journal item that is particularly interesting	
	comparing NLS, MTST, WYLBUR, and a recent update on TECO. Are	
	there any other documents or papers in a similar vain? Thanks	
	for any help; I can be reached via the journal as RLL or	21
	sendmessage as NSRDC attn RLL.	21
	ROBERT LIEBERMAN	20

Text Editors: Answer to Message from RLL

(J17604) 2-JUL-73 17:00; Fitle: Author(s): Paul Rech/PR; Distribution: /RLL SRL; Sub-Collections: SRI-ARC; Clerk: PR; Origin: (RECH) RLL.NLS; 2, 2-JUL-73 16:57 PR;

(Isn't controversy fun?)

I hereby cast my vote in favor of NETEDS (tho I doubt EDS would conflict with other site's names). All previous objections are hereby (temporarily) retracted.

Mike -- I don't understand you comment about NET-USING vs. MIT-Multics. Do you mean as the originator or NETEDS?. Also: congratulations on the control-v's.

--Dave.

(J17606) 2-JUL-73 17:31; Title: Author(s): David H. Crocker/DHC; Distribution: /USING; Sub-Collections: NIC USING; Clerk: DHC;

Minor clarification on previous Journal suggestion

Dick — thanks for the response about the journal suggestions. A point of clarification on my 'unknown' addresse: In addition to people without idents, but known to other sites, I would like to be able to enter a U.S. Postal addres, at submission time (or even be able to refer to a statement which has the address. this last is probably not worthwhile — if I record it in a statement, I might as well record it in the ident file.).

Minor clarification on previous Journal suggestion

(J17607) 2-JUL-73 17:34; Title: Author(s): David H. Crocker/DHC; Distribution: /RWW; Sub-Collections: NIC; Clerk: DHC;

NP for voting capabilities.

I would like to vote for Jeannes suggestion (17590,) in the NPS file but I don't know how. Is sending another Journal message the only way? It might be worth while to devise a simple voting system allowing people to associate their ident by someone elses suggestion in the NPS file. Decision makers might like to have an indication of how much user weight is behind a particular improvement. Maybe people would be more inclined to use the NP and BUGS files if they could easily vote for suggestions. I know one user who would feel he had a little more of a role in the bootstrap feedback process.

-

NP for voting capabilities.

(J17608) 2-JUL-73 19:12; Title: Author(s): Kirk E. Kelley/KIRK; Distribution: /NPS JBN JCN DCE DVN; Sub-Collections: SRI-ARC; Clerk: KIRK;

Diane, I would be very intersted in seeing the ZOG documentation when it comes if you could remember to notify me.

(J17609) 2-JUL-73 19:20; Author(s): Kirk E. Kelley/KIRK; Distribution: /DSK; Sub-Collections: SRI-ARC; Clerk: KIRK;

Online Correspondence Before the TNLS Class in Cambridge June 18

This file records the online correspondence that led up to the class offered in TNLS by Dirk van Nouhuys, Marilyn Auerbach, andd Mike Kudlick from the Augmentation Research Center at BBN in Cambridge in the week beginning June 18. Sendmessages are given in full. ARC journal items are given either as catalog citations or as the note left in an author's "(author)" branch.

1

(AUERBACH)NWG/RFC 488: NLS Classes at Network Sites 23 Mar 73 15266 Auerbach (15266,1:wznC)

2

RAW 6-APR-73 08:05 15620

3

RESPONSE TO RFC 488
Message: IF YOU HOLD A CLASS ON NLS AT A SITE IN THE CAMBRIDGE AREA, WE WILL SEND SOMEONE.

3a

6-APR-73 11:35:00,974

4 4a

Date: 6-APR-73 1134

4b

4d

From: BBN-NET

4e

Re: nls-Boston

41

I've been checking around about interest in nls courses and there seem to be people hiding in the woodwork who either haven't heard abouttravelling nls or who always think of it as a great expenditure of time and effort because in the past it included a trip to the west coast. When it is made clear to them that nls will come to them they seem to express some interest—like, if it's here I might aswell learn about it. Therefore I suspect that response to yourinquiry will be slow. Other good news: we will be getting our refurbished (8k with mouseand keyset) imlac late in may (with the likelihood of having a substitute in its absence) so it appears that there will be interestin a DNLS course here in June. I think I can guarantee three or fourpeople in my group alone, and maybe some from the Tenex group. Doyou want me to follow that up? Ciao —Nancy————

40

(NOUHUYS)More on Boston INLS

6 Apr 73 15610 Nouhuys (15610,1:wznC)

5

5-MAY-73 13:04:15,322

6

NJN 14-MAY-73 06:20 16391

7

TNLS-Boston

Message: Dirk--

TNLS has caught on. I have heard from 13 people who are definite and three others who may have some question about the date. All of these are novice users—no refresher course or DNLS. A few may come in this week. I guess this great a number of students will require two classes. What do you propose to handle that? Two classes in a row or separated by some time? The only thing that worries me about two in a row is tying up resources (the conference room and the teletypes) for that long.

