

WALTHER'S DISK DATA BOOK

August 1976

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WALTHER'S DISK DATA BOOK

Revision A
October 8, 1976

| | | | | | |
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| Page 2 | Add | | | | |
| | General Systems | | 105 | | |
| Page 3 | Add | | | | |
| | GSI | 1000 | 1.1 | 1500 | .8 |
| Page 8 | Change | | | | |
| | Control Data Corp. | | 9727H | | 8/74 |
| | To | | | | |
| | Control Data Corp. | | 9427H | | 8/74 |
| Page 12 | Replace with Page 12, Revision A | | | | |
| Page 14 | Delete | | | | |
| | Memorex | 601 | 6/76 | | |
| Page 15 | Delete | | | | |
| | Memorex | 0 0 | 500 | 4.2 | |
| Page 44 | Add | | | | |
| | Memorex | 601 | 6/76 | | |
| Page 45 | Add | | | | |
| | Memorex | 0 0 | 200 | 1.3 | |

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FLOPPY DISK AND MEDIA

FLOPPY DISK DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|----------------------|--------|-------------------------|
| BURROUGHS | 9419 | 2/75 |
| CALCOMP | 140 | 1/74 |
| | 142 | 8/75 |
| CONTROL DATA | 9400 | 3/74 |
| | 9404 | 11/75 |
| DIABLO (Xerox) | 10 | 10/75 |
| INNOVEX | 210 | 6/74 |
| | 220 | 6/74 |
| IBM | FDII | 9/71 |
| | FDIII | 6/73 |
| MEMOREX | 651 | 12/72 |
| | 652 | 12/73 |
| ORBIS (Perkin-Elmer) | 74 | 12/73 |
| | 76/77 | 9/75 |
| PER SCI | 70 | 1/76 |
| | 75 | 9/75 |
| | 270 | 1/76 |
| PERTEC | FD400 | 1/74 |
| | FD500 | 1/74 |
| | FD511 | 6/75 |
| SHUGART | SA800 | /73 |
| | SA801 | /73 |
| | SA3800 | 8/75 |
| | SA900 | 8/75 |
| SYCOR | 145 | 1/75 |
| TRI-DATA | 50 | 12/74 |

Exhibit I. A

**FLOPPY DISK DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units**

| Company | 1975 | | 1976 | |
|----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| BURROUGHS | 1,000 | 1.1 | 12,000 | 6.7 |
| CALCOMP | 4,000 | 4.3 | 10,000 | 5.5 |
| CONTROL DATA | 5,000 | 5.4 | 11,000 | 6.1 |
| DIABLO (Xerox) | 2,000 | 2.2 | 4,000 | 2.2 |
| INNOVEX | 2,000 | 2.2 | 3,000 | 1.7 |
| IBM | 29,600 | 32.2 | 62,000 | 34.4 |
| MEMOREX | 12,000 | 13.0 | 23,000 | 12.8 |
| ORBIS (Perkin-Elmer) | 1,000 | 1.1 | 2,000 | 1.1 |
| PER SCI | 500 | 0.5 | 2,000 | 1.1 |
| PERTEC | 6,000 | 6.5 | 13,000 | 7.2 |
| POTTER | 200 | 0.2 | 500 | 0.3 |
| SHUGART | 18,000 | 19.6 | 35,000 | 19.4 |
| SYCOR | 500 | 0.5 | 2,000 | 1.1 |
| TRI-DATA | 200 | 0.2 | 500 | 0.3 |

Exhibit I. B

FLOPPY DISK MEDIA MANUFACTURERS

| Company | Model |
|-----------------------|-------------------------------|
| ATHANA | Series 47 |
| BASF | Flexydisk I |
| GRAHAM MAGNETICS | Perma-Disc |
| INFORMATION TERMINALS | Flexible Disk, Flippy Disk |
| IBM | IBM Diskette |
| K/TRONIX | K/Disk |
| MEMOREX | Markette |
| 3M | Scotch 740 |

Exhibit I. C

FLOPPY DISKS
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | Quantity | % | Quantity | % |
|-----------------------|-----------|------|-----------|------|
| ATHANA | 0 | | 100,000 | 0.9 |
| BASF | 800,000 | 11.8 | 1,000,000 | 9.1 |
| GRAHAM MAGNETICS | 10,000 | 0.1 | 50,000 | 0.5 |
| INFORMATION TERMINALS | 200,000 | 2.9 | 750,000 | 6.8 |
| IBM | 5,000,000 | 73.5 | 8,000,000 | 72.7 |
| K/TRONIX | | | 100,000 | 0.9 |
| MEMOREX | 500,000 | 7.4 | 750,000 | 6.8 |
| 3M | 200,000 | 2.9 | 300,000 | 2.7 |

