

INTEL

MOORE



INTEROFFICE CORRESPONDENCE

TO: Field Sales
SUBJECT: 4305 Marketing

FROM: Lloyd Treichel *Good job*
x3388, MD 3K

DATE: October 12, 1981

RE:

CC:

With this memo are updated marketing support materials for the 4305:

- Selling the 4305 against Intel competition
- 4305 Install Base is a list of companies with each line representing one 4305 system
- The 4305 SSD reference list is a cross section of the entire install base

The reference lists are not meant to be passed out to customers. Before referencing an account, be sure to contact the sales rep to ensure relations are good at that site, as well as getting a name and number of the individual contact. To ensure the reference list represents good references, your help in additions or deletions would be greatly appreciated.

The Install Base List is for your use to identify most of the companies in which the 4305 is currently installed and is not meant to be distributed to customers. Should you wish any detail on a company on the 4305 Install Base List, contact product marketing for additional information.

As of October 1, 1981, there are 846 4305 modules installed worldwide representing about 315 systems at about 210 customers.

Occasionally, outdated 4305 marketing literature has been used in marketing calls and proposals. Please be sure the material you are using is current. There is a new data sheet available and a PDM should be printed in a week. Lastly, a new proposal document will be available shortly to replace the outdated information in the current 4305 proposal document.

SELLING THE 4305 AGAINST INTEL COMPETITION

Intel's FAST-3805 and FAST-3815 are currently the only direct competition for the 4305 and represent a very aggressive presence in this market place. Their strategy is one of primarily letting STC educate the customer, then come in at a lower price, emphasizing a number of claimed hardware advantages. The advantages they will push, and STC's response, are as follows:

1) Micro-code initialization and battery backup: Micro-code initialization is an automated procedure which initializes their FAST-38XX to allow it to emulate the particular device selected (most often a 2305). In order to do this initialization, the cold start formatting must be done after each complete power down or if the box has been down for maintenance. The cold start formatting is a process where an operator enters, through a keyboard on the 38XX, the necessary parameters and numbers to identify the Intel box as a 2305 or other such device. This procedure takes three to four minutes for a person who is adept and understanding of the procedure. To the person who isn't as familiar, it may take 15 minutes. Because this is such an error prone entry, Intel has elected to backup this data to CMOS RAM with battery backup so that in the event of a short power outage, the FAST 38XX can reformat itself using the stored data as instructions. However, the formatting is limited to initialization of the device, creation of a VTOC and a page data set. However, customers have told us that the automatic formatting has been found to be unreliable, so they go through the cold start procedures each time.

By doing the initialization under operating system control, the procedure would be much faster and less prone to operator error doing the cold format routine. It appears that in actual operation the "automatic formatting" offers no advantage over operating system (i.e. IEHDASDR or STC POST and DSF) procedures to format the device.

2) Spare Storage is a feature of the Intel product which allows the microcode programs to continually check the storage space for tracks which may be of marginal performance. The data is moved from one part of storage to another (pseudo track to pseudo track) whenever a suspect area is encountered. This process continues until the spare storage is at some predetermined level and a "low spares" indicator is lit on the display panel.

This feature is not needed with single and double bit error correction. Maintenance experience with the 4305 has shown that less than 1% of the hard errors would have been prevented by the availability of spare storage. The more serious problem is the failure of an entire chip which would consume most, if not all, of the available spare storage. Along with regular FE maintenance and use of PM2 to predict chip failure, there is no need for the spare storage feature since excellent reliability can be attained without it.

3) Cooling and electrical costs average about 10% less for STC in identically configured systems. Intel has been using some out-dated specifications in some situations to indicate that STC's 4305 takes about three times the cooling and electrical costs of their 38XX. The correct specifications are contained in the new Model 6 Data Sheet.

4) Native Mode is a feature of the Intel device to more efficiently utilize the storage space available by treating the FAST-38XX as a fixed block device instead of a count-key-data device.

This feature permits four pages per track rather than three under the count-key-data format. VM is the only operating system which can take advantage of this particular feature. Since VM represents a small number of the operating systems, this is additional support which appears unnecessary to meet the general users' needs.