The dates are fine for me and my group (hardware people). All the others have indicated that any tiem in June is fine. The people who have responded are mostly from Sutherland's group in case you wondered.

Let me know soon what you decide. Ciao. —Nancy

7a

DVN 14-MAY-73 21:19 16456 Current State of Boston TNLS Location: (IJOURNAL, 16456, 1:w)

\*\*\*\*\* Note: Author Copy\*\*\*\*

.

DVN 16-MAY-73 08:48 14997 Letter to Sylvia Mayer about Boston TNLS Location: (IJOURNAL, 14997, 1:w) \*\*\*\*\*Note: Author Copy\*\*\*\*\*

9

(J16629) 16-MAY-73 14:01; Title: Author(s): Nancy J. Neigus/NJN; Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;

DVN 25-MAY-73 17:16 16827 Plans for TNLS Courses in June Location: (IJOURNAL, 16827, 1:w) \*\*\*\*\*Note: Author Copy\*\*\*\*\*

11

DVN 16-MAY-73 20:00 16638
There's a Crowd Waiting at BBSN
Message: Marilyn and Mike, Last night I got (journal, 16629,). It's a
Message so I'm doing a kind of secondary distribution it this item.
Jim wants to consider the politics of the situation with DIck before
we answer. I have already promised one of the places in the upcomming
course to Sylvia Mayer. I am going to urge offering another course
late in July.
\*\*\*\*\*Note: Author Copy\*\*\*\*\*

12

DVN 25-MAY-73 10:47 16808
Thanks and Backup on Dealing with DMCG
Location: (IJOURNAL, 16808, 1:w)
\*\*\*\*\*Note: Author Copy\*\*\*\*\*

13

(NOUHUYS)Plans for TNLS Courses in June 25 May 73 16827 Nouhuys (16827,1:wznC)

14

29-MAY-73 06:31:25,1210

16

Date: 29-MAY-73 0631-PDT

16a

From: BBN-NET

Hi Dirk--

16b

Re: nls and btnls

16d

16e

16f

I had some weird symptoms in als this morning. NLS would not echo anything I typed at it though it did send all of its prompts, such as A:, etc. I had no trouble in exec; everything i typed there was echoed properly. I sent an echo remote command from the TIP and I also gave the exec a fullduplex command, but none of this

16g

16 i

did any good. I linked to Smokey and told him about it; he said	16j
he would check it out, but had no more information for me.	16k
	161
Actually, to be more confusing, nls did echo viewspecs that I typed.	16m
For example, I would excute a print branch instruction by	16n
typing	160
pb. 2CAmCA	1601
and all i would see on my tty was	16p
*A: V: m	16p1
What's happening?	16q
	16r
Got your mesage. Glad you are coming to Boston. I have got the classes	16s
pretty much straightened out, except that I haven't heard from Abhay.	16t
I'll lay an ultimatum on him today. Also having a bit of trouble	16u
rounding up terminals. I'm going to NCC next week so I will have to	16v
	16w
Thanks for the coffee. Jake wouldn't take any money. I hope you	16x
won't be so stubborn.	16y
Nancy	16z
	16a@
absent myself from this whole mess for a while.	16aa

DVN MEJ 31-MAY-73 08:30 16912 Idents for Bostnls Location: (IJOURNAL, 16912, 1:w)

\*\*\*\*\* Note: Author Copy \*\*\*\*

17

1-JUN-73 06:14:11,1161

40

Date: 1-JUN-73 0614-PDT

From: BBN-NET Re: bostnls 18

Dirk--

I am extremely busy these days. I have one day to finish some writing that has to be sent out right away and I am going to New York for the NCC next week and will not be available at all then. The earliest I could send all that information is the second week in June.

18a

As for Users Guides and cue cards I have no idea who has what. You may assume that no one has anything. I am having a hard enough time trying to arrange for terminals for this thing; I didn't expect to have to handle your end of it as well.

