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An Annotated Bibliography on Local Computer Networks

by John F. Shoch

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Preface

This bibliography brings together a wide range of material related to the general area of *local computer networking.* The references have been divided into two major parts, including the primary section on local networks, and a second section on the important related subject of radio-based systems. In addition, many of the individual entries have been supplemented with brief annotations, to help identify some of the salient characteristics of particular designs.

To help in navigating through these entries, each section is prefaced with a structured guide to the material, identifying related papers and providing a road map through the references. Papers of particular interest have been marked with a star (*), and may be noteworthy for one of several reasons: technical signifigance, important historical contributions, good summaries, or papers that are just well-written and informative. Anyone who takes the time to read them all would get a good overview of the material.

The field of local networking has been growing very rapidly, and some works may have been overlooked or incorrectly cited; suggestions for additions or corrections would be appreciated. The taxonomy and annotations attempt to interpret much of the literature and, of course, reflect only one opinionated view of the field. Many of these issues are subject to interpretation, and further comments or criticism would be very welcome. Please address any comments to:

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A large scale bibliographic effort such as this one can only succeed through the use of a well equipped library, and with the assistance of some very skilled librarians; this task was much harder then just compiling a list of references, since we wanted to peruse every publication before it was entered in the bibliography. Special thanks go to Giuliana Lavendel, Natalie Yount, Alice Wilder, and the staff of the Library at the Xerox Palo Alto Research Center, who helped to locate many of the more obscure references. We also received important aid from Richard Manuck in the Computer Science Department Library at Stanford University, and made use of the collection in the Engineering Library at Stanford.

1. Local computer networks

1.1. A guide to the literature on local computer networks

This section of the bibliography provides a broad taxonomy for classifying work on local computer networks. In general, systems have been categorized according to their basic physical connectivity: partially connected mesh networks, simple stars, circular structures, bus systems, etc. Each category also incorporates sub-headings for specific network designs, with citations referring to particular papers that are relevant; the complete references may be found in the following section.

0. General papers, surveys, and conference proceedings

[Chu, 1974]	Three re-print collections,
[Green & Lucky, 1975]	which include some of the
[Chu, 1976]	papers described here.
[NBS, 1978a]	
[McQuillan, 1978]	
[Patton & Franck, 1976]	
[Patton & Franck, 1977]	
[Patton & Franck, 1978]	
[Thurber & Freeman, 1979a]	
[Thurber & Freeman, 1979b]	revised version of 1979a
[IFIP, 1979]	

1. Partially connected networks, store-and-forward

1.1. Partially connected, store-and-forward via Imps

[Heart, *et al.*, 1970]	A small sampling of 4 Arpanet papers
[Kleinrock & Naylor, 1974]	
[Crowther, *et al.*, 1975]	
[McQuillan & Walden, 1977]*	
[McKenzie, 1979]	Arpanet derivatives
[Lidinsky, 1976]	Intra-Laboratory Network (ILN), at
[Amiot, 1976]	the Argonne National Laboratory
[Fortune, *et al.*, 1977]	
[Lampson & Simonyi, 1979]	Xerox Parc
[Diffley, 1973]	U. of Minn.
[Lin, 1978]	RIT
[Cain & Morling, 1978]	Mininet, Polytecnic of Central London and
[Morling, *et al.*, 1978]	the University of Bologne

1.1. Partially connected, store-and-forward via hosts

DS/1000 (Hewlett-Packard)

A design for a small scale "store-and-forward by host" system: point-to-point lines, packet switching through the users' hosts (not through Arpanet-style Imps). Distributed routing in the hosts, but the routing tables are static.

[Dickey, 1974] earlier system, 9700, star configurations only
[Hewlett-Packard, 1977a]
[Hewlett-Packard, 1977b]
[Hewlett-Packard, 1978a]
[Hewlett-Packard, 1978b]
[Shatzer, 1978a]
[Shatzer, 1978b]*

[Shatzer, *et al.*, 1979]

RPCNET (IBM Pisa, and others)
[Franchi & Sommi, 1975]
[Franchi, 1976]
[Lenzini & Sommi, 1976]
[Lenzini & Sommi, 1977]
[Lazzeri, *et al.*, 1977]
[Springer, *et al.*, 1978]

DECNET
Some of the earliest DECNET documents appeared around 1974-75. Although *eventually* intended to support store-and-forward routing through the hosts, the current DECNET offerings have no routing, and only support communication among directly connected hosts.
[Wecker, 1974]
[Wecker, 1975]
[Teichholtz, 1975]
[Wecker, 1976a]
[Wecker, 1976b]
[Conant & Wecker, 1976]
[Passafiume & Wecker, 1977]
[Wecker, 1978]
[DEC, 1978] introduces Decnet Phase II
[Loveland & Stein, 1979]
[Loveland, 1979]

2. Simple star networks and strictly hierarchical systems

NPL
Although authors of some of the earliest discussions of packet switching, the original NPL proposal was for a packet switched backbone net, using a star shaped system for local distribution. Their prototype system included only a single packet switch.
[Davies, *et al.*, 1967]
[Davies, 1968a] five early papers from IFIP '68
[Davies, 1968b]
[Wilkinson & Scantlebury, 1968]
[Bartlett, 1968]
[Scantlebury, *et al.*, 1968]
[Scantlebury, 1969]*
[Wilkinson, 1969]
[Davies, 1971]
[Scantlebury & Wilkinson, 1971]
[Barber, 1973]
[Davies & Barber, 1973]
[Scantlebury & Wilkinson, 1974]*

Octopus (LLL)
[Mendicino, 1970]
[Pehrson, 1973]
[Mendicino & Sutherland, 1973]
[Fletcher, 1973a]
[Fletcher, 1973b]
[Owens, 1973]
[Fletcher, 1975]
[Sloan, 1976]

[Watson, 1978]*

Philips Research
[Burnett & Sethi, 1977]

Kuipnet (Kyoto University Information Processing Network)
[Kitazawa, 1976]
[Sakai, *et al.*, 1977]
[Kitazawa & Sakai, 1978]

Labolink (Kyoto University)
[Yajima, *et al.*, 1977a]
[Yajima, *et al.*, 1977b]
[Iwama, *et al.*, 1978]

MISS (University of Chicago)
[Ashenhurst & Vonderohe, 1975]
[Ashenhurst, 1975]

Northwestern
[Lennon, *et al.*, 1973]
[Tsuchiya, *et al.*, 1974]
[Lennon, 1974]
[Lennon, 1975]

IBM's System Network Architecture (SNA)
[Gray & Blair, 1975]
[McFadyen, 1976]
[Cullum, 1976]
[Hobgood, 1976]
[Moulton & Sander, 1977]
[Gray, 1977]
[Cypser, 1978]
[Yasaki, 1978]

AT&T's Transaction Network Service (TNS)
[Fitzwilliam & Wagner, 1978]
[Heffron & Snow, 1978]

Datakit (Bell Labs)
[Fraser, 1979]
[Chesson, 1979]

Sperry-Univac AN/USQ-67 Switch
[Moran & Starkson, 1975]
[Sperry-Univac, 1977] Sperry-Univac AN/USQ-67 switch

Digital PBXs used to switch data
[Davis, 1979]

Misc.

[Rosen & Steele, 1973]	Purdue
[Christman, 1973]	Los Alamos Scientific Laboratory, LASL
[Barkauskas, *et al.*, 1973]	BTL-Naperville
[Innes & Alty, 1975]	Liverpool University
[Raimondi, *et al.*, 1976]	IBM (LABS/7)
[Bock, 1977]	George Washington University

[Van den Bos, 1977] University of Nijmegen
[Springer, 1978] RCA

3. Rings and loops

3.1. General papers, surveys, etc.

[Hafner, 1974a]
[Fraser, 1974d]

3.2. Rings run with control passing, or "token passing" techniques

Newhall and Farmer ("Newhall Loop")
Bell Labs, variable length frames distinguished with bipolar violation as a token. Not compatible with T1.
[Farmer & Newhall, 1969]*
[Venetsanopoulos & Newhall, 1970]
[Newhall & Venetsanopoulos, 1971]
[Yuen, *et al.*, 1972] simulations of a ring, with TTY hosts
[Manning, 1972] Newhall loop at Toronto
[Robilland, 1974]
[Lebetoulle, *et al.*, 1975]
[Carsten, *et al.*, 1977]
[Anderson, *et al.*, 1978] new project, with Newhall
[Carsten & Posner, 1978]

Distributed Computing System (UC Irvine)
[Will, 1970] considered both control passing & empty slot
[Farber, 1970] very early proposal, fixed size blocks
[Farber, 1972]
[Farber & Larson, 1972a]
[Farber & Larson, 1972b]
[Farber & Heinrich, 1972]
[Loomis, 1973(?)]
[Farber, *et al.*, 1973]
[Rowe, *et al.*, 1973]
[Farber & Vittal, 1973]
[Farber, 1974]
[Farber, 1975a]
[Farber, 1975b]
[Rowe, 1975]
[Lyle & Farber, 1976]
[Mokapetris, *et al.*, 1977]
[Farber, 1977]
[Mokapetris & Farber, 1977]
[Mokapetris, 1978]

LNI (and the LCS Net at MIT)
Note: LCS has also produced a series of Local Network Notes (LNN's), marked "...should not be referenced in other publications."
[Pogran & Reed, 1978]
[Clark, *et al.*, 1978]*
[Rowe & Birman, 1979]

Prime
[Nelson & Gordon, 1978]
[Gordon & Nelson, 1979]

Sperry-Univac Memory Multiplexer Data Link (MMDL)
Uses a form of distributed polling in a multiprocessor system
[Anderson, 1975]
[Moran, 1975]

Halo
[Rawson & Metcalfe, 1978]

Star-Ring
[Potvin, *et al.*, 1971]

Sycor
[Lewis, 1977]

Distributed algorithms for token regeneration in a ring
[Le Lann, 1977]
[Chang & Roberts, 1979]

3.3. Rings run with the "empty slot" techniques

Pierce
Blocked Switched Loop at Bell Labs, fixed size blocks.
[Pierce, *et al.*, 1971]
[Avi-Itzhak, 1971]
[Hayes & Sherman, 1971a]
[Hayes & Sherman, 1971b]
[Anderson, *et al.*, 1972]
[Pierce, 1972a]
[Pierce, 1972b]* written in 1970
[Kropfl, 1972]
[Coker, 1972]

Loop switching, emerged in conjunction with the Pierce ring
[Graham & Pollak, 1971]
[Brandenburg, *et al.*, 1972]
[Brandenburg & Gopinath, 1972]
[Yao, 1978]

Cambridge Ring
[Wilkes, 1975]
[Wilkes & Wheeler, 1976]
[Hopper, 1978a]
[Hopper, 1978b]
[Hopper & Wheeler, 1979]
[Wilkes & Wheeler, 1979]*
[Needham, 1979]

NSA
[Hassing, 1973]

ISUNet
[Lee & Pohm, 1978]

RCA
[White & Maxemchuk, 1974] (sets up channels)

Ring Century Bus, Thosiba R&D Center
[Okudâ, *et al.*, 1978]

IDANet proposal
[Bliss, *et al.*, 1976]

3.4. Rings run with "buffer insertion" techniques

Hafner's insertion ring
[Hafner, *et al.*, 1973]*
[Hafner, 1974a]
[Hafner, 1974b]

DLCN: Distributed Loop Computer Network (Ohio State University)
[Reames & Liu, 1975]
[Liu & Reames, 1975]
[Reames & Liu, 1976]
[Liu & Reames, 1977]
[Liu, *et al.*, 1977]
[Oh & Liu, 1977]
[Babic, *et al.*, 1977]
[Pardo, *et al.*, 1977]
[Liu, 1978]

3.5. Loops with centralized control or switching

Spider Network (Bell Labs)
[Hayes, 1973] Two papers modelling what became Spider
[Hayes, 1974]
[Fraser, 1974a]
[Fraser, 1974b]
[Fraser, 1974c]
[Fraser, 1974d]
[Fraser, 1975]

"New modular loop architecture" (Oregon State University)
[Jafari, 1977]
[Jafari & Lewis, 1977]
[Jafari, *et al.*, 1978a]
[Jafari, *et al.*, 1978b]

3.6. Specialized loops for terminal systems or CPU-IO busses

IBM 2790 terminal system
[Steward, 1970]
[Hippert, 1970a]
[Hippert, 1970b]

SDLC, in "loop mode"
[Donnan & Kersey, 1974]
[IBM, 1975]
[Beaston, 1978]
[Signetics, 1978]

IBM Supermarket/Retail system, uses an SDLC-style approach
[McEnroe, et al., 1975]
[Skatrud & Metz, 1976]

IBM 8100, uses an SDLC loop
[IBM, 1978a]

[IBM, 1978b]
[IBM, 1978c]

Collins C-System
[Newhall & Venetsanopoulos, 1971] cited as one of several examples
[Sharma, *et al.*, 1974]

Weller
[Weller, 1971] I/O loop at Bell Labs

"Frame addressing"
[Saito, 1978]

3.7. Reliability issues

[Zafiropulo, 1973]
[Zafiropulo, 1974a]
[Zafiropulo, 1974b]
[Hafner & Nenadal, 1976]
[Laurer & Skatrud, 1977]
[Wong, *et al.*, 1978]
[Hopper & Wheeler, 1979]

3.8. Other ring and loop systems, and misc. papers

[Zafiropulo & Rothauser, 1972]
[Huen, *et al.*, 1977] TECHNEC at IIT
[Yatsuboshi, *et al.*, 1978] Fujitsu
[Schwartz, 1977] chapter 12, "Polling in networks"
[Agrawala, *et al.*, 1978] compares empty slot and token rings

3.9 Other analytical papers on ring and loop structures

[Spragins, 1971]
[West, 1972]
[Konheim, 1972]
[Spragins, 1972a]
[Kaye, 1972]
[Chu & Konheim, 1972]
[Spragins, 1972b]
[Gall & Mueller, 1972]
[Hayes & Sherman, 1972]
[Noguchi, *et al.*, 1974]
[Wu & Chen, 1975]
[Konhein, 1976]
[Majithia & Dube, 1976]
[Majithia & Dube, 1977]
[Yu & Matithia, 1979]
[Richardson & Yu, 1979]

4. Multiaccess bus networks

Ethernet System
[Metcalfe & Boggs, 1976]*
[Metcalfe, *et al.*, 1977]
[Boggs & Metcalfe, 1978]
[Shoch & Hupp, 1979]*

[Thacker, *et al.*, 1979]
[Shoch, 1979]

Fibernet
[Rawson & Metcalfe, 1978]*
[Rawson & Nafarrate, 1978]
[Rawson, *et al.*, 1978]
[Rawson, 1979a]
[Rawson, 1979b]

Priority Ethernet (University of Tokyo)
[Onoe, *et al.*, 1978]

Acknowledging Ethernet
[Tokoro & Tamaru, 1977]

Hyperchannel (NSC)
[Thornton, *et al.*, 1975]
[NSC, 1976]
[Franta, 1976]
[Christensen, 1977]
[Franta, 1977]
[Rodgers, 1977] ITDS, at Goddard Space Flight Center
[Christensen, 1978a]
[Christensen & Franta, 1978]
[Donnelley & Yeh, 1978a]*
[Christensen, 1978b]
[Miller, 1978]
[Donnelley & Yeh, 1978b]
[Nessett, 1978]
[Bilek, *et al.*, 1978]
[Thornton, 1979]*
Note: numerous other papers have appeared in the proceedings of the Minn. workshops, some of which were co-sponsored with NSC.