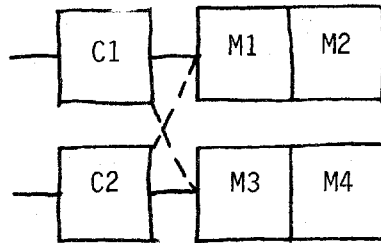
To support this feature, software modifications to the VM operating systems channel commands for the FAST-3805 are required. These mods are available from the University of Waterloo. Should a customer wish to use those mods, all future mods or corrections will not be the responsibility of Intel and they must look to the University of Waterloo for additional support.

5) Motor Generators, a feature of Intel's 38XX, allows a ride through on power fluctuations of 200 ms. The 4305 can withstand a power spike of 30 ms. without loss of data and can continue to operate at 160 volt for 200 ms. without any loss. It should be noted that most disk and tape devices are unable to withstand even the minimum 30 ms power fluctuations. In that event, the whole computing system would have to be reinitialized anyway. If the customer has severe power problems the motor generator is not the solution, but an uninterruptible power supply appears to resolve the problem more completely.

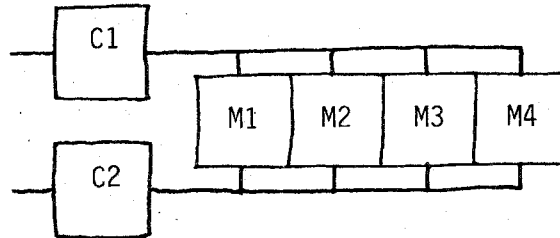
6) 3350 emulation is not needed for most operating system environments since all support a 2305 device. If there is a 2305 in a particular paging application, it will always be used before any other device. The 3350 support could be used in a DOS environment, however the typical DOS system size makes it uneconomical to add a solid state disk paging device, and many DOS CPU's do not have the necessary channel hardware to attach either the 38XX or 4305.

7) Intel indicates that it can configure a FAST 3805 with four controllers and up to 72 megabytes of storage modules or what might be referred to as a 4 x 6 configuration. It is unclear how the hardware is looked up under the covers, but from our understanding it is four separate controllers each attached to at least one storage module. However, to our knowledge dual porting is not available in the FAST-3805 although we heard that dual porting would be available from Intel in 1981.

Another 2 x 4



4305 2 x 4



In the diagram labeled "4305 2 x 4", access to any storage module can be attained via either control unit or channel. Compare this to the diagram labeled "Another 2 x 4", which is what we believe the FAST-3805 resembles. The dashed lines indicate that each controller may be able to access additional storage modules. However, that is available only by reinitialization of the FAST-3805. In that diagram, the configuration is essentially 2 (two) 1 x 2 systems; access is not available to any storage module from either controller. A true dual ported system offers the customer a 100% performance and reliability improvement over a system without dual-porting on equally configured systems.

In the matter of performance, it has taken Intel two years to resolve their performance problems and now they are able to place their performance close to or equal to STC.

- 1) Benchmarks: With everything being equal, STC has always outperformed Intel by at least 10% in any shop which did evaluations on both systems.
- 2) Prudential benchmark: This "test" was done on a 1 x 1 configuration, but should not be interpreted as a benchmark; Intel used a standalone program to supposedly evaluate performance of a paging device. In this particular test, the results indicated the 3805 outperformed the 4305 by about 10%. However, the standalone program used command chains which did not issue set sector commands, whereas every real application for the 4305, including paging, does. The 4305 uses the set sector command to locate the record in the storage array. This is necessary for full and complete 2305 emulation. When the set sector is missing, it takes us an additional 0.3 ms per I/O to locate the record. Therefore, that benchmark program is not representative of the real world.
- 3) Channel distances will affect the performance of the Intel system whereas the 4305 will perform equally well regardless of its distance (within the specified limits) from the CPU on the channel. The closer the Intel system is to the CPU, on the channel, their performance will be very close to the 4305. Depending on the computer room space, most installations do not have the luxury to rearrange their computer room to allow an I/O subsystem close proximity to the CPU. In the future, when the original reason for placement of the Intel 3805 close to the CPU is forgotten, future installation managers may unknowingly degrade performance by relocating the system.

Pricing the systems, Intel will usually come in 10% to 15% below us on the 3805 configurations where the 4305 Model 3 should be at the same level as their 3815 1 x 1 and 1 x 2 configurations. Should there be exceptions to this, contact your FSM or sales manager for advice.