18b

People taking the class:
Paul Johnson Bill Merrian Eleanor Warnock Joe Pasafiume
Sonya Shapiro Jerry Wolf Linda Amsden Gail Hedtler
(Bonnie Nash-Webber or Bill Woods)
these from the BBN-TENEX group

18c

Nancy Mimno Phyllis Hauser Pete M.W. Bliss Dick MacDonald from the BBN-NET group

18d

Alan Collins from BBN Div. 3.

18e

Lt Diane Shaw from Hanscom Field (AF)

18f

J. C. R. Licklider from MIT-DMCG.

184

I hope this is enough. I haven't got time for more. You can call the people at BBN or sndmsg to them for more info.
--Nancy

18h

DVN 1-JUN-73 09:29 16946

We will Get Idents for Boston Students

Message: I got your sndmsg listing names and reporting your over work and the manual situation. We'll take care of it. We will call the people who are not in the ident file and will send manuals to a selected few.

later Thanks and,

D

\*\*\*\*\*Note: Author Copy\*\*\*\*\*

19

(JERNIGAN)NIC TNLS Class 18-22 June 73, at BBN, Status Report 6 Jun 73 17055 Jernigan (17055,1:wznC)

20

(J17104) 11-JUN-73 07:14; Title: Author(s): Nancy J. Neigus/NJN; Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;

(NOUHUYS)Next to Last Journal Item on Arrangeents for BOSTNLS	
11 Jun 73 17120 Nouhuys (17120,1:wznC)	22
DVN 12-JUN-73 17:37 17144	
Who will Teach NLS in Boston Message: Marilyn will be with me too teach Monday and Tuesday; Mike Kudlick will replace her the last three days.	
*****Note: Author Copy****	23
(J17147) 13-JUN-73 06:01; Title: Author(s): Nancy J. Neigus/NJN; Distribution: /DVN; Sub-Collections: NIC; Clerk: NJN;	
	24

NJN 13-JUN-73 06:01 17147 Waybe this is the last? Location: (JJOURNAL, 17147, 1:w)

25

DVN 27-JUN-73 21:29 17511 Teaching NLS at BBN in Cambridge Location: (JJOURNAL, 17511, 1:w) \*\*\*\*\*Note: Author Copy\*\*\*\*\*

26

Online Correspondence Before the TNLS Class in Cambridge June 18

. . .

(J17610) 2-JUL-73 20:07; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /MEJ NJN MDK; Sub-Collections: NIC SRI-ARC; Clerk: DVN; Origin: <VANNOUHUYS>BOSTNLS.NLS; 3, 2-JUL-73 20:04 DVN;

For Voting on Needs and Possbilities

I vote for (journal, 17608,).

1

For Voting on Needs and Possbilities

. . .

(J17611) 2-JUL-73 20:09; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /JBN KIRK CHI NP; Sub-Collections: SRI-ARC NP; Clerk: DVN;

I came upon your message to Jin White about network delivey. He is off getting married [<journal,15088,>; an item worth your attention]. I have executed it secondarilly distributedly to Charles Irby and Dave Hopper who are the right people anyway.

1

I enjoyed my visit to Cambridge.

2

17612 Distribution Nancy J. Neigus, 1 1a Redistribution of 17599

(J17612) 2-JUL-73 20:43; Fitle: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /NJN; Sub-Collections: DPCS; Clerk: DVN; Origin: <VANNOUHUYS>MYLIN.NLS;1, 2-JUL-73 20:28 DVN;

SRL is on vacation, I am answering 17572.

1

When a journal item has been sent it resides until it is delivered in a file named after the sender's ident with a bunch of numbersin the directory <tejournal>. You can read it there.

2

Once it has been delivered a reference lives for a time in a temporary catalog file called (journal, tjcat,2:xbrrm>. "xbrrm" give a nice, 2-line view. You can search for it there by content on the author's or recipient's ident or title words.

3

In a week or two, when the regular catalog's are run, it graduates to the varous indices cited in (nic, locator, 2: xmb).

.

17613 Distribution

Bertha A. Rousseau, Gary L. Bockweg, Susan R. Lee, Paula Kazanjian,

1a

What to do If Your Journal Branch Is Destroyed

(J17613) 2-JUL-73 21:13; Title: Author(s): Dirk H. Van Nouhuys/DVN; Distribution: /BAR2 GLB SRL PK2; Sub-Collections: NIC SRI-ARC; Clerk: DVN; Origin: <VANNOUHUYS>MYLIN.NLS;1, 2-JJL-73 20:28 DVN;

jean, I got the link to "j17383:gw" but was told that this was illegal can you clarify?