NBS
[NBS, 1977]
[Carpenter & Rosenthal, 1978]
[NBS, 1978b]
[Carpenter, *et al.*, 1978]
[Carpenter & Sokol, 1979]

Ford Motor Co.
[Sherman & Gable, 1977]
[Sherman, *et al.*, 1978a]
[Sherman, *et al.*, 1978b]
[Gable, 1978]

Ford Aerospace, Palo Alto
[Biba & Yeh, 1979]

ENET and CNET (Queen Marry College, London)
[West, 1977]
[West, 1978]
[West & Davison, 1978]
[Davison, 1978]

Chaosnet (MIT AI Lab)
[Greenblatt, 1979]

Batnet (Battelle)
[Gerhardstein, *et al.*, 1978]

Ariel (Zilog)
[Hunt, 1978]

PERQ (Three Rivers Computer Corp.)
[Three Rivers, 1979(?)]

Sperry-Univac Shinpads
[Sperry-Univac, 1978(?)]
[Kuhns & Shoquist, 1979]

Background on use of CATV to carry data
[Switzer, 1972]
[Lancaster & Garodnick, 1973]
[Smith, 1975]
[Frisch, 1977]

Mitre CATV-based systems (Mitrix, dual-mode, CSMA, etc.)

[Labonte, 1973]	Mitrix -- TDM with central control
[Willard, 1973]	
[Willard, 1974]	
[DeMarines & Hill, 1976]	
[Meisner, *et al.*, 1977a]	"dual mode", for the CIA, Mitrix II
[Meisner, *et al.*, 1977b]	Mitrix, dual mode, & CSMA/LWT
[Hopkins, 1977]	CSMA/LWT
[Hanks, 1978]	Mitrenet
[DeMarines & Willard, 1978]	
[Naylor, 1978]	
[Wanner, 1978]	system at the Promis Lab., polling
[Hertzberg, *et al.*, 1979]	
[Hopkins, 1979]	

Honeywell "multi-computer" bus structures
[Jensen, 1975]
[Jensen, 1978]

Other bus structures, and misc. papers
[Schenkel, 1974]
[Ohnsorge & Schenkel, 1974]
[Orthner & McKeown, 1975]
[Agrawala, *et al.*, 1977]
[Szurkowski, 1978]
[Almes & Lazowska, 1979]
[Tobagi & Hunt, 1979]

5. Other related topics

IEEE 488
[IEEE, 1975]
[Loughry & Allen, 1978]

Use of a shared, optical broadcast medium
[Gfeller, *et al.*, 1978]

1.2. References on local computer networks

[Agrawala, *et al.*, 1977]
A. K. Agrawala, R. M. Bryant, and J. Agre, "Analysis of an Ethernet-like protocol", *Computer Networking Symposium*, IEEE Computer Society and NBS, Gaithersburg, December 1977, pp. 104-111.
Models a specific Ethernet-style design using a separate network processor at each host; this processor can buffer packets and generate low-level acks.

[Agrawala, *et al.*, 1978]
A. K. Agrawala, J. R. Agre, and K. D. Gordon, "The slotted ring vs. the token-controlled ring: a comparative evaluation", *IEEE Computer Software and Applications Conference (COMPSAC 1978)*, Chicago, November 1978, pp. 674-679.

[Almes & Lazowska, 1979]
G. T. Almes and E. D. Lazowska, *The behavior of Ethernet-like computer communications networks*, Tech. Report No. 79-05-01, Dept. of Computer Science, U. of Washington, April 1979. Revised version presented at the *7th Symposium on Operating Systems Principles*, Pacific Grove, December 1979.

[Amiot, 1976]
L. W. Amiot, "Front-ending at Argonne National Laboratory", *Proc. of the [1st] Berkeley Workshop on Distributed Data Management and Computer Networks*, Lawrence Berkeley Laboratory, Berkeley, California, May 1976, pp. 43-56.
Includes a description of the connection between the large Central Computing Facility (CCF) and the Intra-Laboratory Network (ILN).

[Anderson, 1975]
D. R. Anderson, "The EPIC-DPS, a distributed network experiment", *IEEE Electronics and Aerospace Systems Convention (Eascon '75)*, Washington, September 1975, paper 121.
A multi-processor system, using a special ring system for processor-to-memory communication (MMDL). Uses a form of "distributed polling."

[Anderson, *et al.*, 1972]
R. R. Anderson, J. F. Hayes, and D. N. Sherman, "Simulated performance of a ring-switched data network", *IEEE Trans. on Comm.*, 20:3, June 1972, pp. 576-591.
GPSS simulation of a Pierce loop.

[Anderson, *et al.*, 1978]
Edward W. Anderson, Edmunde E. Newhall, and Anastasios N. Venetsanopoulos, "A microprocessor-based controller for a loop switching system", *International Conference on Communications (ICC '78)*, Toronto, June 1978.
Loop with a supervisor: provides master clock, initialization of 'control' and recovery. Uses modified HDLC: control sequence is a 0 + seven 1's, changed to an HDLC flag when control is siezed. Uses separate loop interface, with buffers, etc. -- microprocessor + 60 IC's. Only a prototype controller; runs at up to 19.2 kbps.

[Ashenhurst, 1975]
Robert L. Ashenhurst, "Centralized or decentralized computing -- or maybe some of both?", *11th IEEE Computer Society International Conference (COMPCON Fall '75)*, Washington, September 1975, pp. 59-60.

[Ashenhurst & Vonderohe, 1975]
R. L. Ashenhurst and R. H. Vonderohe, "A hierarchical network", *Datamation*, 21:2, February 1975, pp. 40-44.
Simple hierarchy: local minicomputers tied into an intermediate level (MOM), and ultimately a large host (DAD).

[Avi-Itzhak, 1971]
B. Avi-Itzhak, "Heavy traffic characteristics of a circular data network", *Bell System Technical Journal*, 50:8, October 1971, pp. 2521-2549.
Has a forward reference to [Pierce, 1972b], which later outlined the design of this "empty slot" ring.

[Babic, *et al.*, 1977]
Gojko A. Babic, Ming T. Liu, and Roberto Pardo, "A performance study of the distributed loop computer network (DLCN)", *Computer Networking Symposium*, IEEE Computer Society and NBS, Gaithersburg, December 1977, pp. 66-76.

[Barber, 1973]
D. L. A. Barber, "Local data networks", in Grimsdale and Kuo, eds., *Computer Communication Networks (Proc. of the NATO Advanced Study Institute on Computer Communication Networks, Sussex, September 1973)*, Noordhoff, 1975.
Very general introduction, and a bit of detail on the NPL local network.

[Barkauskas, *et al.*, 1973]
B. J. Barkauskas, R. R. Rezac, and C. A. Trlica, "A computer network for peripheral time sharing", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, February 1973, pp. 227-229.
BTL-Naperville, star configuration, mini-computers given access to peripherals on the central machine.

[Bartlett, 1968]
K. A. Bartlett, "Transmission control in a local data network", *IFIP Congress 68*, Edinburgh, August 1968.
More on the use of multiplexers to reach the single switch in a local area of the NPL proposal.

[Beaston, 1978]
John Beaston, "LSI devices control loop-mode SDLC data links", *Data Communications*, August 1978, pp. 65-72.

[Biba & Yeh, 1979]
K. J. Biba and J. W. Yeh, "Fordnet: A front-end approach to local computer networks", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.
Ford Aerospace, Palo Alto. Uses PDP-11's with a separate controller/interface (the UMC-Z80 which includes a Zilog Z80 and SIO ship); runs at 880 kbps, and connects to the Ford Motor Co. transceiver.

[Bilek, *et al.*, 1978]
R. W. Bilek, D. A. Lutzky, and J. J. Peterka, "Simulating a local computer network", *Third Conference on Local Computer Networking*, U. of Minn., Minneapolis, October 1978.
Discrete event simulation of a Hyperchannel system; very limited results, but did show potential deadlocks in allocation of channel adapters.

[Bliss, *et al.*, 1976]
B. B. Bliss, W. A. Counterman, and E. A. Mackey, "Proposal for a ring network -- IDANET", *Conference on Experiments in New Approaches to Local Computer Networking*, U. of Minn., St. Paul, September 1976.
A very similar version of this paper was also presented at the same conference the following year.

[Bock, 1977]
Peter Bock, "A data communications operating system (DCOS) for microprocessor-driven peripherals", *16th Annual Technical Symposium*, ACM(DC) and NBS, Gaithersburg, Maryland, June 1977, pp. 159-166.
Simple star to share peripherals among a small number of hosts; uses Altair as a switch, operator control to set up connections, runs at up to 9600 kbps.

[Boggs & Metcalfe, 1978]
David R. Boggs and Robert M. Metcalfe, *Communications Network Repeater*, US Patent no. 4,099,024, July 1978.

[Brandenburg, *et al.*, 1972]
L. H. Brandeburg, B. Gopinath, and R. P. Kurshan, "On the addressing problem of loop switching", *Bell System Technical Journal*, 50:7, September 1972, pp. 1445-1469.
More on addressing methods for inter-loop switching. Uses matrix algebra techniques to analyze the network; provides a more space-efficient method.

[Brandenburg & Gopinath, 1972]
L. H. Brandenburg and B. Gopinath, "A table look up approach to loop switching", *Bell System Technical Journal*, 51:9, November 1972, pp. 2095-2099.
More on inter-loop switching, this time using a scaler product of the address in the block, with a bit entry in a special table. Yields the distance to the destination.

[Burnett & Sethi, 1977]
D. J. Burnett and H. R. Sethi, "Packet switching at Philips Research Laboratories", *Computer Networks*, 1977, pp. 341-348.
Hosts all linked to a central packet switch.

[Cain & Morling, 1978]
G. D. Cain and R. C. S. Morling, "Mininet: a local area network for real-time instrumentation and control", *Third Conference on Local Computer Networks*, U. of Minn., Minneapolis, October 1978.
A special-purpose system for process control devices. Very small packets, virtual circuits, store-and-forward via microprocessor "exchanges."

[Carpenter & Rosenthal, 1978]
Robert J. Carpenter and Robert Rosenthal, "A local network for the National Bureau of Standards", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, pp. 7-9.

[Carpenter & Sokol, 1979]
R. J. Carpenter and J. Sokol, Jr., "Serving users with a local area network", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.

[Carpenter, *et al.*, 1978]
Robert J. Carpenter, Joseph Sokol, Jr., and Robert Rosenthal, "A microprocessor-based local network node", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, September 1978, pp. 104-109.
Microprocessor TIE's for dumb devices; packet buffer in the TIE, user interface runs only up to 9600 bps.

[Carsten & Posner, 1978]
R. T. Carsten and M. J. M. Posner, "Simplified statistical models of single and multiple Newhall loops", *National Telecommunications Conference (NTC '78)*, Birmingham, December 1978, pp. 44.5.1-44.5.7.

[Carsten, *et al.*, 1977]
R. T. Carsten, E. E. Newhall, and M. J. M. Posner, "A simplified analysis of scan times in an asymmetrical Newhall loop with exhaustive service", *IEEE Trans. on Comm.*, com-25:9, September 1977, pp. 951-957.

[Chang & Roberts, 1979]
E. Chang and R. Roberts, "An improved algorithm for decentralized extrema-finding in circular configurations of processes", *CACM*, 22:5, May 1979, pp. 281-283.
Discusses an algorithm that might be used to assure unique regeneration of a lost control token, in a token-passing ring system.

[Chesson, 1979]
G. L. Chesson, "Datakit software architecture", *International Conference on Communications (ICC '79)*, Boston, June 1979.
See also [Fraser, 1979].

[Christensen, 1977]
Gary Christensen, "Data trunk contention in the Hyperchannel network", *Conference on "A Second Look at Local Computer Networking"*, U. of Minn., Minneapolis, October 1977, p. 10.

[Christensen, 1978a]
Gary S. Christensen, "Applications of Hyperchannel", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978.

[Christensen, 1978b]
Gary S. Christensen, "Network monitor unit", *Third Conference on Local Computer Networks*, U. of Minn., Minneapolis, October 1978.

[Christensen & Franta, 1978]
Gary S. Christensen and W. R. Franta, "Design and analysis of the access protocol for Hyperchannel networks", *3rd USA-Japan Computer Conference*, San Francisco, October 1978, pp. 86-93.
This paper is actually a consolidation of two different papers which were presented at an earlier conference in Minneapolis. The first part is an overview of the Hyperchannel, which is not bad; the second part is a bit of analysis, and is not as strong.

[Christman, 1973]
Ronald D. Christman, "Development of the LASL computer network", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, February 1973, pp. 239-242.
A star configuration, to service terminal users and large machines; controlled from a single Front End Machine (FREM).