Exhibit I. D

FLOPPY DISK DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|--------|---------|---------|---------|---------|-----------|-----------|-----------|
| Drives | | | | | | | | |
| Installed (1) | 52,000 | 140,000 | 315,000 | 550,000 | 840,000 | 1,185,000 | 1,575,000 | 1,990,000 |
| Shipped (2) | 37,500 | 92,000 | 180,000 | 240,000 | 300,000 | 350,000 | 400,000 | 425,000 |
| Diskettes | | | | | | | | |
| Installed (M) | 2.6 | 7.0 | 15.8 | 27.5 | 42.0 | 59.3 | 78.8 | 99.5 |
| Shipped (M) | 2.0 | 6.8 | 11.0 | 14.6 | 18.2 | 21.6 | 24.4 | 25.9 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

Mq Millions

Exhibit I. E

DISK CARTRIDGE DRIVE AND MEDIA

DISK CARTRIDGE DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|-------------------------|--------|-------------------------|
| BURROUGHS | 9480 | 1/74 |
| | 9481 | 1/74 |
| CAELUS (EM&M) | 203 | 5/72 |
| | 206 | 1/74 |
| | 303 | 1/72 |
| | 306 | 1/74 |
| | 312 | |
| CONTROL DATA CORP. | 9727H | 8/74 |
| DIABLO (Xerox) | 31 | 8/70 |
| | 33 | 8/70 |
| | 44 | 10/72 |
| | 43 | 3/72 |
| | 41X | 6/76 |
| DIGITAL EQUIPMENT CORP. | RK05 | 3/72 |
| HEWLETT-PACKARD | 7900A | 2/72 |
| | 7905A | 7/75 |
| IBM | 2310 | 11/65 |
| | 5444 | 1/70 |
| IOMEC (Data 100) | 300X | |
| | 340X | |
| MICRODATA | 910X | 12/73 |
| | 920X | |
| PERTEC | 33XX | |
| | 34XX | |
| VERMONT RESEARCH | 50XX | 5/75 |
| WANGCO (Perkin-Elmer) | F-1XXX | 12/73 |
| | F-22XX | 7/74 |
| | T-12XX | 12/73 |
| | T-2XXX | 12/75 |
| WESTERN DYNEX | 612X | 9/72 |
| | 622X | 1/73 |

DISK CARTRIDGE DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|-----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| BURROUGHS | 12,000 | 21.5 | 15,000 | 21.2 |
| CAELUS (EM&M) | 1,800 | 3.2 | 1,800 | 2.5 |
| CONTROL DATA | 3,000 | 5.4 | 4,000 | 5.7 |
| DIABLO (Xerox) | 13,200 | 23.6 | 15,800 | 22.3 |
| DEC | 6,000 | 10.7 | 8,000 | 11.3 |
| HEWLETT-PACKARD | 2,000 | 3.6 | 2,200 | 3.1 |
| IBM | 8,000 | 14.3 | 10,000 | 14.1 |
| IOMEC (Data 100) | 2,000 | 3.6 | 2,500 | 3.5 |
| MICRODATA | 500 | 0.9 | 1,800 | 2.5 |
| PERTEC | 4,000 | 7.2 | 5,000 | 7.1 |
| VERMONT RESEARCH | 100 | 0.2 | 200 | 0.3 |
| WANGCO (Perkin-Elmer) | 1,500 | 2.7 | 1,800 | 2.5 |
| WESTERN DYNEX | 1,800 | 3.2 | 2,600 | 3.7 |

DISK CARTRIDGE MEDIA MANUFACTURERS

| Company | Model | |
|----------------------|---------------|-------------|
| | Front Loading | Top Loading |
| ATHANA | 25XX11 | 50XXXX |
| BASF | 100 | 130 |
| CFI | 2315 | 5440 |
| CDC | 9846 | 9847 |
| EM&M (Caelus/Univac) | CMI | CMIII |
| IBM | 2315 | 5440 |
| MEMOREX | Mark III-F | Mark III-T |
| 3M | 901 | 903 |
| NASHUA | 4415 | 4440 |

DISK CARTRIDGES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| ATHANA | 18,000 | 3.0 | 24,000 | 3.7 |
| BASF | 85,000 | 14.2 | 90,000 | 13.8 |
| CFI | 90,000 | 15.0 | 130,000 | 20.0 |
| CDC | 48,000 | 8.0 | 59,000 | 9.1 |
| EM&M (Caelus/Univac) | 35,000 | 5.8 | 10,000 | 1.5 |
| IBM | 120,000 | 20.0 | 140,000 | 21.5 |
| MEMOREX | 32,000 | 5.3 | 22,000 | 3.4 |
| 3M | 80,000 | 13.3 | 85,000 | 13.1 |
| NASHUA | 92,000 | 15.3 | 90,000 | 13.8 |