(J17614) 3-JUL-73 05:18; Author(s): M. R. Leavitt/MRL; Distribution: /JI; Sub-Collections: NIC; Clerk: MRL;

. . .

2a

25

3

I've finally caught up with all this wildly flying correspondance on NETEDS or whatever it is being called these days. Much of it was picayune and childish. I have the following comments to add.

As a whole the editor is good. The only way to get a consensus on an editor is to make it simple; those people who want something more complex will never be satisfied with anything but their own. They are free to use their own. It is all right for an editor to have limitations, but in concurrence with others I think they should be explicitly stated.

For individual commands, I think a "backspace line" command is necessary, especially since you can't say "go to linenumber" (since there are none). It may be more difficult to implement, but we need a challenge somewhere. I think it should be a separate command as Ron suggested—that is, b[ackspace] m; or possibly a letter command with + or - preceding the number of lines—that is, m[ove] <+,->m.

Read is not a necessary command; in fact it may be easier this way (that is, with the file name specified when calling the editor). The DEC 10/50 system has an exec command MAKE which takes a filename as an argument and puts you in TECO with the proper file manipulation. People always seemed to prefer that to creating a new name within TECO, if you weren't patching several files together which you can't do in NEFEDS anyway.

Several years ago I taught LINED (which is eds with line numbers) to non-computer oriented students who had no trouble with it, except for the line numbers which they found confusing. I believe therefore that it is a simple enough editor for our purposes; the limitations are irrelevant for the level of operation for which it is planned; and no line numbers is a good thing.

LINED required that the filename be given on output, and that a file to be edited be read in. This proved to be very confusing to the students, who often forgot to name their files after they had completed working on them and all was lost. I think this supports the argument for the filename being a parameter of the NETEDS call.

A final note: The expediency argument is a very bad one to use, especially since we are in no particular rush at this point. I have had a bit of experience trying to patch up an expedient version of FTP and, believe me, it is a drag. I think we should take our time and come up with a neat, clean solution.

17615 Distribution

Leroy (Lee) C. Richardson, Frank G. Brignoli, Elizabeth J. (Jake)
Feinler, Michael D. Kudlick, James E. (Jim) White, Michael A.
Padlipsky, Kenneth L. Bowles, A. Wayne Hathaway, Jean Iseli, David H.
Crocker, Nancy J. Neigus, Stephen M. Wolfe, Ronald M. Stoughton, Jim
O. Calvin,

(J17615) 3-JUL-73 06:27; Fitle: Author(s): Nancy J. Neigus/NJN; Distribution: /USING; Sub-Collections: NIC USING; Clerk: NJN;

Hope I do this correctly.

1 b

1c

2a

This is a note of appreciation for the course in NLS at BBN two weeks ago.

It was an excellent experience, and I want to thank you sincerely for seeing to it that I really got the word about NLS.

Mike Kudlick and Dirk VanNuyhuys were very effective. Both are extremely good at communicating. They took the interests, abilities, and backgrounds of the members of the class into account—on an essentially individual, tutorial basis. They absorbed some slightly cantankerous suggestions without a bit of ruffling, and they made the very best of the opportunity to engage the class members through admixing exposition with on-line practice.

The class I was in was not as fast as the one that had been introduced to NLS just a day or two earlier. That was a good thing for me. I think I got a lot out of the course, and I think I shall now settle down to using NLS in some of my work.

On the basis of my experience in the course, I think that NLS has great potential. I think that I must say, however and reluctantly, that there is still a problem in the initial learning phase, a problem due to the fact that any such system must be complex and also to the fact that there is not yet a sufficiently simplified approach to learning it. Doubltless everyone thinks he sees how to develop such an approach, and of course I think I do, but the import of this part of this note is simply that I want you to know that I am concerned, that I wish you and NLS the very best of success and see this matter of complexity as being the one thing that could inhibit success significantly.

The difficulty in learning is not attributable at all, I emphasize, to the manner or procedure or organization of the teachers or the course. The difficulty is inherent in NLS itself. It is not that NLS is in fact very difficult. It is that busy people are not tolerant of anything that stands in the way of instant reinforcement. I think, therefore, that there should be a deliberate effort to define a habitable subset of NLS that can be taught and learned, to the point of effective use, in 15 minutes. The learner's first look at the procedure should convince him that he has to type only, say, 25 control characters to produce and send a memo of one page length. Something like that.

