


# MEMORANDUM

To: F. E. Heart  
From: B. Barker  
Subject: A Thumbnail Sketch   
Date: 12 March 1973

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I have come to believe that the primary source of difficulty in maintaining network reliability is not technical, but organizational and informational. I believe there are Honeywell Field Engineers quite capable of fixing virtually all the problems encountered; however,

- 1) In general these are not the people who work on our machines, at least not at first.
- 2) Despite Field Engineers' enthusiasm to fight a problem to completion, their management discourages their working overtime.
- 3) No one person has been responsible for keeping track of a given problem on a given machine.
- 4) The Field Engineers have not been trained about, and do not understand, the BBN specials.
- 5) No help is available to them in case of trouble, in any coherent fashion.
- 6) The FE's have not been given the results of experimental solutions to chronic problems.
- 7) No data as to the detailed nature of a problem has been available. This is now being fixed.

I believe the only way to fix these problems is to have a coordinated center responsible for these machines, with Field Engineers reporting to this center. I believe there must be an individual responsible for all maintenance, who knows what chronic problems exist in each machine, and exactly what experiments are being run in each machine. I believe that those individuals who actually fix machines must report directly to this person.

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I further believe that the routine functions of inspection, diagnosis, and corrective action, presently carried out manually by NCC must be automated to prevent human failures from having disastrous effects on the net, and to permit analysis of problems through summarizing failures. Analysis of the data obtained at the NCC can often enable an accurate diagnosis of a failing card.

More on all of this later. The issue of data error detection and software checksumming is a separate aspect of the reliability problem; I am delighted to see some attention at last being given to this issue.

BB/jm