In a final analysis, Intel cannot match the performance and track record of STC as a vendor.

1) STC is a data processing company for all D.P. peripheral hardware that an installation may need. STC has been in the peripheral business since 1969 and will consistently offer the latest technology to meet the needs of its customers. The major part of STC's revenues derive from the DP products it manufactures. Intel is not in the DP business, but is a semi-conductor chip manufacturer. It certainly was not unusual to see them in the memory market because of their chip business. Currently, they don't appear to be as aggressive in their sales of memory. It must be remembered that the major part of Intel's business still comes from the manufacture of chips. Currently less than 5% of Intel's revenues are generated by their FAST 3800 products. If the product does not meet Intel's projected profit target, it is possible the product could be dropped.

2) Field Service of STC is handled from over 100 offices internationally. These are knowledgeable personnel who are equipped with tools such as PM2 and SICPOST to ensure a high level of performance of the 4305. In addition there are specialist personnel in the regional offices as well as headquarters. Intel certainly cannot maintain an office in the number of locations STC currently serves because of their single product line. In some areas the Intel product may be maintained by a third party maintenance group.

3) Systems Engineering is very crucial to the smooth and efficient operation of a computer installation. Because the hardware is driven by some very complex software systems, the SE can assist a customer in achieving optimum utilization of STC equipment. This service to the installations cannot be measured in pure dollars, but in many cases, it is a "free" consulting service. These personnel are located in over 70 offices nationally.

Again, Intel could not maintain a staff in separate offices to perform this function. As an example of follow-up that would be performed by SE personnel: In one particular installation, the Intel device had been installed for a year and had been performing poorer than a 2305 in their shop. Our SE staff discovered this in a routine look at RMF output.

4) STC install base - worldwide, STC has installed over 300 4305 systems. This indicates both customer satisfaction and our ability to service and support our install base.