The real reason I am putting this thought into a note of appreciation is not that I found NLS too difficult at the course, or even last January when I used it in preparing and communicating with Steering Committee members about the report on the SUR project to the Principal Investigators' meeting. The real reason is that I have been noting a reluctance on the part of peole who ought to use the NLS in communicating with one another——a reluctance to settle down and use it. In particular, at the meeting Jim Watson attended at Harvard last week, there was

discussion (unfortunately after Jim had left for his plane) of procedures for carrying out further work this summer via teleconferencing. I suggested the NLS, but there was more interest in trying out the teleconferencing system of the Institute for the Future. The only voiced reaction to the idea of using NLS was that it required too much investment of time to learn.

2b

3

Please forgive me for getting into criticism when my purpose is to thank you for a great experience. I say again that I did so only because I have a genuine concern for the realization of a shared dream.

I think that I shall be in California about the middle of July. I'll let you know just when as soon as I can in the hope that I shall be able to visit you---but, of course, I realize that the middle of the summer is not just the time to catch you home. Incidentally, this exercise---typing this memo---is going pretty well. I am developing enough speed to make the whole thing very workable. One of the main things is not to wait for the echo. I am going to look into how to get local echo. (All the parameters have been set up for me by Abhay Bhushan---via a file called '.LOGIN (INIT) here and (perhaps, though I think it got deleted accidentally) my initial file in NLS.) Anyway, I hope you get this. Please give my compliments, thanks, and best wishes to Mike, Dirk, Jim, and other colleagues in your lab.

17616 Distribution Douglas C. Engelbart,

A. 6. 199 - 711

(J17616) 3-JUL-73 06:35; Author(s): J. C. R. Licklider/JCRL; Distribution: /DCE; Keywords: als course complexity kudlick vannuyhuys bbn thanks; Sub-Collections: NIC; Clerk: JCRL; Origin: <MIT-DMCG>MEMOTODOUG.NLS; 2, 3-JUL-73 06:18 JCRL;

Mike, you can get to link by printing the branch with the reference and then typing: (space)\*(CR) then (space).j17383(cr) then print(cr) - one of the responses will say file locked by XXXX - this does not mean anything relative to your being able to read the target of the link. Please leave me a message in MITRE-TIP directory if this either works or does not work - I just tried it to affirm to myself that things still worked as I remembered them; and they do. Hope this is of help to you.....Regards, Jean

17617 Distribution
M. R. Leavitt,

1 1a (J17617) 3-JUL-73 07:13; Author(s): Jean Iseli/JI; Distribution: /MRL(call me at 893-3500 ext 2371 if you have any problems.); Sub-Collections: NIC; Clerk: JI;

We would like you to do some specific things with the following information to see how efficiently you operate in the AHI system. I hope the instructions are sufficiently clear so you will have no difficulty in understanding what you are to do.	1
This exercise was generated on the execuport terminal. There are no correct answers to any of the questions, but we do to want get your general feelings. Try and work as rapidly as is comfortable for you. If you have time interruptions please note them.	2
time started (0910)	2a
I have been using the AHI system for 4 months.	2a1
When I am writing or editing a manuscript I feel very comfortable with the AHI language.	2a2
strongly agreeagreeneutral x disagreestrongly disagree.	2a2a
Why? I have very little recent experience with the system, especially since the adoption of the new conventions.	2a2b
The AHI system is helpful in my everyday work.	2a3
strongly agreeagreeneutral x disagreestrongly disagree. (	2a4
time completed (1130)	2 b

17618 Distribution James H. Bair,

exercise

(J17618) 3-JUL-73 08:52; Fitle: Author(s): Frank P. Sliwa/FPS; Distribution: /JHB; Sub-Collections: NIC; Clerk: FPS; Origin: <SLIWA>EXERCISE.NLS;1, 3-JUL-73 06:17 FPS;

tT and cr-lf

1

lack of cr-lf is intentional in \*T for use in tty window in DNLS

1

tT and cr-lf

(J17619) 3-JUL-73 08:54; Title: Author(s): Kenneth E. (Ken) Victor/KEV; Distribution: /DHC; Sub-Collections: SRI-ARC; Clerk: KEV;