DISK CARTRIDGE DRIVES
Worldwide Market

| Drives | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Shipments (2) | | | | | | | | |
| Total | 42,000 | 53,100 | 69,250 | 71,800 | 70,600 | 60,000 | 48,000 | 34,000 |
| Front | 27,200 | 34,400 | 44,000 | 47,000 | 46,000 | 37,800 | 31,800 | 22,100 |
| Top | 14,800 | 18,700 | 25,250 | 24,800 | 24,600 | 22,200 | 16,200 | 11,900 |
| Installed (1) | | | | | | | | |
| Total | 160,000 | 209,000 | 275,000 | 343,000 | 410,000 | 467,000 | 512,000 | 542,000 |
| Front | 86,000 | 118,000 | 160,000 | 205,000 | 249,000 | 285,000 | 315,000 | 335,000 |
| Top | 74,000 | 91,000 | 115,000 | 138,000 | 161,000 | 182,000 | 197,000 | 207,000 |
| <u>Cartridges</u> | | | | | | | | |
| Shipments | | | | | | | | |
| Total | 500,000 | 600,000 | 700,000 | 800,000 | 800,000 | 500,000 | 500,000 | 400,000 |
| Front | 250,000 | 300,000 | 300,000 | 400,000 | 500,000 | 300,000 | 400,000 | 300,000 |
| Top | 250,000 | 300,000 | 400,000 | 400,000 | 300,000 | 200,000 | 100,000 | 100,000 |
| Installed | | | | | | | | |
| Total (M) | 1.5 | 2.1 | 2.8 | 3.6 | 4.4 | 4.9 | 5.4 | 5.8 |
| Front (M) | .5 | .8 | 1.1 | 1.5 | 2.0 | 2.3 | 2.7 | 3.0 |
| Top (M) | 1.0 | 1.3 | 1.7 | 2.1 | 2.4 | 2.6 | 2.7 | 2.8 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

M = millions

Exhibit II.E

Revision A

DISK CARTRIDGE DRIVES
Worldwide Market

| Drives | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Installed (1) | 160,000 | 208,000 | 260,000 | 316,000 | 361,000 | 395,000 | 420,000 | 425,000 |
| Front | 86,000 | 117,700 | 151,200 | 187,700 | 214,800 | 230,800 | 240,700 | 245,000 |
| Top | 74,000 | 90,300 | 108,800 | 128,700 | 146,200 | 164,200 | 169,300 | 180,000 |
| Shipments (2) | 39,000 | 49,100 | 54,000 | 57,600 | 47,500 | 36,300 | 27,700 | 20,000 |
| Front | 25,700 | 32,000 | 34,500 | 37,300 | 28,300 | 17,200 | 11,200 | 8,000 |
| Top | 13,300 | 16,800 | 19,500 | 20,300 | 19,200 | 19,100 | 16,500 | 12,000 |
| Cartridges | | | | | | | | |
| Installed (M) | 1.5 | 2.1 | 2.75 | 3.2 | 3.7 | 4.0 | 4.3 | 4.5 |
| Front (M) | 0.5 | 0.8 | 1.15 | 1.4 | 1.7 | 1.9 | 2.1 | 2.2 |
| Top (M) | 1.0 | 1.3 | 1.6 | 1.8 | 2.0 | 2.1 | 2.2 | 2.3 |
| Shipments | 500,000 | 600,000 | 650,000 | 600,000 | 550,000 | 400,000 | 350,000 | 300,000 |
| Front | 250,000 | 300,000 | 300,000 | 300,000 | 300,000 | 225,000 | 180,000 | 150,000 |
| Top | 250,000 | 300,000 | 350,000 | 300,000 | 250,000 | 175,000 | 170,000 | 150,000 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

M Millions

Exhibit II. E

STORAGE MODULE DRIVE AND MEDIA

STORAGE MODULE DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|-------------------|---------|-------------------------|
| AMPEX | DM 940 | 10/75 |
| | DM 980 | 1/76 |
| BALL | BD 50 | 6/76 |
| CALCOMP | T25 | 8/75 |
| | T50 | 10/74 |
| | T80 | 8/75 |
| CONTROL DATA CORP | 9760 | 3/74 |
| | 9762 | 3/75 |
| | 9730 | |
| HEWLETT-PACKARD | 79XX | 11/76 |
| MEMOREX | 601 | 6/76 |
| UNIVAC | 8418-92 | 11/75 |
| | 8418-94 | 3/76 |