LT/do 2105H

1	3M	MINN, MN	61	EPA	WASHINGTON, DC
2	A T & T	WHITE PLNS, NY	62	EQUITABLE LIFE	EASTON, PA
3	A T & T	WHITE PLNS, NY	63	EXFC OFF OF PRES	WASHINGTON, DC
4	A T & T	WHITE PLNS, NY	64	EXXON	FLORENHAM PK, NJ
5	A T & T	BEDMINSTER, NJ	65	EXXON	FLORENHAM PK, NJ
6	AD/ SYSTEMS APP	CHICAGO, IL	66	EXXON	FLORENHAM PK, NJ
7	AETNA	WINDSOR, CT	67	EXXON	FLORENHAM PK, NJ
8	AETNA	WINDSOR, CT	68	EXXON USA	HOUSTON, TX
9	AETNA	WINDSOR, CT	69	FEDERAL RESERVE	WASHINGTON, DC
10	AETNA	WINDSOR, CT	70	FORD	DETROIT, MI
11	AETNA	WINDSOR, CT	71	FORD	DETROIT, MI
12	AIR PRODUCTS	TREXLETTOWN, PA	72	GENERAL DYNAMICS	FT WORTH, TX
13	AMEP MGMT SYS	ARLINGTON, VA	73	GENERAL DYNAMICS	FT WORTH, TX
14	AMOCO PRODUCTION	TULSA, OK	74	GIBBS & HILL	NEW YORK
15	AMOCO PRODUCTION	TULSA, OK	75	GM BUICK	FLINT, MI
16	AMOCO PRODUCTION	TULSA, OK	76	GM TRUCK & COACH	DETROIT, MI
17	AMOCO PRODUCTION	TULSA, OK	77	GMAD	WARREN, MI
18	AMOCO PRODUCTION	TULSA, OK	78	GMISCA/DETROIT	WARREN, MI
19	AMOCO PRODUCTION	TULSA, OK	79	GOODYEAR	CLEVELAND, OH
20	AMOCO RESEARCH	TULSA, OK	80	GRIMMAN	BETHPAGE, NY
21	AMOCO RESEARCH	TULSA, OK	81	GTF	MARINA DLRY, CA
22	ARAMCO	HOUSTON, TX	82	HARTFORD INS	HARTFORD, CT
23	ARCO	DALLAS, TX	83	HARTFORD INS	HARTFORD, CT
24	ARCO	DALLAS, TX	84	HARTFORD INS	HARTFORD, CT
25	ARCO	DALLAS, TX	85	HOME INS	NEW YORK, NY
26	AUTO CLUB MICHIGAN	DEARBORN, MI	86	HOME INS	NEW YORK, NY
27	BANK OF AMERICA	SAN FRANCISCO	87	HUGHES	FULLERTON, CA
28	BANK OF AMERICA	SAN FRANCISCO	88	HUGHES RSG	EL SEGUNDO, CA
29	BANK OF AMERICA	SAN FRANCISCO	89	INTERACTIVE DATA	BOSTON, MA
30	BANK OF AMERICA	SAN FRANCISCO	90	INTERACTIVE DATA	BOSTON, MA
31	BELL LABS	HOLMDEL	91	INTERACTIVE DATA	BOSTON, MA
32	BELL LABS	HOLMDEL, NJ	92	INTERACTIVE DATA	BOSTON, MA
33	BELL LABS	HOLMDEL, NJ	93	INTL HARVESTER	HINSDALE, IL
34	BELL LABS	HOLMDEL, NJ	94	INTL HARVESTER	HINSDALE, IL
35	BELL LABS	COLUMBUS, OH	95	INTL HARVESTER	HINSDALE, IL
36	BLUE CROSS	ST LOUIS, MO	96	INTL HARVESTER	BROOKFIELD, WI
37	BOEING	SEATTLE, WA	97	INTL HARVESTER	BROOKFIELD, WI
38	BOEING	SEATTLE, WA	98	INTL HARVESTER	BROOKFIELD, WI
39	BOEING FLIGHT TEST	SEATTLE, WA	99	INTL HARVESTER	BROOKFIELD, WI
40	BROWN & ROOT	HOUSTON, TX	100	INVEST DIV SVS	MINNEAPOLIS
41	BURLINGTON NORTHERN	MINNEAPOLIS, MN	101	IRVING TRUST	NEW YORK, NY
42	CALIF STATE OF	SACRAMENTO, CA	102	J C PENNEY	MILWAUKEE, WI
43	CAT TRACTOR	PEORIA, IL	103	JOHN HANCOCK	BOSTON, MA
44	CAT TRACTOR	PEORIA, IL	104	KEMPER INS	LONG GROVE, IL
45	CBS	NEW YORK, NY	105	KEMPER INS	LONG GROVE, IL
46	CHASE MANHATTAN	NEW YORK, NY	106	KODAK	ROCHESTER, NY
47	CHEMICAL BANK	NEW YORK, NY	107	KODAK	ROCHESTER, NY
48	CHEMICAL BANK	NEW YORK, NY	108	KODAK	ROCHESTER, NY
49	CLEMSON UNIV	CHAPLOTTE, NC	109	LITTON MELLONICS	LOS ANGELES, CA
50	COMBUSTION ENG	WINDSOR, CT	110	LOCKHEED	BURBANK, CA
51	COMBUSTION ENG	WINDSOR, CT	111	LOCKHEED	BURBANK, CA
52	COMBUSTION ENG	HOUSTON, TX	112	LOCKHEED	SUNNYVALE, CA
53	CONNET	WASHINGTON, DC	113	LOCKHEED	SUNNYVALE, CA
54	COMPUTER POWER	JACKSONVILLE, FL	114	MANUFACTURERS HANOVER	NEW YORK, NY
55	CONSOLIDATED EDISON	NEW YORK	115	MARYLAND NAT BANK	BALTIMORE, MD
56	DAYTON'S	MNPLS, MN	116	MCDONNELL DOUGLAS	ST LOUIS, MO
57	DETROIT DIESEL	INDIAN, IN	117	MCDONNELL DOUGLAS	ST LOUIS, MO
58	DUKE POWER	CHARLOTTE, NC	118	MCDONNELL DOUGLAS	ST LOUIS, MO
59	DUPONT	WILMINGTON, DE	119	MCDONNELL DOUGLAS	ST LOUIS, MO
60	DUPONT	WILMINGTON, DE	120	MCDONNELL DOUGLAS	ST LOUIS, MO