[Chu, 1974]
W. W. Chu, ed., *Advances in Computer Communications*, Artech House, Dedham, Mass., 1974.

[Chu, 1976]
W. W. Chu, ed., *Advances in Computer Communications, 2nd edition*, Artech House, Dedham, Mass., 1976.
Contains all of the articles from [Chu, 1974], plus some new ones. Both editions include reprints of [Abramson, 1973b; Roberts, 1973; Yuen, *et al.*, 1972; Farber, *et al.*, 1973; Pierce, 1972a; Hayes & Sherman, 1971b; Davies, 1968b; Scantlebury & Wilkinson, 1971; Heart, *et al.*, 1970].

[Chu & Konheim, 1972]
W. W. Chu and A. G. Konheim, "On the analysis and modeling of a class of computer communications systems", *IEEE Trans. on Comm.*, com-20:3, June 1972, pp. 645-660.
Includes a discussion of analytical results for loops.

[Clark, *et al.*, 1978]
David D. Clark, Kenneth T. Pogran, and David P. Reed, "An introduction to local area networks", *Proc. of the IEEE*, 66:11, November 1978, pp. 1497-1517.

[Coker, 1972]
C. H. Coker, "An experimental interconnection of computers through a loop transmission system", *Bell System Technical Journal*, 51:6, July-August 1972, pp. 1167-1175.
Written October 1971; describes the interface to the two host computers. Honeywell DDP516, Bell Labs Acoustic Research Facility, 16k, 16bit, ~1 microsec. memory. Did an FTP program, to get files from the other machine; used a PosAck/Retransmission scheme. Also did remote loading and running of the second machine. Max. user data rate: 50 Kbits/sec.

[Conant & Wecker, 1976]
G. Conant and S. Wecker, "DNA: an architecture for heterogeneous computer networks", *Third International Conference on Computer Communication (ICCC)*, Toronto, August 1976, pp. 618-625.

[Crowther, *et al.*, 1975]
W. R. Crowther, F. E. Heart, A. A. McKenzie, J. M. McQuillan, and D. C. Walden, "Issues in packet switching network design", *AFIPS Conference Proceedings -- 1975 NCC*, 44, Anaheim, May 1975, pp. 161-175.
An expanded version of this paper later appeared as [McQuillan & Walden, 1977].

[Cullum, 1976]
P. G. Cullum, "The transmission subsystem in Systems Network Architecture", *IBM Systems Journal*, 15:1, 1976, pp. 24-38.

[Cypser, 1978]
R. J. Cypser, *Communications architecture for distributed systems*, Addison-Wesley, 1978.
Presents a detailed discussion of IBM's SNA.

[Davies, *et al.*, 1967]
D. W. Davies, K. A. Bartlett, R. A. Scantlebury, and P. T. Wilkinson, "A digital communication network for computers giving rapid response at remote terminals", *ACM Symposium on Operating System Principles*, Gatlinburg, Tenessee, October 1967.
The original paper on the NPL proposal.

[Davies, 1968a]
D. W. Davies, "Communication networks to serve rapid-response computers", *IFIP Congress 68*, Edinburgh, August 1968.

[Davies, 1968b]
D. W. Davies, "The principles of a data communication network for computers and remote peripherals", *IFIP Congress 68*, Edinburgh, August 1968. Reprinted in [Chu, 1976].
Describes the two-tier system, with a packet-switched backbone and a single switch in each local area.

[Davies, 1971]
D. W. Davies, "Packet switching in a public data network", *Information Processing 71 (Proc. of IFIP 71)*, Ljubljana, August 1971.
Mentions the single-switch configuration at NPL.

[Davies & Barber, 1973]
Donald W. Davies and Derek L. A. Barber, *Communication Networks for Computers*, John Wiley & Sons, 1973.
Esp. pp. 261-267, on the NPL local network: a tree of multiplexers with a single switch.

[Davis, 1979]
George R. Davis, "The changing face of the private branch exchange," *Data Communications*, August 1979, pp. 43-49.
A general review of newer PBXs using digital switching, and their potential to serve as star-shaped switches handling digital data connections.

[Davison, 1978]
Alan Davision, *Design of a low-cost broadcast packet transmission network*, TR 119, Computer Systems Laboratory, Queen Mary College, October 1977, revised March 1978.

[DEC, 1978]
Digital Equipment Corporation, *Decnet phase II, networking distributed computers, a progress report, March 1978*, 1978.

[DeMarines & Hill, 1976]
Victor A. DeMarines and Lawrence W. Hill, "The cable bus in data communications", *Datamation*, August 1976.

[DeMarines & Willard, 1978]
Victor A. DeMarines and David Willard, "Use of CATV coaxial cable supported bus structures", *ACM 1978 Annual Conference*, Washington, DC, December 1978, pp. 478-479.

[Dickey, 1974]
Shane Dickey, "Distributed computer systems", *Hewlett-Packard Journal*, November 1974, pp. 2-11.
Star shaped system; precursor to later HP DS/1000 work.

[Diffley, 1973]
Michael W. Diffley, "Design considerations of a proposed local area computer network emphasizing the needs of the health sciences", *3rd Data Communications Symposium*, ACM and IEEE, St. Petersburg, Florida, November 1973, pp. 97-103.
Currently running a very small star; proposal for a small Arpanet-style system, with "exchange nodes".

[Donnan & Kersey, 1974]
R. A. Donnan and J. R. Kersey, "Synchronous data link control: A perspective", *IBM Systems Journal*, 13:2, 1974. Reprinted in [Green & Lucky, 1975].

[Donnelley & Yeh, 1978a]
James E. Donnelley and Jeffry W. Yeh, "Interaction between protocol levels in a prioritized CSMA broadcast network", *Proceedings of the Third Berkeley Workshop on Distributed Data Management and Computer Networks*, Lawrence Berkeley Laboratory, San Francisco, August 1978. Reprinted in *Computer Networks*, 3, 1979, pp. 9-23.

[Donnelley & Yeh, 1978b]
James E. Donnelley and Jeffry W. Yeh, "Simulation studies of round robin contention in a prioritized CSMA broadcast network", *Third Conference on Local Computer Networking*, U. of Minn., Minneapolis, October 1978.
Further simulations of proposed modifications to the Hyperchannel mechanisms; done at LLL.

[Farber, 1970]
D. J. Farber, "Data ring oriented computer networks", in Rustin, ed., *Computer Networks (Courant Computer Science Symposium 3, November-December 1970)*, Prentice-Hall, New York, 1972, pp 79-94.
A fascinating early paper: no central control, but fixed size blocks on the loop (300 bits); each with a leading free/busy bit. Direct, 8-bit addressing of destination node.

[Farber, 1972]
D. J. Farber, "Networks, an introduction", *Datamation*, April 1972, pp. 36-39. Reprinted in [Green & Lucky, 1975].
A comparison of 7 networks, including DCS. Written in the "future present tense," it reports 9 nodes on the ring, using fixed length messages; that configuration was apparently never operational.

[Farber, 1974]
D. J. Farber, "An overview of distributed processing aims", *9th Annual [sic] IEEE Computer Society International Conference (COMPCON Fall '74)*, Washington, September 1974, pp. 191-193.

[Farber, 1975a]
D. J. Farber, "A ring network", *Datamation*, February 1975, pp. 44-46.

[Farber, 1975b]
D. J. Farber, "A distributed computer system -- an overview", *Proceedings of the National Electronics Conference*, 30, Chicago, Oct. 1975, pp. 188-190.

[Farber, 1977]
David J. Farber, "The ARPA local network interface", *IEEE Electronics and Aerospace Systems Convention (Eascon '77)*, Arlington, Va., September 1977, paper 14-3.

[Farber & Heinrich, 1972]
D. J. Farber, and F. R. Heinrich, "The structure of a distributed computer system -- the distributed file system", *First International Conference on Computer Communication (ICCC)*, Washington, October 1972, pp. 364-370.
Elaborates upon the file system, as part of DCS.

[Farber & Larson, 1972a]
David J. Farber and Kenneth C. Larson, "The system architecture of the distributed computer system -- the communication system", *Proceedings of the Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 21-27.
Fixed length, empty slot approach.

[Farber & Larson, 1972b]
David J. Farber and Kenneth C. Larson, "The structure of a distributed computing system -- software", *Proceedings of the Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 539-545.

[Farber & Vittal, 1973]
D. J. Farber, and J. J. Vittal, "Extendability considerations in the design of the Distributed Computer System (DCS)", *National Telecommunications Conference (NTC '73)*, Atlanta, November 1973, pp. 15E.1-15E.6.

[Farber, *et al.*, 1973]
D. J. Farber, J. Feldman, F. R. Heinrich, M. D. Hopwood, K. C. Larson, D. C. Loomis, and L. A. Rowe, "The Distributed Computing System", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, February 1973, pp. 31-34. Reprinted in [Chu, 1976].

[Farmer & Newhall, 1969]
W. D. Farmer and E. E. Newhall, "An experimental distributed switching system to handle bursty computer traffic", *Proceedings of the ACM Symposium on Problems in the Optimization of Data Communication Systems [1st Data Communications Symposium]*, Pine Mountain, Georgia, October 1969, pp. 1-33.
Describes 3-station prototype of a ring: no central control, but a "loop supervisor" to provide clocking. 6.312 Mhz, 3.156 Mbps, but does not use standard T2 coding; 1 bit delay per host. "Primary" part of interface is powered from the line. Loop supervisor puts 0's on the loop, reclocks signals.

[Fitzwilliam & Wagner, 1978]
J. W. Fitzwilliam and R. L. Wagner, "Transaction network, telephones and terminals: overview", *Bell System Technical Journal*, 57:10, December 1970, pp. 3325-3329.
Transaction system with a central host, via switched network or using a local message switch for polled access.

[Fletcher, 1973a]
John G. Fletcher, "Octopus communications structure", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, San Francisco, February 1973, pp. 21-23.

[Fletcher, 1973b]
J. G. Fletcher, "The Octopus computer network", *Datamation*, April 1973, pp. 58-63.

[Fletcher, 1975]
John G. Fletcher, "Principles of design in the Octopus computer network", *ACM 1975 Annual Convention (ACM '75)*, Minneapolis, October 1975, pp. 325-328.

[Fortune, *et al.*, 1977]
P. J. Fortune, W. P. Lidinsky, and B. R. Zelle, "Design and implementation of a local computer network", *International Conference on Communication (ICC '77)*, Chicago, June 1977, pp. 221-226.
Design for an Arpanet-like system; first phase is a two-host prototype.

[Franchi, 1976]
Paolo Franchi, "Distribution of functions and control in RPCNET", *3rd Annual Symposium on Computer Architecture*, ACM SigArch, January 1976, pp. 130-135.
Sort of a mini-SNA, but with no SSCP. S/F via the hosts; uses flooding to spread changes to the network organization.

[Franchi & Sommi, 1975]
P. Franchi and G. Sommi, "RPCNET features and components", *European Computer Conference on Communication Networks*, Online, London, September 1975, pp. 81-93.

[Franta, 1976]
W. R. Franta, "Early remarks on trunk utilization and message throughput", *Conference on Experiments in New Approaches to Local Computer Networking*, U. of Minn., St. Paul, September 1976.

[Franta, 1977]
W. R. Franta, "Decision and realization points for random access path controls", *Conference on "A Second Look at Local Computer Networking"*, U. of Minn., Minneapolis, October 1977.

[Fraser, 1974a]
A. G. Fraser, "Spider -- an experimental data communications system", *International Conference on Communications (ICC '74)*, Minneapolis, June 1974, pp. 21F-1 - 21F-10.
Buffered, centrally controlled. Central switching machine, connected to terminals with a T1 twisted-pair line (1.544 megabits/sec). Fixed slots around the loop. Each TIU introduces 8 bits of delay.

[Fraser, 1974b]
A. G. Fraser, *Spider -- A data communications experiment*, Bell Laboratories Computing Science Technical Report #23, December 1974.

[Fraser, 1974c]
A. G. Fraser, *Loops for data communications*, Bell Laboratories Computing Science Technical Report #24, December 1974.

[Fraser, 1974d]
A. G. Fraser, "Loop transmission systems for data", *Computer Communications Review*, 4:4, October 1974, pp. 2-8.

[Fraser, 1975]
A. G. Fraser, "A virtual channel network", *Datamation*, 21:2, February 1975, pp. 51-56.

[Fraser, 1979]
A. G. Fraser, "Datakit -- A modular network for synchronous and asynchronous traffic", *International Conference on Communications (ICC '79)*, Boston, June 1979.
See also [Chesson, 1979]. Up to 511 modules connected in a star to a single node.

[Frisch, 1977]
Ivan T. Frisch, "Experiments on random access packet data transmission on coaxial cable video transmission systems", *IEEE Trans. on Comm.*, com-25:10, October 1977, pp. 1199-1203.
Describes results of experimental transmission of packets through a CATV system.

[Gable, 1978]
M. G. Gable, "A local network architecture for industrial applications", *Instrumentation Society of America 1978 Annual Conference*, pp. 119-124.
Ford Research's bus sytem for process control, testing, etc.

[Gall & Mueller, 1972]
D. A. Gall and H. R. Mueller, "Waiting-time distributions and buffer overflow in priority queueing systems", *IEEE Trans. on Comm.*, com-20:5, October 1972, pp. 865-877.
Single server loop, with priority polling scan.

[Gerhardstein, *et al.*, 1978]
L. H. Gerhardstein, J. O. Schroeder, and A. J. Boland, "The Pacific Northwest Laboratory minicomputer network", *Proceedings of the Third Berkeley Workshop on Distributed Data Management and Computer Networks*, Lawrence Berkeley Laboratory, San Francisco, August 1978.

[Gfeller, *et al.*, 1978]
F. R. Gfeller, H. R. Muller and P. Vettiger, "Infrared communication for in-house applications", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, September 1978, pp. 132-138.
IBM Zurich; using LED's and photodiodes on terminals within a room, with a 'satellite' on the ceiling.

[Gordon & Nelson, 1979]
R. L. Gordon and D. L. Nelson, *The use of rings in high availability local networks*, Prime Computer Inc., Research Department Technical Report, March 2, 1979.

[Graham & Pollak, 1971]
R. L. Graham and H. O. Pollak, "On the addressing problem for loop switching", *Bell System Technical Journal*, 50:8, October 1971, pp. 2495-2519.
Contains a forward reference to Pierce's then unpublished paper, which did not emerge until the following year. Advocates distributed control, and not a pre-determined routing. Suggests special binary addresses for each node; can then compute a Hamming distance between two nodes (loops).

[Gray, 1977]
J. P. Gray, "Network services in Systems Network Architecture", *IEEE Trans. on Comm.*, com-25:1, January 1977, pp. 104-116.

[Gray & Blair, 1975]
J. P. Gray and C. R. Blair, "IBM's Systems Network Architecture", *Datamation*, April 1975, pp. 51-56.

[Green & Lucky, 1975]
P. E. Green, and R. W. Lucky, eds., *Computer Communications*, IEEE Press, New York, 1975.
Includes reprints of [Donnan & Kersey, 1974; Switzer, 1972; Abramson, 1973b, Farber, 1972; Pierce, 1972a; West, 1972; Heart, *et al.*, 1970].

[Greenblatt, 1979]
Richard Greenblatt, personal communication, MIT AI Laboratory, May 1979.
Demonstration of the Chaosnet. There are no papers yet published.

[Hafner, 1974a]
E. R. Hafner, "Digital communication loops - a survey", *International Zurich Seminar on Digital Communication*, March 1974, paper D1.
A good introductory survey; additional details on their "loop extension" approach.

[Hafner, 1974b]
E. R. Hafner, "Implementation of distributed control in a loop system", *International Switching Symposium*, Munchen, 1974, pp. 148/1 - 148/4.
Describes the switching procedures used with the ring to support voice communication: establish calls, carry voice, build conference calls, etc.

[Hafner & Nenadal, 1976]
E. Hafner and Z. Nenadal, "Enhancing the availability of a loop system by meshing", *International Zurich Seminar on Digital Communication*, March 1976, paper D4.
Running alternate lines in a loop structure, able to skip over failed nodes.

[Hafner, *et al.*, 1973]
E. R. Hafner, Z. Nenadal, M. Tschanz, "A digital loop communication system", *International Conference on Communications (ICC '73)*, Seattle, June 1973, pp. 50-24 - 50-29. Revised version published in *IEEE Trans. on Comm.*, June 1974, pp. 877-881.
Switching a shift register into a loop. Distributed control, but still has a special node to provide clock and synch., remove smashed packets. Designed mainly for voice.

[Hanks, 1978]
James P. Hanks, "Mitrenet -- introduction and overview", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, p. 10.

[Hassing, *et al.*, 1973]
Thomas E. Hassing, Raymond M. Hampton, Gerald W. Bailey, and Robert S. Gardella, "A loop network for general purpose data communications in a heterogeneous world", *3rd Data Communications Symposium*, ACM and IEEE, St. Petersburg, Florida, November 1973.
Done at NSA, two rings running in opposite directions, empty slot technique. Set switches to make one node generate the clock for all, and introduce a null packet, if needed. Packets may circulate many times if not taken immediately at the destination.

[Hayes, 1973]
J. F. Hayes, "Modeling an experimental computer communications network", *3rd Data Communications Symposium*, ACM and IEEE, St. Petersburg, Florida, November 1973, pp. 4-11.
Models what became Spider; similar to [Hayes, 1974].

[Hayes, 1974]
J. F. Hayes, "Performance models of an experimental computer communications network", *Bell System Technical Journal*, 53:2, February 1974, pp. 225-259.
Models what became Spider: unlike Pierce's earlier work, it is a loop to a central switch. Switch does routing and control of traffic. Switch can buffer blocks, and can centrally tell terminals to shut off, if backlog is growing. All data must first go through the switch, even if it is destined for another terminal on the same loop. Uses 1.544 megabit/sec. line (T1).

[Hayes & Sherman, 1971a]
J. F. Hayes and D. N. Sherman, "Traffic and delay in a circular data network", *2nd Symposium on Problems in the Optimization of Data Communication Systems [2nd Data Communications Symposium]*, ACM and IEEE, Palo Alto, California, October 1971.
Delay estimates for a Pierce loop.

[Hayes & Sherman, 1971b]
J. F. Hayes and D. N. Sherman, "Traffic analysis of a ring switched data transmission system", *Bell System Technical Journal*, 50:9, November 1971, pp. 2947-2978. Reprinted in [Chu, 1976].
Delay estimates for a Pierce loop; analysis and simulation.

[Hayes & Sherman, 1972]
J. F. Hayes and D. N. Sherman, "A study of data multiplexing techniques and delay performance", *Bell System Technical Journal*, 51:9, November 1972, pp. 1983-2011. An "Extended abstract" with the same title appeared in *Proceedings of the National Telecommunications Conference (NTC '72)*, Houston, December 1972, paper 30D.
Analyzes techniques for handling local terminal traffic to one processor/concentrator, using Polling, Aloha Random Access, and Ring; compares resulting roundtrip delay.

[Heart, *et al.*, 1970]
F. E. Heart, R. E. Kahn, S. M. Ornstein, W. R. Crowther, and D. C. Walden, "The Interface Message Processor for the ARPA computer network", *AFIPS Conference Proceedings -- 1970 SJCC*, 36, June 1970, pp. 551-567. Reprinted in [Green & Lucky, 1975; Chu, 1976].
One of the early Arpanet papers.

[Heffron & Snow, 1978]
W. G. Heffron, Jr. and N. E. Snow, "Transaction network, telephones, and terminals: transaction network service", *Bell System Technical Journal*, 57:10, December 1978, pp. 3331-3347.
Message switching system for inquiry/response from a central host; polled control from a local switch.

[Hertzberg, *et al.*, 1979]
R. Y. Hertzberg, J. R. Schultz, J. F. Wanner, "The Promis network", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.
Uses 2-way CATV, with sequential polling from a controller.

[Hewlett-Packard, 1977a]
Hewlett-Packard Corporation, *Distributed Systems Networks*, October 1977.

[Hewlett-Packard, 1977b]
Hewlett-Packard Corporation, *Distributed Systems/1000, Technical Data*, October 1977.

[Hewlett-Packard, 1978a]
Hewlett-Packard Corporation, *Distributed Systems/1000*, March 1978.

[Hewlett-Packard, 1978b]
Hewlett-Packard Corporation, *DS/1000, Network Manager's Manual*, 1978.

[Hippert, 1970a]
R. O. Hippert, "A pulse-code-modulated transmission loop", *International Conference on Communications (ICC '70)*, San Francisco, June 1970, pp. 36-10 - 36-15.
IBM 2790 terminal system.

[Hippert, 1970b]
R. O. Hippert, "IBM 2790 Digital transmission loop", *IBM Journal of Research and Development*, 14:6, November 1970, pp. 662-667.

[Hobgood, 1976]
W. S. Hobgood, "The role of the Network Control Program in Systems Network Architecture", *IBM Systems Journal*, 15:1, 1976, pp. 39-52.

[Hopkins, 1977]
G. T. Hopkins, *A bus communications system*, Mitre Technical Report 3515, Mitre Corporation, Bedford, Mass., November 1977.

[Hopkins, 1979]
G. T. Hopkins, "Multimode communication on the Mitrenet", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.

[Hopper, 1978a]
A. Hopper, "Data ring at Computer Laboratory, University of Cambridge", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, pp. 11-16.

[Hopper, 1978b]
Andrew Hopper, *Local area computer communication network*, Technical Report no. 7 (PhD thesis), University of Cambridge Computer Laboratory, Cambridge, England, April 1978.

[Hopper & Wheeler, 1979]
A. Hopper and D. J. Wheeler, "Maintenance of ring communication systems", *IEEE Trans. on Comm.*, com-27:4, April 1979, pp. 760-761.
Extension of the Cambridge Ring work; have each station recompute parity, report an error to a monitoring station.

[Huen, *et al.*, 1977]
W. Huen, P. Greene, R. Hochsprung, O. El-Dessouki, "A network computer for distributed processing", *15th IEEE Computer Society International Conference (COMPCON Fall '77)*, Washington, September 1977, pp. 326-330.
Ties together a group of LSI/11's, to run a single program. Byte parallel ring.

[Hunt, 1978]
Bruce Hunt, "Ariel", unpublished talk, Stanford University, November 1978.

[IBM, 1975]
IBM, *IBM synchronous data link control, general information*, 2nd edition, May 1975.

[IBM, 1978a]
IBM, *An introduction to the IBM 8100 information system*, publication GA27-2875, 1978. (Second edition, March 1979.)
The 8100 has provision for an SDLC loop-mode link for connecting peripherals. Can have a "directly attached loop" or use a communication line to a "data link attached loop."

[IBM, 1978b]
IBM, *IBM 8100 information system configurator*, publication GA27-2876, October 1978.

[IBM, 1978c]
IBM, *IBM 8100 information system loop installation manual -- physical planning*, publication GA27-2878, October 1978.
Includes photographs and detailed description of equipment used to construct SDLC loop systems for the 8100.

[IEEE, 1975]
IEEE Standard Digital interface for programmable instrumentation, IEEE Standard 488-1975, IEEE, New York, April 1975; revised 1978.

[IFIP, 1979]
IFIP Working Group 6.4 on Local Computer Networks, *Statement of aims and scope*, June 1979.

[Innes & Alty, 1975]
D. R. Innes and J. L. Alty, "An intra university network", *4th Data Communications Symposium*, ACM and IEEE, Quebec City, October 1975, pp. 1-8 - 1-13.
Star configuration: mini-computers attached to a single Support Computer, which in turn interfaces to a large-scale machine. Byte parallel links to the Support Computer, up to about 250 kbps.

[Iwama, *et al.*, 1978]
K. Iwama, Y. Kambayashi, and S. Yajima, "Computer communication interfaces based on two-input/output-pair automata and their implementation in the Labolink network", *Fourth International Conference on Computer Communication (ICCC)*, Kyoto, September 1978.

[Jafari, 1977]
H. Jafari, *A new loop structure for distributed microcomputing systems*, PhD Dissertation, Oregon State University, Corvallis, December 1977, available from University Microfilms.

[Jafari & Lewis, 1977]
H. Jafari and T. Lewis, "A new loop structure for distributed microcomputing systems", *Proceedings of the First Annual Rocky Mountain Symposium on Microcomputers: Systems, Software and Architecture*, 1977, pp. 121-141.

[Jafari, *et al.*, 1978a]
H. Jafari, J. Spragins, and T. Lewis "A new modular loop architecture for distributed computer systems", *Trends and Applications 1978: Distributed Processing*, NBS/IEEE(DC) Symposium, 1978, pp. 72-77.

[Jafari, *et al.*, 1978b]
H. Jafari, T. Lewis, and J. Spragins "A new ring-structured microcomputer network", *Fourth International Conference on Computer Communication (ICCC)*, Kyoto, Japan, September 1978.
Really a loop, with a *loop controller*. Two channels, one for control and one for data; negotiate on control channel to set switches at intermediate nodes on the data ring.

[Jensen, 1975]
E. Douglas Jensen, "A distributed function computer for real-time control", *2nd Annual Symposium on Computer Architecture*, ACM SigArch, January 1975.

[Jensen, 1978]
E. Douglas Jensen, "The Honeywell experimental distributed processor -- an overview", *Computer*, January 1978, pp. 28-38.

[Kaye, 1972]
A. R. Kaye, "Analysis of a distributed control loop for data transmission", *Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 47-58.
Analysis of a Newhall-style, control passing system.

[Kitazawa, 1976]
Shigeyoshi Kitazawa, *Development of an in-house computer network Kuipnet*, Department of Information Science (thesis), Kyoto University, December 1976.
Modelled after the Arpanet, but a simple star with a single IMP.

[Kitazawa & Sakai, 1978]
Shigeyoshi Kitazawa and Toshiyuki Sakai, "Performance evaluation of the Kuipnet computer network", *Computer Communications*, 1:3, June 1978, pp. 149-155.
Provides some real performance measurements for this modest star-shaped packet switching system.

[Kleinrock & Naylor, 1974]
L. Kleinrock and W. E. Naylor, "On measured behavior of the ARPA network", *AFIPS Conference Proceedings -- NCC '74*, 43, pp. 767-780.
Includes lots of Arpanet measurements, as well as a brief discussion of *incestuous* traffic -- traffic between two local hosts connected to the same Imp.

[Konheim, 1972]
A. G. Konheim, "Service epochs in a loop system", *Proceedings of the Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 125-143.
Loop system with a central station and N terminals.

[Konheim, 1976]
A. G. Konheim, "Chaining in a loop system", *IEEE Trans. on Comm.*, com-24:2, February 1976, pp. 203-210.
Loop with central control and chaining, or hub-polling.

[Kropfl, 1972]
W. J. Kropfl, "An experimental data block switching system", *Bell System Technical Journal*, 51:6, July-August 1972, pp. 1147-1165.
Originally written in February 1971; describes an implementation of the Pierce loop augmented with a mechanism for "hog prevention." Used T1 technology for a single loop, with one A box (controller) and 2 B boxes.

[Kuhns & Shoquist, 1979]
Richard C. Kuhns and Marc C. Shoquist, "A serial data bus system for local processing networks", *18th IEEE Computer Society International Conference (COMPCON Spring '79)*, San Francisco, February 1979, pp. 266-271.
10 Mbps Triax cable, separate control and data lines, central control.

[Labonte, 1973]
Robert C. Labonte, "Developing a wired nation -- a general purpose digital communications system for operation on a conventional CATV system", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, San Francisco, February 1973, pp. 85-88.

[Lampson & Simonyi, 1979]
Butler Lampson and Charles Simonyi, personal communication, Xerox Palo Alto Research Center, July 1979
Proposal for a high performance local network, up to 50 Mbps, using an ECL micro-Imp.

[Lancaster & Garodnick, 1973]
Paul Lancaster and Joseph Garodnick, "CATV environment for data communications", *National Telecommunications Conference (NTC '73)*, Atlanta, November 1973, paper 38C.