121	MCDONNELL DOUGLAS	LONG BEACH, CA	181	SYSTEMS DEVELOP	LOS ANGELES, CA
122	MCDONNELL DOUGLAS	LONG BEACH, CA	182	SYSTEMS DEVELOP	LOS ANGELES, CA
123	MCDONNELL DOUGLAS	LONG BEACH, CA	183	TEXAS INSTRUMENTS	DALLAS, TX
124	MCDONNELL DOUGLAS	LONG BEACH, CA	184	TRAVELERS INS	HARTFORD, CT
125	MILLER BREWING	MILWAUKEE, WI	185	TRAVELERS INS	HARTFORD, CT
125	MILLER BREWING	MILWAUKEE, WI	186	TRAVELERS INS	HARTFORD, CT
127	MISSOURI PACIFIC RR	ST LOUIS, MO	187	TYMSHARF	DALLAS, TX
128	MONSANTO	ST LOUIS, MO	188	U S NAVY	WASHINGTON, DC
129	MUTUAL OF OMAHA	OMAHA, NE	189	UNION OIL	CHICAGO, IL
130	N F UTILITIES	HARTFORD, CT	190	UNION OIL	LOS ANGELES, CA
131	NATIONAL CAR	MINN, MN	191	UNITED AIRLINES	DENVER, CO
132	NCSS	STAMFORD, CT	192	UNITED AIRLINES	DENVER, CO
133	NCSS	STAMFORD, CT	193	UNIV OF MICHIGAN	ANN ARBOR, MI
134	NCSS	STAMFORD, CT	194	UNIV OF MICHIGAN	ANN ARBOR, MI
135	NCSS	STAMFORD, CT	195	UPJOHN	KALAMAZOO, MI
136	NCSS	STAMFORD, CT	196	UPJOHN	KALAMAZOO, MI
137	NECDATA	BOULGER, CO	197	VIRGINIA. ST OF	RICHMOND, VA
138	NORTHROP	HAWTHORNE, CA	198	WARNER BROS	BUREANK, CA
139	NORTHROP	HAWTHORNE, CA	199	WELLS FARGO	SAN FRANCISCO
140	NSA	MARYLAND	200	WESTERN ELECTRIC	WARRENVILLE, IL
141	NW INDUSTRIES	CHICAGO, IL	201	WESTERN GEDPHYS	HOUSTON, TX
142	O'M SCOTT	COLUMBUS, OH	202	WILLIAMS CO	TULSA, OK
143	OKLAHOMA. ST OF	OK CITY, OK	203	WISCONSIN TELEPHONE	MILWAUKEE, WI
144	ON LINE SYSTEMS	PITTSBURGH, PA	204	XEROX	ROCHESTER, NY
145	OPTIMUM SYSTEMS	ROCKVILLE, MD			
146	PHILLIP MORRIS	RICHMOND, VA			
147	PHILLIPS PETROLEUM	BARTLESVLE, OK			
148	PRATT WHITNEY	PALM BEACH, FL			
149	PRINCETON UNIV	PRINCETON, NJ			
150	R J REYNOLDS	GREENSBORO, NC			
151	RAISTON PURINA	ST LOUIS, MO			
152	RCA	CHERRY HILL, NJ			
153	RCA	CHERRY HILL, NJ			
154	RIVERSIDE, CNTY OF	RIVERSIDE, CA			
155	SCOT TIME SHARING	BETHESDA, MD			
156	SEALAND INDUSTRIES	EXIZABETH, NJ			
157	SEARS	CHICAGO, IL			
159	SEIBELS BRUCE	COLUMBIA, SC			
159	SHARED MEDICAL	PHILA, PA			
160	SHELL OIL	HOUSTON, TX			
161	SIGNETICS	SAN JOSE, CA			
162	SLAC	PALO ALTO, CA			
163	SOUTHERN DATA SVCS	BIRMINGHAM, AL			
164	STANDARD OIL	CHICAGO, IL			
165	STANDARD OIL	CHICAGO, IL			
166	STANDARD OIL	CHICAGO, IL			
167	STANDARD OIL	CLEVELAND, OH			
169	STANDARD OIL	TULSA, OK			
169	STANDARD OIL	SAN FRANCISCO			
170	STANDARD OIL	CONCORD, CA			
171	STANDARD OIL	CONCORD, CA			
172	STANDARD OIL	SAN FRANCISCO			
173	STANDARD OIL	SAN FRANCISCO			
174	STANDARD OIL	SAN FRANCISCO			
175	STATE FARM	BLOOMINGTON, IL			
176	STATE FARM	BLOOMINGTON, IL			
177	STATE FARM	GREELEY, CO			
178	STATE STREET BANK	BOSTON, MA			
179	STFARNS ROGERS	DENVER, CO			
180	STONE & WEBSTER	BOSTON, MA			