[Laurer & Skatrud, 1977]
G. J. Laurer and R. O. Skatrud, "Automatic loop reconfigurator", *IBM Technical Disclosure Bulletin*, 19:10, March 1977, pp. 3824-3828.
Scheme to reconfigure a broken loop as two half-duplex, multi-drop lines.

[Lazzeri, *et al.*, 1977]
L. Lazzeri, L. Lenzini, and A. Springer, "Terminal access to host computers through RPCNET", *ACM International Computing Symposium (ICS77)*, Liege, Belgium, April 1977, pp. 335-344.

[Lebetoulle, *et al.*, 1975]
J. Lebetoulle, E. G. Manning, and R. W. Peebles, "A homogeneous computer network -- analysis and simulation", *Computer Networks*, 1977, pp. 225-240. (An earlier report appeared as Computer Communications Networks Group Report E-30, University of Waterloo, Waterloo, Ontario, Canada, January 1975.)
Modeled a very specialized environment: identical hosts connected to a Newhall-Farmer style loop, doing restricted, transaction interactions over a shared data base. Limited protocols. Initially, two PDP-11's as user hosts. Note: "Mininet" is the name of the architecture for handling distributed transaction processing; there have been no reports of actual experience with any local network implementations.

[Lee & Pohm, 1978]
Chong C. Lee and Arthur V. Pohm, "Interface processor for high speed recirculating data network", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, September 1978.
ISUnet, a T1 loop with 32 circulating slots; repeaters powered from the line.

[Le Lann, 1977]
G. Le Lann, "Distributed systems -- towards a formal approach", *Information Processing 77 (Proc. of IFIP '77)*, Toronto, August 1977, pp. 155-160.
See esp. section 4, techniques which might be used to regenerate a lost control token in a token-passing ring.

[Lennon, *et al.*, 1973]
William J. Lennon, Ronald C. Barrett, and John T. Spies, "A mini-computer research network", *7th Annual IEEE Computer Society International Conference (COMPCON 73)*, San Francisco, February 1973, pp. 191-194.

[Lennon, 1974]
William J. Lennon, "A mini-computer network for support of real time research", *ACM 1974 Annual Conf. (ACM '74)*, San Diego, November 1974, pp. 595-604.

[Lennon, 1975]
William J. Lennon, "A user oriented mini-computer network", *11th IEEE Computer Society International Conference (COMPON Fall '75)*, Washington, September 1975, 133-136.
Simple star system, nodes linked to central point; looks like a paper tape device to users' machines.

[Lenzini & Sommi, 1976]
L. Lenzini and G. Sommi, "Architecture and implementation of RPCNET", *Third International Conference on Computer Communication (ICCC)*, Toronto, August 1976, pp. 605-611.

[Lenzini & Sommi, 1977]
L. Lenzini and G. Sommi, "RPCNET, a network among education and research organizations in Italy: characteristics and status", *European Conference on Electrotechnics (Eurocon '77)*, Venezia, May 1977, paper 3.1.3.

[Lewis, 1977]
Fred V. Lewis, "Use of a rotating-master loop network as a high integrity intersystem data link", *Proceedings of the National Electronics Conf*erence, 31, Chicago, October 1977, p. 30.
One-page proposal for a ring using SDLC control frames, with "ring-master" status being passed around the ring.

[Lidinsky, 1976]
Willaim P. Lidinsky, "The Argonne Intra-Laboratory Network", *Proc. of the [1st] Berkeley Workshop on Distributed Data Management and Computer Networks*, Lawrence Berkeley Laboratory, Berkeley, California, May 1976, pp. 263-275.
Scaled down Arpanet, 50 Kbps lines, packet switching through Interface Processing Units (IPUs, like Imps) containing dual microprocessors.

[Lin, 1978]
Kuang-Shin Lin, "Design of a packet-switched micro-subnetwork", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, September 1978, pp. 184-193.
A small network with 4 hosts and 4 "micro-Imps."

[Liu, 1978]
Ming T. Liu, "Distributed Loop Computer Networks", in M. C. Yovits, ed., *Advances in Computers, Volume 17*, Academic Press, 1978, pp. 163-221.

[Liu & Reames, 1975]
Ming T. Liu and Cecil C. Reames, "The design of the Distributed Loop Computer Network", *International Computer Symposium 1975*, Taipei, August 1975, pp. 273-283 (vol. 1).

[Liu & Reames, 1977]
Ming T. Liu and Cecil C. Reames, "Message communication protocol and operating system design for the distributed loop computer network (DLCN)", *4th Annual Symposium on Computer Architecture*, March 1977, pp. 193-200.

[Liu, *et al.*, 1977]
M. T. Liu, G. Babic, and R. Pardo, "Traffic analysis of the distributed loop computer network (DLCN)", *National Telecommunications Conference (NTC '77)*, December 1977, paper 31:5.

[Loomis, 1973(?)]
D. C. Loomis, *Ring communication protocols*, Technical Report #26, Dept. of Information and Computer Science, UC Irvine, undated (but listed elsewhere as January 1973).
Describes use of a control token, passed around to control the ring.

[Loughry & Allen, 1978]
Donald C. Loughry and Mark S. Allen, "IEEE Standard 488 and Microprocessor Synergism", *Proc. of the IEEE*, 66:2, February 1978, pp. 162-172.

[Loveland, 1979]
Richard A. Loveland, "Putting Decnet into perspective", *Datamation*, March 1979, pp. 109-114.
Recites some of the Decnet history, including lack of routing in Phase I and Phase II.

[Loveland & Stein, 1979]
Richard A. Loveland and Charles W. Stein, "How Decnet's communications software works", *Data Communications*, January 1979.
Lots of prose, not much hard information.

[Lyle & Farber, 1976]
Michael R. Lyle and David J. Farber, "Transmission systems tradeoffs in ring-structured digital systems", *Proceedings of the [1st] Berkeley Workshop on Distributed Data Management and Computer Networks*, Lawrence Berkeley Laboratory, Berkeley, May 1976.
Early discussion of design considerations for the Local Network Interface (LNI), including a single chip, LSI version.

[Majithia & Dube, 1976]
J. C. Majithia and J. D. Dube, "Results for a loop network with a hybrid message-handling protocol", *Proc. IEE*, 123:8, August 1976, pp. 775-776.
Short note describing simulation of a hypothetical full-duplex ring, with different priority classes.

[Majithia & Dube, 1977]
J. C. Majithia and J. D. Dube, "Analysis and simulation of message-switched loop data networks", *Proc. IEE*, 124:3, March 1977, pp. 193-197.
Analysis and simulation of a full-duplex ring.

[Manning, 1972]
Eric G. Manning, "Newhall loops and programmable TDM -- two facets of Canadian research in computer communications", *First Int. Conference on Computer Communication (ICCC)*, Washington, October 1972, pp. 338-342.
Proposal to use a Newhall loop to connect TIP-like nodes. Brief description of a 2-node Newhall loop implemented at the University of Toronto (to Waterloo): METANET. Notes that passing of control from one node to the next takes 2 msec.

[McEnroe, *et al.*, 1975]
P. V. McEnroe, H. T. Huth, E. A. Moore, and W. W. Morris, "Overview of the supermarket system and the retail store system", *IBM Systems Journal.*, 14:1, 1975.
Loop system for terminals.

[McFadyen, 1976]
J. H. McFadyen, "Systems Network Architecture: An overview", *IBM Systems Journal*, 15:1, 1976, pp. 4-23.

[McKenzie, 1979]
Alex McKenzie, personal communication, BBN, July 1979.
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[McQuillan, 1978]
John M. McQuillan, *Understanding the new local network technologies*, BBN Report 3927, September 1978.

[McQuillan & Walden, 1977]
J. M. McQuillan and D. C. Walden, "The ARPA Network design decisions", *Computer Networks*, 1:5, August 1977, pp. 243-289.
This is an expanded version of [Crowther, *et al.*, 1975]; it is one of the best all-around papers on the Arpanet, exploring many aspects of the design. Includes a short discussion of problems associated with network front end machines (esp. sections 3.3.2 and 5.2.2).

[Meisner, *et al.*, 1977a]
Norman B. Meisner, Joshua L. Segal, and Malcolm Y. Tanigawa, "Dual-mode slotted TDMA digital bus", *5th Data Communications Symposium*, Snowbird, Utah, September 1977, 5-14 - 5-18.

[Meisner, *et al.*, 1977b]
Norman B. Meisner, David G. Willard, and Gregory T. Hopkins, "Time division digital bus techniques implemented on coaxial cable", *Computer Networking Symposium*, IEEE Computer Society and NBS, Gaithersburg, Maryland, December 1977, pp. 112-117.

[Mendicino, 1970]
Samuel F. Mendicino, "Octopus: The Lawrence Radiation Laboratory Network", in Rustin, ed., *Computer Networks (Courant Computer Science Symposium 3, November-December 1970)*, Prentice-Hall, New York, 1972, pp. 95-110.

[Mendicino & Sutherland, 1973]
Sam F. Mendicino and George G. Sutherland, "Performance measurements in LLL Octopus computer network", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, San Francisco, February 1973, pp. 109-112.

[Metcalfe & Boggs, 1976]
Robert M. Metcalfe and David R. Boggs, "Ethernet: Distributed packet switching for local computer networks", *CACM*, 19:7, July 1976, pp. 395-404. (Earlier version issued as Xerox Parc Computer Science Report CSL-75-7.) Reprinted in Abrams, *et al.*, eds., *Computer Networks: A Tutorial (Revised 1978)*, IEEE, 1978.

[Metcalfe, *et al.*, 1977]
Robert M. Metcalfe, David R. Boggs, Charles P. Thacker, and Butler W. Lampson, *Multipoint data communication system with collision detection*, US Patent no. 4,063,220, December 1977.

[Miller, 1978]
Walt Miller, "Interconnecting local networks", *Third Conference on Local Computer Networks*, U. of Minn., Minneapolis, October 1978.
NSC/BNR project, interconnect Hyperchannel systems via T3 microwave.

[Mockapetris, 1978]
Paul V. Mockapetris, *Design considerations for the ARPA LNI name table*, Technical Report 92, Department of Information and Computer Science, UC Irvine, Revised May 1978.

[Mockapetris & Farber, 1977]
Paul V. Mockapetris and David J. Farber, "Experience with the Distributed Computer System (DCS)", Technical Report 116, Department of Information and Computer Science, UC Irvine, 1977.

[Mockapetris, *et al.*, 1977]
Paul V. Mockapetris, Michael R. Lyle, and David J. Farber, "On the design of local network interfaces", *Information Processing '77 (Proc. of IFIP '77)*, Toronto, August 1977, pp. 427-430.

[Moran, 1975]
D. M. Moran, "Memory multiplexer data link, an intermodular network", *IEEE Electronics and Aerospace Systems Convention (Eascon '75)*, Washinton, September 1975, paper 167.
MMDL connects processors and memories in a multi-processor; uses a form of "distributed polling" around the ring.

[Moran & Starkson, 1975]
D. M. Moran and R. O. Starkson, "A hybrid communications switching system", *Electronic Components Conference*, 1975, pp. 30-36.
Describes some components later used in a centralized circuit switch, [Sperry-Univac, 1977].

[Morling, *et al.*, 1978]
R. C. S. Morling, G. Neri, G. D. Cain, E. Faldella, T. Salmon, and D. J. Stedham, "The Mininet inter-node control protocol", *Symposium on Computer Network Protocols*, Liege, 1978, paper B4.

[Moulton & Sander, 1977]
P. D. Moulton and R. C. Sander, "Another look at SNA", *Datamation*, March 1977, pp. 74-82.

[Naylor, 1978]
J. C. Naylor, Jr., "Data bus design concepts, issues and prospects", *IEEE Electronics and Aerospace Systems Convention (Eascon '78)*, Arlington, Virginia, September 1978, pp. 34-39.

[NBS, 1977]
"NBS experimenting with 'Ethernet' packet switching", *Data Communications*, February 1977, p. 20.

[NBS, 1978a]
National Bureau of Standards, *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978.

[NBS, 1978b]
"NBS to construct local packet network", *Data Communications*, November 1978, p. 22.

[Needham, 1979]
Roger M. Needham, "Systems aspects of the Cambridge Ring", *7th Symposium on Operating System Principles*, Pacific Grove, December 1979.

[Nelson & Gordon, 1978]
David L. Nelson and Robert L. Gordon, "Computer cells -- a network architecture for data flow computing", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, September 1978, pp. 296-301.
This system includes a communications ring connecting Prime P400 computers, running at 10 Mbps.

[Nessett, 1978]
Dan Nessett, "Protocols for buffer space allocation in CSMA broadcast networks with intelligent interfaces", *Third Conference on Local Computer Networking*, U. of Minn., Minneapolis, October 1978.
Some bus networks (such as the Hyperchannel) provide packet buffers as part of the interface; discusses ways to manage buffer allocation in these units.

[Newhall & Venetsanopoulos, 1971]
E. E. Newhall, and A. N. Venetsanopoulos, "Computer communications -- representative systems", *Information Processing 71 (Proc. of IFIP 71)*, Ljubljana, August 1971, pp. 545-552.
Summaries of the Arpanet, the Collins C-System TDM loop, and the Farmer/Newhall loop.

[Noguchi, *et al.*, 1974]
S. Noguchi, N. Shiratori, K. Teruya, and J. Oizumi, "On characteristics of loop computer network", *Computer Nets: A Supplement to the Proceedings of the 7th Hawaii International Conference on System Sciences*, January 1974, pp. 24-26.
A brief consideration of a ring structure where collisions may take place, Aloha-style.

[NSC, 1976]
Network Systems Corp., (untitled paper), *Conference on Experiments in New Approaches to Local Computer Networking*, U. of Minn., St. Paul, September 1976.

[Oh & Liu, 1977]
Y. Oh and M. T. Liu, "Interface design for distributed control loop networks", *National Telecommunications Conference (NTC '77)*, December 1977, paper 31:4.
Proposed structure for a DCLN interface; lots of hardware, introduces delay at each node.

[Ohnsorge & Schenkel, 1974]
H. Ohnsorge and K. D. Schenkel, "An integrated communication system with fully decentralized switching", *IEEE Trans. on Comm.*, com-22:9, September 1974, pp. 1292-1296.
Proposal for a bus system for voice and data, using distinct transmit and receive tree structures. Stations individually set up TDM channels to carry voice or data; the system does depend upon a central clock.

[Okuda, *et al.*, 1978]
N. Okuda, T. Kunikyo, and T. Kaji, "Ring Centry Bus -- an experimental high speed channel for computer communications", *Fourth International Conference on Computer Communication (ICCC)*, Kyoto, September 1978.
Control station generates timing pulses of the ring, and clears any packet which circulates 256 times (!); both a data and control loop, using fiber optics. 100 Mbps, TDM, 8 channels (packets) circulating within exactly 1 frame; if channel is empty, can grab it, and reuse it repeatedly.

[Onoe, *et al.*, 1978]
Morio Onoe, Yasuhiko Yasuda, and Mitsuru Ishizuka, "A random access packet communication system with priority function -- Priority Ethernet", *National Convention of the Information Processing Society of Japan*, August 1978, paper no. 3A-1.

[Orthner & McKeown, 1975]
F. Helmuth Orthner and David M. McKeown, Jr., "A packet switching network for minicomputers", *11th IEEE Computer Society International Conference (COMPCON Fall '75)*, Washington, September 1975.
Parallel bus with an arbiter; micro-Imps between the hosts and the bus, to minimize host changes. Sort of like a super Unibus, can read and write to other units.

[Owens, 1973]
Jerry L. Owens, "A user's view of the Lawrence Livermore Laboratory's computer networks", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, San Francisco, February 1973, pp. 75-78.

[Pardo, *et al.*, 1977]
Roberto Pardo, Ming T. Liu, and Gojko A. Babic, "Distributed services in computer networks: designing the distributed loop date [sic] base system", *Computer Networking Symposium*, IEEE Computer Society and NBS, Gaithersburg, December 1977, pp. 60-65.

[Passafiume & Wecker, 1977]
Joseph J. Passafiume and Stuart Wecker, "Distributed file access in Decnet", *Proceedings of the 2nd Berkeley Workshop on Distributed Data Management and Computer Networks*, May 1977, pp. 114-129.

[Patton & Franck, 1976]
Peter C. Patton and Abe Franck, eds., *Conference on Experiments in New Approaches to Local Computer Networking*, U. of Minn., St. Paul, September 1976.
Mainly focused on techniques related to "large scale" hosts. This first conference was co-sponsored with NSC, and many of the papers are from potential users of the Hyperchannel. Only selected papers have been included in this bibliography.

[Patton & Franck, 1977]
Peter C. Patton and Abe Franck, eds., *Conference on "A Second Look at Local Computer Networking"*, U. of Minn., Minneapolis, October 1977.

[Patton & Franck, 1978]
Peter C. Patton and Abe Franck, eds., *Third Conference on Local Computer Networking*, U. of Minn., Minneapolis, October 1978.

[Pehrson, 1973]
David L. Pehrson, "Interfacing and data concentration", in Abramson and Kuo, eds., *Computer-Communication Networks*, Prentice-Hall, 1973.
Esp. section 6.8, an extended example treating the Octopus network.

[Pierce, 1972a]
J. R. Pierce, "How far can data loops go?", *IEEE Trans. on Comm.*, com-20, June 1972, pp. 527-530. Reprinted in [Green & Lucky, 1975; Chu, 1976].

[Pierce, 1972b]
J. R. Pierce, "Network for block switching of data", *Bell System Technical Journal*, 51:6, July-August 1972, pp. 1133-1145.
Originally written in 1970. Terminals connected to loops; loops may then be interconnected. Uses regular digital lines (T1), without special modulation (unlike Newhall). Each loop requires a special "A" box, for loop timing, etc. "The data network has been deliberately kept very simple. It is multiprocessing with a vengeance."

[Pierce, *et al.*, 1971]
J. R. Pierce, C. H. Coker, and W. J. Kropfl, "An experiment in addressed block data transmission around a loop", *IEEE International Convention Record*, March 1971, pp. 222-223.
Pierce's first paper on the subject. Describes possible hierarchy of loops, connecting the entire country.

[Pogran & Reed, 1978]
K. T. Pogran and D. P. Reed, "The MIT Laboratory for Computer Science Network", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, pp. 20-22.

[Potvin, *et al.*, 1971]
J. N. Potvin, P. Chenevert, K. C. Smith and P. Boulton, "Star-Ring: a computer intercommunication and I/O system", *Information Processing 71 (Proc. of IFIP 71)*, Ljubljana, August 1971.
Central, high-speed parallel ring (option for buses radiating out from a node); daisy chain of control around the ring, address the destination explicitly on 1 of n address lines.

[Raimondi, *et al.*, 1976]
D. L. Raimondi, H. M. Gladney, G. Hochweller, R. W. Martin, and L. L. Spencer, "LABS/7 -- a distributed real-time operating system", *IBM Systems Journal*, 15:1, 1976, pp. 81-101.
Originally a laboratory automation system, connecting a group of System/7's in a star to a 360 or 370. Central host used for program development, data analysis, etc.

[Rawson, 1979a]
E. G. Rawson, "Optical fibers for local computer networks", *Digest of Topical Meeting on Optical Fiber Communication*, Washington, March 1979, pp. 60-64.

[Rawson, 1979b]
E. G. Rawson, "Application of fiber optics to local networks", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.

[Rawson & Metcalfe, 1978]
Eric Rawson and Robert M. Metcalfe, "Fibernet: multimode optical fibers for local computer networks", *IEEE Trans. on Comm.*, 26:7, July 1978, pp. 983-990.
Compares alternative architectures for local nets using fiber optics; reports on Fibernet, a transmissive star coupler formed using a mixing rod. Good collection of references on work in this area.

[Rawson & Nafarrate, 1978]
Eric Rawson and Antonio B. Nafarrate, "Star couplers using fused biconically tapered multimode fibres", *Electronic Letters*, 14:9, April 27, 1978, pp. 274-275.
Reports on 19-channel transmissive star couplers (a la Fibernet), but now formed with thermal fusing.

[Rawson, *et al.*, 1978]
E. G. Rawson, R. M. Metcalfe, R. E. Norton, A. B. Nafarrate, and D. Cronshaw, "Fibernet: A fiber optic computer network experiment", *Proceedings of the Fourth European Conference on Optical Communication (4th ECOC)*, Genova, Italy, September 1978.

[Reames & Liu, 1975]
Cecil C. Reames and Ming T. Liu, "A loop network for simultaneous transmission of variable-length messages", *2nd Annual Symposium on Computer Architecture*, ACM SigArch, January 1975, pp. 7-12.

[Reames & Liu, 1976]
Cecil C. Reames and Ming T. Liu, "Design and simulation of the Distributed Loop Computer Network (DLCN)", *3rd Annual Symposium on Computer Architecture*, ACM SigArch, January 1976, 124-129.

[Richardson & Yu, 1979]
R. G. Richardson and L. W. Yu, "The effect of protocol on the response time of loop structures for data communications", *Computer Networks*, 3, 1979, pp. 57-66.
Models inquiry/response traffic for N terminals and 1 host.

[Robilland, 1974]
P. N. Robilland, "An analysis of a loop switching system with multirank buffers based on the Markov process", *IEEE Trans. on Comm.*, 22:11, November 1974, pp. 1772-1778.
Considers a Farmer/Newhall loop: buffered I/O terminals, a loop, and a loop supervisor to provide clock and failure control.

[Rodgers, 1977]
John C. Rodgers, "Computer networking with a data bus", *16th Annual Techincal Symposium*, ACM(DC) and NBS, Gaithersburg, Maryland, June 1977, pp. 45-50.
Plan to use an NSC Hyperchannel; run the 4 trunks at different rates.

[Rosen & Steele, 1973]
Saul Rosen and John M. Steele, "A local computer network", *7th Annual IEEE Computer Society International Conference (COMPCON '73)*, San Francisco, February 1973, pp. 129-132.
Star configuration, terminals and small hosts access a CDC 6500, 9.6 Kbps lines.

[Rowe, 1975]
L. A. Rowe, *The Distributed Computing Operating System*, DCS Technical Report #66, June 1975.
A nice overview of the system, and discussion of software. Includes a tiny bit of performance information.

[Rowe & Birman, 1979]
Lawrence A. Rowe and Kenneth P. Birman, "Network support for a distributed data base system", *Proceedings of the Fourth Berkeley Conference on Distributed Data Management and Computer Networks*, San Francisco, August 1979, pp. 337-351.
The "Cocanet" is a local network being built to support research on distributed data bases; the network is being built with the "LNI" ring interfaced originally developed at UC Irvine [Mockapetris, *et al.*, 1977].

[Rowe, *et al.*, 1973]
Lawrence A. Rowe, Marsha D. Hopwood, David J. Farber, "Software methods for achieving fail-soft behavior in the Distributed Computing System", *IEEE Symposium on Computer Software Reliability*, April 1973.

[Saito, 1978]
T. Saito, "A subscriber carrier system based upon frame addressing system", *IEEE Trans. on Comm.*, com-26:8, August 1978, pp. 1287-1295.
Loop system for carrying voice, dynamically allocates portions within a frame.

[Sakai, *et al.*, 1977]
T. Sakai, T. Hayashi, S. Kitazawa, K. Tabata, and T. Kadade, "Inhouse computer network Kuipnet", *Information Processing 77 (Proc. IFIP 77)*, Toronto, August 1977, pp. 161-166.
Star configuration with point-to-point lines (~1 Mbps) to a simple switching machine.

[Scantlebury, *et al.*, 1968]
R. A. Scantlebury, P. T. Wilkinson and K. A. Bartlett, "The design of a message switching centre for a digital communication network", *IFIP Congress 68*, Edinburgh, August 1968.

[Scantlebury, 1969]
R. A. Scantlebury, "A model for the local area of a data communication network -- objectives and hardware organization", *Proceedings of the ACM Symposium on Problems in the Optimization of Data Communication Systems [1st Data Communication Symposium]*, ACM SigComm, Pine Mountain, Georgia, October 1969, pp. 183-204.
Local system for NPL, mainly for terminals connected through multiplexers to a single central switch.

[Scantlebury & Wilkinson, 1971]
R. A. Scantlebury and P. T. Wilkinson, "The design of a switching system to allow remote access to computer services by other computers and terminal devices", *2nd Symposium on Problems in the Optimization of Data Communication Systems [2nd Data Communication Symposium]*, ACM SigComm and IEEE, Palo Alto, California, October 1971. Reprinted in [Chu, 1976].

[Scantlebury & Wilkinson, 1974]
R. A. Scantlebury and P. T. Wilkinson, "The National Physical Laboratory data communication network", *Second International Conference on Computer Communication (ICCC '74)*, Stockholm, August 1974, pp. 223-228.
Describes use of the NPL network, supporting about 75 terminals and 12 hosts -- connected through a single packet switch.

[Schenkel, 1974]
K. D. Schenkel, "An integrated 300 mbit/s time division multiplexed communication system with decentralized switches", *International Zurich Seminar on Digital Comm*unication, March 1974, paper D3.
Bus structure with no central control; two parallel send and receive trees. Proposal to use a branching tree utilizing fiber optics; actual system had only 1 branch, 3 hosts, used coaxial cable.

[Schwartz, 1977]
Mischa Schwartz, *Computer-communication network design and analysis*, Prentice-Hall, 1977.
Esp. chapter 12, "Polling in networks" and chapter 13, "Random access techniques."

[Sharma, *et al.*, 1974]
R. L. Sharma, J. C. Shah, M. T. El-Bardai, and K. K. Sharma. "C-system: multiprocessor network architecture", *Information Processing 74 (Proc. of IFIP '74)*, Stockholm, August 1974.
Uses a backbone TDM loop to connect major peripherals; a slower TDM loop to connect terminals.

[Shatzer, 1978a]
Robert R. Shatzer, "Distributed Systems/1000", *Hewlett-Packard Journal*, March 1978, pp. 15-20.
Point to point lines, store-and-forward processing through the host, static routing tables (can be reset by hand, if there is a failure).

[Shatzer, 1978b]
Robert R. Shatzer, "A minicomputer-based resource sharing datagram network", *Trends and Applications 1978: Distributed Processing*, IEEE and NBS Symposium, May 1978.
A nicely written paper, describing a full architecture from a datagram network up to user programs. Unfortunately,

the "store-and-forward via host" technique introduces significant delays.

[Shatzer, *et al.*, 1979]
R. R. Shatzer, L. C. Hartge, A. P. Russon, and J. D. Chisholm, "HP's network concept stresses resource sharing and flexibility", *Data Communications*, August 1979, pp. 73-82.
Further discussion of HP's DSN architecture, and examples of the store-and-forward implementation in DS/1000.

[Sherman & Gable, 1977]
R. H. Sherman and M. Gable, "Microprocessor based networks applied to manufacturing control systems", *Proceedings of the National Electronics Conf*erence, 31, Chicago, October 1977, pp. 27-28.
Brief note on a manufacturing control application, used as an early test of an Ethernet-like system.

[Sherman, *et al.*, 1978a]
R. H. Sherman, M. Gable, and G. McClure, "Current summary of Ford activities in local networking", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, pp. 22-23.

[Sherman, *et al.*, 1978b]
R. H. Sherman, M. Gable, and G. McClure, "Concepts, strategies for local data network architectures", *Data Communications*, July 1978.

[Shoch, 1979]
John F. Shoch, *Design and performance of local computer networks*, University Microfilms, August 1979. A revised version of this work is to appear in late 1979.
Includes a general discussion and taxonomy of local networks, and detailed performance studies of the Ethernet system.

[Shoch & Hupp, 1979]
John F. Shoch and Jon A. Hupp, "Performance of an Ethernet local network -- a preliminary report", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.

[Signetics, 1978]
Signetics Corp., *Signetics multi-protocol communications circuit (MPCC/SDLC) 2652*, December 1978.
A chip to do SDLC/HDLC/ADCCP, including loop mode.

[Skatrud & Metz, 1976]
R. O. Skatrud and W. C. Metz, "Loop communications within supermarket store systems", *International Conference on Communications (ICC '76)*, Philadelphia, June 1976, pp. 30-6 - 30-11.