SELECTED CROSS SECTION
4305 SSD REFERENCE LIST 10/08/81

C U S T O M E R	SALES REP	CONFIG	INSTALL DATE	C P U ATTACHMENT	OPER SYSTEM	ON LINE APPL	2305 USER	3MB USER
A T & T WHITE PLNS, NY	KUTTER, JIM 914 241-3662	2X2	04/20/80	AMD V8	VM		N	N
AMOCO PRODUCTION TULSA, OK	LORENZ, BOB 918 664-8450	1X4	04/15/80	IBM 3033	MVS		Y	N
ARCO DALLAS, TX	MONTAGUE, STEVE 214 387-4845	2X4	02/09/81	IBM 3033	MVS		Y	Y
BANK OF AMERICA SAN FRANCISCO	BREN, WAYNE 415 563-2824	2X1	10/06/80	IBM 168 IBM 3033	MVS/SP		Y	N
BELL LABS HOLMDEL, NJ	FIGORE, SKIP 20 233-5900	2X4	*****	AMD V8 IBM 3033	VM		Y	N
BLUE CROSS ST LOUIS, MO	KURLAND STEVE 314 569-3345	1X2	*****	IBM 3032	MVS		N	N
BOEING SEATTLE, WA	GRADY, MIKE 206 232-2004	2X4	06/01/80	IBM 3033	VM		Y	Y
CALIF STATE OF SACRAMENTO, CA	HANSEN, RON 415 932-0516	1X2	04/26/81	AMD V5 IBM 168	MVS	CICS	Y	N
CHEMICAL BANK NEW YORK, NY	COBB, RALPH 212 972-9484	2X2	08/28/80	IBM 3032	MVS/SE	TSO	Y	N
COMBUSTION ENG WINDSOR, CT	TALBOT, RON 203 688-8980	1X1	04/20/80	AMD V6	MVS		Y	N
COMPUTER POWER JACKSONVILLE, FL	HANNAN, DAVE 904 396-0144	1X1	04/03/81	AMD V7	MVS		N	N
DUKE POWER CHARLOTTE, NC	LENNARD, OSCAR 704 523-2543	1X3	*****	IBM 3033	MVS		N	N
EQUITABLE LIFE EASTON, PA	WEISS, JOHN 212 972-9484	2X3	06/21/80	IBM 168	MVS	TSO	Y	N
EXXON FLORHAM PK, NJ	DOWD, JOE 201 233-5900	1X1	*****	IBM 4341	MVS		N	N
GENERAL DYNAMICS FT WORTH, TX	MARX, TED 214 387-4845	2X2	11/21/80	IBM 3033	MVS	CADAM	Y	Y
GIBBS & HILL NEW YORK	GILSENAN, JOE 212 972-9484	2X2	*****	IBM 3033	MVS		N	N
GM BUICK FLINT, MI	STACK, VICTOR 313 354-0850	2X2	*****	IBM 3033	MVS	TSO	N	N

SELECTED CROSS SECTION
4305 SSD REFERENCE LIST 10/08/81

C U S T O M E R	SALES REP	CONFIG	INSTALL DATE	C P U ATTACHMENT	OPER SYSTEM	ON LINE APPL	2305 USER	3MB USER
GTE MARINA DLRY CA	WEBSTER, HARRY 813 877-8195	2X2	06/22/80	IBM 3033 AMD V8	MVS		Y	N
HARTFORD INS HARTFORD, CT	TALBOT, PON 203 508-8980	2X2	08/10/80	IBM 3033	MVS/SE	IMS	Y	N
HUGHES FULLERTON, CA	UNGER, DALE 714 849-8989	2X2	03/15/81	AMD V8 AMD V8	MVS	TSO	Y	N
INTERACTIVE DATA BOSTON, MA	ELMUTS, GUNARS 617 890-9114	2X4	06/21/80	AMD V8	VM		Y	N
INTL HARVESTER HINSDALE, IL	CORROSSI, JIM 312 876-1520	1X1	09/15/80	AMD V7	MVS		Y	N
LOCKHEED SUNNYVALE, CA	DAVIS, RALPH 415 563-2824	2X4	*****	IBM 3033 IBM 3032	MVS	CADAM	Y	Y
MCDONNELL DOUGLAS ST LOUIS, MO	MEYER, MIKE 314 569-3345	2X2	06/15/80	IBM 3033 IBM 3033	MVS	IMS PROG LIB	Y	Y
MISSOURI PACIFIC RR ST LOUIS, MO	MEYER, MIKE 314 569-3345	1X2	09/28/80	IBM 3033 IBM 3033	MVS		N	N
MONSANTO ST LOUIS, MO	MEYER, MIKE 314 569-3345	1X2	10/12/80	IBM 168	VM	CMS	Y	N
NATIONAL CAR MINN, MN	PETERSON, TOM 612 854-7556	1X1	10/19/80	AMD V6	MVS	CICS	N	N
NCSS STAMFORD, CT	RODDERS, LEN 203 544-9357	1X2	11/17/79	AMD V7	NCSS VM		Y	Y
NEODATA BOULDER, CO	CRENSHAW, CHUCK 303 427-6254	1X2	04/21/79	IBM 3033	MVS	TSO	N	Y
OKLAHOMA, ST OF OK CITY, OK	COVERT, JOE 405 521-8934	1X2	10/13/80	IBM 156	MVS		N	N
ON LINE SYSTEMS PITTSBURGH, PA	HUDSON, GERRY 412 922-2971	1X2	06/12/80	ITL A36 ITL A56	MVS		N	N
PRINCETON UNIV PRINCETON, NJ	GOSCICKI, RICH 201 233-7981	2X2	09/22/80	IBM 3033	MVS	TSO	N	N
RALSTON PURINA ST LOUIS, MO	MEYER, MIKE 314 569-3345	2X3	01/25/81	IBM 3033	MVS/VM		N	N
SEARS CHICAGO, IL	O'ALLEY, DENNIS 312 876-1520	2X4	05/11/80	IBM 3033	MVS	CICS	Y	Y

SELECTED CROSS SECTION

4305 SSD REFERENCE LIST 10/08/81

C U S T O M E R	SALES REP	CONFIG	INSTALL DATE	C P U ATTACHMENT			OPER SYSTEM	ON LINE APPL	2305 USER	3MB USER
SHELL OIL HOUSTON, TX	GRANELLO, GREG 713 464-3022	2X4	09/02/80	IBM 158	IBM 168		VM	CMS	Y	N
STANDARD OIL CHICAGO, IL	ALMERTH, DAVE 312 876-1520	2X4	07/26/80	IBM 3033			MVS	TSC	Y	N
STANDARD OIL CLEVELAND, OH	ALEXY, PAUL 216 621-0254	1X1	12/30/80	IBM 158			VM	TSO	N	N
STATE FARM BLOOMINGTON, IL	POWELL, JOHN 309 676-4605	1X1	03/02/81	IBM 3033			MVS	IIS	Y	N
STEARNS ROGFRS DENVER, CO	PRESCOTT, DANA 303 427-6254	1X1	*****	AMD V7			MVS	TSO	N	N
UNION OIL CHICAGO, IL	MONTALBANO BEN 312 876-1520	1X2	06/18/80	IBM 158	IBM 3033		MVS		N	N
UNITED AIRLINES DENVER, CO	WAGNER, FRANK 303 427-6254	2X4	05/15/81	AMD V8	AMD V8	IBM 3033	ACP		Y	N
UNIV OF MICHIGAN ANN ARBOR, MI	BLY RANDY 313 354-0850	2X4	09/01/80	AMD V8			MTS		Y	Y
WESTERN ELECTRIC WARRENVILLE, IL	MONTALBANO, BEN 312 876-1520	2X4	11/08/80	AMD V7	AMD V8	IBM 3033	MVS		Y	N
XEROX ROCHESTER, NY	SIER, DAVE 716 42-1400	1X2	04/22/81	IBM 3033			MVS		Y	N