[Sloan, 1976]
Lansing J. Sloan, "A new design for interfacing computers to the Octopus network", *Conference on Experiments in New Approaches to Local Computer Networking*, U. of Minn., St. Paul, September 1976.

[Smith, 1975]
E. K. Smith, "Pilot two-way CATV systems", *IEEE Trans. on Comm.*, com-23:1, January 1975, pp. 111-120.
Reviews several proposals for two-way cable systems, and describes the Mitrix data communications system done at Mitre.

[Sperry-Univac, 1977]
Sperry-Univac, *AN/USQ-67 converter-switching system, signal data*, Sperry-Univac Defense Systems, 1977.
640x640 centralized switch, for inter-connecting peripherals, hosts, etc. Reports reduction of cable weight from 121 tons to 2.5 tons.

[Sperry-Univac, 1978(?)]
Sperry-Univac, *AN/UYC 501(V) -- Shinpads system data bus* (product brochure), Sperry-Univac, undated (probably 1978).
Cable bus for shipboard use, with a central controller.

[Spragins, 1971]
J. D. Spragins, "Analysis of loop transmission systems", *Second Symposium on Problems in the Optimization of Data Communication Systems [2nd Data Communication Symposium]*, Palo Alto, October 1971, pp. 175-182.
Loop configurations: one CPU with multiple terminals, using centralized control.

[Spragins, 1972a]
J. D. Spragins, "Loops used for data collection", *Symposium on Computer-Communications Networks and Teletraffic, (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 59-76.
Model for only in-bound traffic on a loop, from terminals to a central controller.

[Spragins, 1972b]
J. D. Spragins, "Loops transmission systems -- mean value analysis", *IEEE Trans. on Comm.*, com-20:3, June 1972, pp. 592-602.
Loops with central control and fixed slots.

[Springer, 1978]
Joseph F. Springer, "The distributed data network, its architecture and operation", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, DC, September 1978, pp. 221-228.
A space division switch, "fast circuit switching."

[Springer, *et al.*, 1978]
Allen Springer, Livio Lazzeri, and Luciano Lenzini, "The implementation of RPCNET on a minicomputer", *Computer Comm. Review (ACM SigComm)*, 8:1, January 1978, pp. 4-14.
Implementation in the System/7; S/F via host, dynamic update of routing tables in case of line or host failure. Not much of an end-to-end protocol, however (looks like there will be permanent loss of a packet if it is stuck in a host which crashes).

[Steward, 1970]
E. H. Steward, "A loop transmission system", *International Conference on Communications (ICC '70)*, San Francisco, June 1970, pp. 36-1 - 36-9.

[Switzer, 1972]
I. Switzer, "The cable television system as a computer-communications network", *Proc. of the Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972. Reprinted in [Green & Lucky, 1975].
Background on cable TV, possible ways to carry data.

[Szurkowski, 1978]
Edward Szurkowski, "A high bandwidth local computer network", *17th IEEE Computer Society International Conference (COMPCON Fall '78)*, Washington, September 1978, pp. 98-103.
A central PDP-11/70 with a string of micro-processors for data acquisition; a 'super Unibus' with a single bus controller.

[Teichholtz, 1975]
N. A. Teichholtz, "Digital network architecture", *European Computer Conference on Communication Networks (Online)*, London, September 1975, pp. 13-24.
A very early discussion of the broad outlines of DEC's DNA: DDCMP, NSP, DAP; little hard information.

[Thacker, *et al.*, 1979]
C. P. Thacker, E. M. McCreight, B. W. Lampson, R. F. Sproull, and D. R. Boggs, "Alto: A personal computer", to appear in Siewiorek, Bell, and Newell, *Computer Structures: Readings and Examples, second edition*, 1979.
Describes the Alto computer, including its Ethernet interface (section 5).

[Thornton, 1979]
James E. Thornton, "Overview of Hyperchannel", *18th IEEE Computer Society International Conference (COMPCON Spring '79)*, San Francisco, February 1979, pp. 262-265.
A good clear discussion of the Hyperchannel.

[Thornton, *et al.*, 1975]
James E. Thornton, Gary S. Christensen, and Peter D. Jones, "A new approach to network storage management", *Computer Design*, November 1975, pp. 81-85.

[Three Rivers, 1979(?)]
Three Rivers Computer Corp., *PERQ, A landmark computer system*, undated product brochure (probably 1979).
Single user machines, tied together with a 10 Mbps cable system.

[Thurber & Freeman, 1979a]
Kenneth J. Thurber and Harvey A. Freeman, "Local computer network architectures", *18th IEEE Computer Society International Conference (COMPCON Spring '79)*, San Francisco, February-March 1979, pp. 258-261.

[Thurber & Freeman, 1979b]
Kenneth J. Thurber and Harvey A. Freeman, "A bibliography of local computer network architectures", *Computer Architecture News (ACM SigArch)*, 7:5, February 1979. Also published in *Computer Communication Review (ACM SigComm)*, 9:2, April 1979.
Revised version of their earlier article, [Thurber & Freeman, 1979a].

[Tobagi & Hunt, 1979]
F. A. Tobagi and V. B. Hunt, "Performance analysis of carrier sense multiple access with collision detection", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979. Also issued as Technical Report 173, Computer Systems Laboratory, Stanford University, June 1979.

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M. Tokoro and K. Tamaru, "Acknowledging Ethernet", *15th IEEE Computer Society International Conference (COMPCON Fall '77)*, Washington, September 1977, pp. 320-325.

[Tsuchiya, *et al.*, 1974]
M. Tsuchiya, S. S. Yau, and M. J. Gonzalez, "Use of a computer network as peripheral devices", *8th IEEE Computer Society International Conference (COMPCON '74)*, San Francisco, February 1974, pp. 117-119.
Simple star configuration.

[Van den Bos, 1977]
J. Van den Bos, "A design of a communication supervisor for a local network employing monitors", *International Computing Symposium*, ACM, Liege, Belgium, April 1977, pp. 319-323.
A simple star system, giving multiple PDP-11's access to a central 370.

[Venetsanopoulos & Newhall, 1970]
A. N. Venetsanopoulos and E. E. Newhall, "Traffic considerations in an experimental distributed switching system", *Canadian Symposium on Communications*, IEEE, November 1970, p. 37.
Abstract only, no paper.

[Wanner, 1978]
James F. Wanner, "Wideband communication system improves response time", *Computer Design*, December 1978, pp. 85-92.
CATV bus, uses central controller with polling of other terminals.

[Watson, 1978]
Richard W. Watson, "The LLL Octopus network: some lessons and future directions", *3rd USA-Japan Computer Conference*, San Francisco, October 1978, pp. 12-21.
A good review of the development of the Octopus system, and some of the problems encountered.

[Wecker, 1974]
S. Wecker, "Dialog: Advanced link control runs full and half duplex on various types of nets", *Data Communications*, September/October 1974, pp. 36-46.
Describes DDCMP, Digital's line control procedure.

[Wecker, 1975]
S. Wecker, "Interchange: Packet switching with assorted computers in a private network", *Data Communications*, March/April 1975, pp. 56-63.
Describes DDCMP, Digital's line control procedure.

[Wecker, 1976a]
Stuart Wecker, "The design of DECNET -- a general purpose network base", *IEEE Electro '76*, Boston, May 1976.

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Stuart Wecker, "DECNET: a building block approach to network design", *National Telecommunications Conference (NTC '76)*, Dallas, November 1976, paper 7.5.

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[Weller, 1971]
David R. Weller, "A loop communication system for I/O to a small multi-user computer", *5th Annual IEEE Computer Society International Conference*, Boston, September 1971, p. 77-78.
At Bell Labs, loop for I/O to a small host, fixed size 35 bits/frame.

[West, 1972]
L. P. West, "Loop-transmission control structures", *IEEE Trans. on Comm.*, com-20, June 1972, pp. 531-539. Reprinted in [Green & Lucky, 1975].

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Anthony R. West, *A broadcast packet-switched computer communication network: design progress report*, TR 121, Computer System Laboratory, Queen Mary College, London, February 1977.

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Anthony R. West, "Local area networks at Queen Mary College", *Local Area Networking -- Report of a Workshop Held at the National Bureau of Standards, Aug. 22-23, 1977*, NBS Special Publication 500-31, 1978, pp. 23-26.

[West & Davison, 1978]
Anthony West and Allan Davison, *CNET -- A cheap network for distributed computing*, TR 120, Computer System Laboratory, Queen Mary College, March 1978.

[White & Maxemchuk, 1974]
H. E. White and N. F. Maxemchuk, "An experimental TDM data loop exchange", *International Conference on Communications (ICC '74)*, Minneapolis, June 1974, paper 7A.
TDM loop, fixed channels up to 9600 bps, run by a loop clock. Several loops, connected through a switch.

[Wilkes, 1975]
M. V. Wilkes, "Communication using a digital ring", *PACNET Conference*, Sendai, Japan, August 1975. (See also [Wilkes & Wheeler, 1976].)

[Wilkes & Wheeler, 1976]
M. V. Wilkes and D. J., Wheeler, "Design of a digital ring -- Addendum to a a paper presented to the PACNET Conference held in Sendai Japan, in August 1975", December 1976.

[Wilkes & Wheeler, 1979]
M. V. Wilkes and D. J. Wheeler, "The Cambridge digital communication ring", *Local Area Communications Network Symposium*, Mitre and NBS, Boston, May 1979.

[Wilkinson, 1969]
P. T. Wilkinson, "A model for the local area of a data communication network -- software organization", *Proceedings of the ACM Symposium on Problems in the Optimization of Data Communication Systems [1st Data Communication Symposium]*, ACM SigComm, Pine Mountain, Georgia, October 1969, pp. 155-181.
NPL system, basically terminals connected to a star.

[Wilkinson & Scantlebury, 1968]
P. T. Wilkinson and R. A. Scantlebury, "The control functions in a local data network", *IFIP Congress 68*, Edinburgh, August 1968.
Describes the single Interface Computer (IC) in each local area, connected to the S/F backbone.

[Will, 1970]
Craig Will, "The data ring: a communication facility for the DCS", *Appendix 2, Supplement to proposal for research submitted to the National Science Foundation on Distributed Computing System*, University of California, Irvine, October 1970.
Very early material; includes a comparison of control passing vs. empty slot.

[Willard, 1973]
David G. Willard, "MITRIX: a sophisticated digital cable communications system", *National Telecommunications Conference (NTC '73)*, Atlanta, November 1973, paper 38E.

[Willard, 1974]
David G. Willard, "A time division multiple access system for digital communication", *Computer Design*, June 1974, pp. 79-83.

[Wong, *et al.*, 1978]
J. W. Wong, J. A. Field, and S. N. Kalra, "Feasibility of a loop system for local data concentration", *International Conference on Communications (ICC '78)*, Toronto, June 1978.
Restricted model of a low-speed loop used to connect terminals to a concentrator, for access to a host. Reliability estimates for 3 different schemes to bypass broken components, and some simple discrete simulations.

[Wu & Chen, 1975]
R. M. Wu and Y. Chen, "Analysis of a loop transmission system with round-robin scheduling of services", *IBM Journal of Research and Development*, September 1975, pp. 486-493.

[Yajima, *et al.*, 1977a]
Shuzo Yajima, Yahiko Kambayashi, Susumu Yoshida, and Kazuo Iwama, "Optically linked laboratory computer network Labolink", *Proceedings of the 10th Hawaii International Conference on System Sciences*, Honolulu, January 1977, pp. 1-4.
Simple star topology, but uses fiber optic links.

[Yajima, *et al.*, 1977b]
S. Yajima, Y. Kambayashi, S. Yoshida, and K. Iwama, "Labolink: an optically linked laboratory computer network", *Computer*, IEEE Computer Society, November 1977, pp. 52-59.
Simple star topology, but uses fiber optic links.

[Yao, 1978]
A. C. Yao, "On the loop switching addressing problem", *SIAM Journal of Computing*, 7:4, November 1978, pp. 515-523.

[Yasaki, 1978]
E. K. Yasaki, "IBM's offering of SNA: some find it a success", *Datamation*, February 1978, pp. 176-177.
Reports on results of a survey of 15 large SNA installations.

[Yatsuboshi, *et al.*, 1978]
R. Yatsuboshi, T. Tsuda, K. Yamaguchi and Y. Inoue, "An in-house network configuration for distributed intelligence", *Fourth International Conference on Computer Communication (ICCC '78)*, Kyoto, September 1978.
2-level hierarchy of loops: 48 Kbps HDLC loops for terminals, 6.3 Mbps ring as a Data Highway, or backbone.

[Yu & Majithia, 1979]
L. W. Yu and J. C. Majithia, "An adaptive loop-type data network", *Computer Networks*, 3:2, April 1979, pp. 95-104.
Proposal for a full-duplex empty slot (Pierce) ring, with two slot sizes and an "adaptive priority scheme." Small packets for control; used to set priorities from a loop supervisor.

[Yuen, *et al.*, 1972]
M. L. T. Yuen, B. A. Black, E. E. Newhall, and A. N. Venetsanopoulos, "Traffic flow in a distributed loop switching system", *Symposium on Computer-Communications Networks and Teletraffic (Polytechnic Institute of Brooklyn, April 1972)*, Polytechnic Press, 1972, pp. 29-46. Reprinted in [Chu, 1976].
Simulation of the ring, at 40.8 kbits/sec and 3.2 megabits/sec. Each unit on the loop is a Teletype; requires an 8-bit buffer in each.

[Zafiropulo, 1973]
P. Zafiropulo. "Reliability optimization in multiloop communication networks", *IEEE Trans. on Comm*, com-21:8, August 1973, pp. 898-907.
Analytical derivation for average availability in a hierarchy of loops. Shows that even with *very* large numbers of terminals, more than 3 stages adds little to the reliability.

[Zafiropulo, 1974a]
P. Zafiropulo, "Reliability -- a key element in loop systems", *International Zurich Seminar on Digital Communication*, March 1974, paper D2.
Assessment of techniques for using a stand-by loop, with bypass and self-heal actions; procedures for reconfiguration.

[Zafiropulo, 1974b]
P. Zafiropulo, "Performance evaluation of reliability improvement techniques for single-loop communications systems", *IEEE Trans. on Comm.*, com-22:6, June 1974.
Expanded version of [Zafiropulo, 1974a].

[Zafiropulo & Rothauser, 1972]
P. Zafiropulo and E. H. Rothauser, "Signalling and frame structures in highly decentralized loop systems", *First International Conference on Computer Communication (ICCC '72)*, Washington, October 1972, pp. 309-315.
Proposal for a loop in which a loop controller circulates an empty frame structure. Partitioned into 2 parts, one for regular speech traffic and one for data.

2. Radio communications

Radio-based networks may not -- strictly speaking -- be local networks, but many of the techniques are important in the consideration of such local networks. This section includes most of the important papers; it does not attempt to fully record all of the work done on multiaccess radio and satellite channels, nor does it include working papers such as the Packet Radio Temporary Notes. Papers are generally of two different kinds: proposals or descriptions for working systems, and primarily analytical work.

2.1. A guide to the literature on radio communications

Aloha System (University of Hawaii)
[Abramson, 1970]
[Abramson, 1973a]
[Abramson, 1973b]
[Kuo & Binder, 1973]
[Binder, *et al.*, 1975]

Slotted Aloha
[Roberts, 1972]

Reservation Aloha
[Crowther, *et al.*, 1973]

Packet Radio Network
[Kahn, 1975]
[Burchfiel, *et al.*, 1975]
[Fralick, *et al.*, 1975]
[Fralick & Garrett, 1975]
[Frank, *et al.*, 1975]
[Kunzelman, 1978]
[Kahn, *et al.*, 1978]
[Shoch & Stewart, 1979a]
[Shoch & Stewart, 1979b]

Further random access proposals, and analytical papers
[McGregor, *et al.*, 1971]
[Metcalfe, 1973a]
[Metcalfe, 1973b]
[Gitman, *et al.*, 1974]
[Kleinrock & Lam, 1974]
[Kleinrock and Tobagi, 1974]
[Gitman, 1975]
[Carleial & Hellman, 1975]
[Kleinrock & Lam, 1975]
[Binder, 1975]
[Ferguson, 1975a]
[Lam & Kleinrock, 1975]
[Ferguson, 1975b]
[Kleinrock & Tobagi, 1975]
[Tobagi & Kleinrock, 1975]
[Metzner, 1976]
[Yasuda & Tasaka, 1976]
[Gitman, *et al.*, 1976]
[Tobagi & Kleinrock, 1976]
[Abramson, 1977]

[Kobayashi, *et al.*, 1977]
[Ferguson, 1977a]
[Ferguson, 1977b]
[Ng & Mark, 1977]
[Callender, 1977]
[Fayolle, *et al.*, 1977]
[Lam, 1977]
[Kleinrock & Scholl, 1977]
[Hansen & Schwartz, 1977]
[Schuchman, 1977]
[Sastry, 1977]
[Rothauser & Wild, 1977]
[Tobagi & Kleinrock, 1977]
[Rubin, 1977]
[Tobagi, 1977]
[McGarty & Singh, 1977]
[Gerla, *et al.*, 1977]
[Fukuda, *et al.*, 1978]
[Ng & Mark, 1978]
[Tobagi & Kleinrock, 1978]
[Borgonovo & Fratta, 1978]
[Szpankowski, *et al.*, 1978]
[Okada, *et al.*, 1978]
[Lam, 1978]
[Kleinrock & Yemini, 1978]
[Tobagi, 1978]
[Kleinrock & Gerla, 1978]
[Jacobs, *et al.*, 1978]
[Eaves, 1979]

Mobile/Cellular radio systems

A great deal of work in this area is reported at the annual *IEEE Vehicular Technology Conference* and in the *IEEE Trans. on Vehicular Technology* (see, for example, the "Special Joint Issue on Mobile Communications", *IEEE Trans. on Vehicular Technology*, vt-22:4, November 1973, and *IEEE Trans. on Comm.*, comm-21:11, November). Listed below are several other articles on this subject.

[Schiff, 1970]
[Cox & Reudink, 1972]
[Bell, 1979]
[Hindin, 1979]

2.2. References on radio communications

[Abramson, 1970]
Norman Abramson, "The Aloha system -- another alternative for computer communications", *AFIPS Conference Proceedings (FJCC 1970)*, 37, 1970, pp. 281-285.

[Abramson, 1973a]
N. Abramson, "The Aloha system", in Abramson and Kuo, eds., *Computer-Communication Networks*, Prentice-Hall, 1973, pp. 501-517.

[Abramson, 1973b]
N. Abramson, "Packet switching with satellites", *AFIPS Conference Proceedings (NCC '73)*, New York, June 1973, pp. 695-702. Reprinted in [Green & Lucky, 1975; Chu, 1976], and also in Grimsdale and Kuo, eds., *Computer Communication Networks*, Noordhoff, 1975, pp. 291-309.

[Abramson, 1977]
N. Abramson, "The throughput of packet broadcasting channels", *IEEE Trans. on Comm.*, com-25:1, January 1977, pp. 117-128.

[Bell, 1979]
Bell System Technical Journal, 58:1, January 1979, Special issue on the Advanced Mobile Phone Service.

[Binder, *et al.*, 1975]
R. Binder, N. Abramson, F. Kuo, A. Okina, and D. Wax, "Aloha Packet Broadcasting -- a retrospect", *AFIPS Conference Proceedings (NCC '75)*, May 1975, pp. 203-215.

[Binder, 1975]
Richard Binder, "A dynamic packet-switching system for satellite broadcast channels", *International Conference on Communications (ICC '75)*, San Francisco, June 1975, pp. 41-1 - 41-5.

[Borgonovo & Fratta, 1978]
F. Borgonovo and L. Fratta, "SRUC: A technique for packet transmission on multiple access channels", *Fourth International Conference on Computer Communication (ICCC '78)*, Kyoto, September 1978.

[Burchfiel, *et al.*, 1975]
J. Burchfiel, R. Tomlinson, and M. Beeler, "Functions and structure of a packet radio station", *AFIPS Conference Proceedings (NCC '75)*, 44, May 1975, pp. 245-251.

[Callender, 1977]
G. S. Callender, "Contention resolution in an overlap poll communication system", *IBM Technical Disclosure Bulletin*, 19:11, April 1977, pp. 4314-4318.

[Carleial & Hellman, 1975]
A. B. Carleial and M. E. Hellman, "Bistable behavior of Aloha-type systems, *IEEE Trans. on Comm.*, com-23:4, April 1975, pp. 401-410.

[Cox & Reudink, 1972]
D. C. Cox and D. O. Reudink, "Dynamic channel assignment in two-dimensional large-scale mobile radio systems", *Bell System Technical Journal*, 51:7, September 1972.

[Crowther, *et al.*, 1973]
W. Crowther, R. Rettberg, D. Walden, S. Ornstein, F. Heart, "A system for broadcast communication: Reservation-Aloha", *Proceedings of the 6th Hawaii International Conference on*

System Sciences, Honolulu, January 1973, pp. 371-374.

[Eaves, 1979]
R. E. Eaves, "Aloha/TDM systems with multiple downlink capacity", *IEEE Trans. on Comm.*, com-27:3, March 1979, pp. 537-541.

[Fayolle, *et al.*, 1977]
G. Fayolle, E. Gelenbe, and J. Labetoulle, "Stability and optimal control of the packet switching broadcast channel", *JACM*, 24:3, July 1977, pp. 375-386.

[Ferguson, 1975a]
Michael J. Ferguson, "On the control, stability, and waiting time in a slotted Aloha random access system", *International Conference on Communications (ICC '75)*, San Francisco, June 1975, pp. 41-6 - 41-9. Reprinted in *IEEE Trans. on Comm.*, November 1975, pp. 1306-1311.

[Ferguson, 1975b]
Michael J. Ferguson, "A study of unslotted Aloha with arbitrary message lengths", *4th Data Communications Symposium*, ACM and IEEE, Quebec City, October 1975, pp. 5-20 - 5-25.

[Ferguson, 1977a]
M. J. Ferguson, "A bound and approximation of delay distribution for fixed-length packets in an unslotted Aloha channel and a comparison with time division multiplexing (TDM)", *IEEE Trans. on Comm.*, com-25:1, January 1977, pp. 136-139.

[Ferguson, 1977b]
M. J. Ferguson, "An approximate analysis of delay for fixed and variable length packets in an unslotted Aloha channel", *IEEE Trans. on Comm.*, com-25:7, July 1977, pp. 644-654.

[Fralick, *et al.*, 1975]
S. C. Fralick, et al., "Digital terminals for packet broadcasting", *AFIPS Conference Proceedings (NCC '75)*, 44, May 1975, pp. 253-262.

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S. C. Fralick and J. C. Garrett, "Technological considerations for packet radio network", *AFIPS Conference Proceedings (NCC '75)*, 44, May 1975, pp. 233-243.

[Frank, *et al.*, 1975]
H. Frank, I. Gitman, and R. M. Van Slyke, "Packet Radio system -- network considerations", *AFIPS Conference Proceedings (NCC '75)*, 44, May 1975, pp. 217-231.

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A. Fukuda, K. Mukumoto and T. Hasegawa, "Adaptive retransmission randomization schemes for a packet switched random access broadcast channel", *Fourth International Conference on Computer Communication (ICCC '78)*, Kyoto, September 1978, pp. 543-548.

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M. Gerla, L. Nelson, and L. Kleinrock, "Packet satellite multiple access: models and measurements", *National Telecommunications Conference (NTC '77)*, December 1977, paper 12:2.

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I. Gitman, R. M. Van Slyke, and H. Frank, "On splitting random accessed broadcast communication channels", *Computer Nets: Supplement to the Proceedings of the 7th Hawaii International Conference on System Sciences*, Honolulu, January 1974, pp. 81-85.

[Gitman, *et al.*, 1975]
I. Gitman, R. M. Van Slyke, and H. Frank, "Routing in packet-switching broadcast radio networks", *IEEE Trans. on Comm.*, August 1976, pp. 926-930.

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I. Gitman, "On the capacity of slotted Aloha networks and some design problems", *IEEE Trans. on Comm.*, com-23:3, March 1975, pp. 305-317.

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L. W. Hansen and M. Schwartz, "An assigned-slot listen-before-transmission protocol for a multiaccess data channel", *International Conference on Communication (ICC '77)*, Chicago, June 1977, paper 22.2, pp. 112-116.

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H. J. Hindin, "Cellular system expands number of mobile-phone channels", *Electronics*, 52:11, May 24, 1979, pp. 158-164.

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I. M. Jacobs, R. Binder, E. V. Hoversten, "General purpose packet satellite networks", *Proc. of the IEEE*, 66:11, November 1978, pp. 1448-1467.

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Robert E. Kahn, "The organization of computer resources into a packet radio network", *AFIPS Conference Proceedings (NCC '75)*, 44, May 1975, pp. 177-185. Reprinted in *IEEE Trans. on Comm.*, com-25:1, January 1977, pp. 169-178.

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L. Kleinrock and S. Lam, "On stability of packet switching in a random multi-access broadcast channel", *Computer Nets: Supplement to the Proceedings of the 7th Hawaii International Conference on System Sciences*, Honolulu, January 1974., pp. 74-77

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L. Kleinrock and S. Lam, "Packet switching in a multiaccess broadcast channel: peformance evaluation", *IEEE Trans. on Comm.*, com-23:4, April 1975, pp. 410-423.

[Kleinrock & Scholl, 1977]
L. Kleinrock and M. Scholl, "Packet switching in radio channels: new conflict-free multiple access schemes for a small number of data users", *International Conference on Communications (ICC '77)*, Chicago, June 1977, paper 22.1, pp. 105-111.

[Kleinrock & Tobagi, 1974]
Leonard Kleinrock and Fouad Tobagi, "Carrier sense multiple access for packet switched radio channels", *International Conference on Communication (ICC '74)*, Minneapolis, June 1974, paper 21B.

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Leonard Kleinrock and Fouad Tobagi, "Packet switching in radio channels: Part 1 -- carrier sense multiple-access modes and their throughput-delay characteristics", *IEEE Trans. on Comm.*, com-23:12, December 1975, pp. 1400-1416.

[Kleinrock & Yemini, 1978]
L. Kleinrock and Y. Yemini, "An optimal adaptive scheme for multiple access broadcast communication", *International Conference on Communications (ICC '78)*, Toronto, June 1978, paper 7.2.

[Kobayashi, *et al.*, 1977]
H. Kobayashi, Y. Onozato, and D. Huynh, "An approximate method for design and analysis of an Aloha system", *IEEE Trans. on Comm.*, com-25:1, January 1977, pp. 148-157.

[Kunzelman, 1978]
Ronald C. Kunzelman, "Overview of the Arpa Packet Radio Experimental Network", *16th IEEE Computer Society International Conference (COMPCON Spring '78)*, San Francisco, February 1978, pp. 157-160.

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F. F. Kuo and R. D. Binder, "Computer-communications by radio and satellite: The Aloha System", in Grimsdale and Kuo, eds., *Computer Communication Networks*, Noordhoof, 1975, pp. 397-407.

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Simon S. Lam, "Satellite multiaccess schemes for data traffic", *International Conference on Communications (ICC '77)*, Chicago, June 1977, paper 37.1.
A good overview and comparison of satellite techniques.

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Simon S. Lam, "An analysis of the reservation-aloha protocol for satellite packet switching", *International Conference on Communications (ICC '78)*, Toronto, June 1978, paper 27.3.

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S. S. Lam and L. Kleinrock, "Packet switching in a multiaccess broadcast channel: dynamic control procedures", *IEEE Trans. on Comm.*, com-23:9, September 1975, pp. 891-904.

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R. P. McGarty and K. J. Singh, "Multiple access techniques for low data rate satellite communications systems", *National Telecommunications Conference (NTC '77)*, December 1977, paper 5:2.

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Dennis N. McGregor, Milton E. Jones, and Peter E. O'Neil, "Comparison of several demand assignment multiple access/modulation techniques for satellite communications", *International Conference on Communications (ICC '71)*, Montreal, June 1971, pp. 42-7 - 42-14.
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