STORAGE MODULE DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|-----------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| AMPEX | 500 | 10.0 | 2,000 | 16.7 |
| BALL | 0 | 0 | 500 | 4.2 |
| CALCOMP | 2,300 | 46.0 | 4,000 | 33.3 |
| CDC | 2,000 | 40.0 | 3,800 | 31.7 |
| HEWLETT-PACKARD | 0 | 0 | 200 | 1.7 |
| MEMOREX | 0 | 0 | 500 | 4.2 |
| UNIVAC (ISS) | 200 | 4.0 | 1,000 | 8.3 |

STORAGE MODULE MEDIA MANUFACTURERS

| Company | Model |
|-----------------|--|
| ATHANA | 340024 340044 340046 350024 350044 |
| BASF | T50 T80 |
| CFI | Storage Module Trident |
| CONTROL DATA | 9876 9877 |
| MEMOREX | Mark VIII |
| 3M | 949/40 949/80 |
| NASHUA | 4460 |
| UNIVAC (Caelus) | F1216-02 |

**STORAGE MODULES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units**

| Company | Quantity | % | Quantity | % |
|---------|----------|------|----------|------|
| ATHANA | 0 | 0 | 5,000 | 13.5 |
| BASF | 1,000 | 5.6 | 1,000 | 2.7 |
| CFI | 3,000 | 16.7 | 5,000 | 13.5 |
| CDC | 9,000 | 50.0 | 16,000 | 43.2 |
| MEMOREX | 1,000 | 5.6 | 2,000 | 5.4 |
| 3M | 1,000 | 5.6 | 3,000 | 8.1 |
| NASHUA | 3,000 | 16.7 | 4,000 | 10.8 |
| UNIVAC | 0 | 0 | 1,000 | 2.7 |

STORAGE MODULE DISK DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|----------------|-------|--------|--------|---------|---------|---------|---------|---------|
| Drives | | | | | | | | |
| Installed (1) | 700 | 5,600 | 17,000 | 38,000 | 70,000 | 110,000 | 155,000 | 200,000 |
| Shipped (2) | 750 | 5,000 | 12,000 | 22,000 | 34,000 | 42,000 | 50,000 | 55,000 |
| Modules | | | | | | | | |
| Installed (1) | 1,500 | 16,000 | 51,000 | 106,000 | 182,000 | 275,000 | 372,000 | 440,000 |
| Shipped (2) | 2,000 | 18,000 | 37,000 | 60,000 | 80,000 | 100,000 | 105,000 | 75,000 |

- (1) Installed as of the end of the year
- (2) Cumulative shipments during the year

Exhibit III. E

DATA MODULE DRIVE AND MEDIA

DATA MODULE DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|------------------------|-------|-------------------------|
| CONTROL DATA CORP. | 9770 | 6/76 |
| IBM | 3340 | 6/73 |
| MEMOREX (1) | 3763 | 6/76 |
| NIPPON PERIPHERAL LTD. | NP20 | 6/75 |

(1) Memorex is a licensee of NPL which is a joint venture of Fujitsu and Hitachi

**DATA MODULE DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units**

| Company | 1975 | | 1976 | |
|---------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| CDC | 0 | 0 | 200 | 0.8 |
| IBM | 19,000 | 95.0 | 23,000 | 88.5 |
| MEMOREX | 0 | 0 | 300 | 1.1 |
| NPL | 1,000 | 5.0 | 1,500 | 5.8 |

DATA MODULES MEDIA MANUFACTURERS

| Company | Model |
|---------------|--------------------|
| ATHANA | None |
| BASF | 1335/1370 |
| CDC | 9889/9892 |
| CFI | None |
| EM&M (Caelus) | None |
| IBM | 3348-35 3348-70 |
| 3M | 948-35 948-70 |
| MEMOREX | DM35 DM70 |
| NASHUA | 4438-35 4438-70 |

DATA MODULES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|---------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| BASF | 1,800 | 6.0 | 2,000 | 5.0 |
| CDC | 2,000 | 6.7 | 3,000 | 7.5 |
| IBM | 19,900 | 66.3 | 27,000 | 67.5 |
| 3M | 2,000 | 6.7 | 3,000 | 7.5 |
| MEMOREX | 2,500 | 8.3 | 3,000 | 7.5 |
| NASHUA | 1,800 | 6.0 | 2,000 | 5.0 |

DATA MODULE DISK DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|--------|--------|---------|---------|---------|---------|---------|---------|
| Drives | | | | | | | | |
| Installed (1) | 23,000 | 42,700 | 60,000 | 96,000 | 130,000 | 170,000 | 215,000 | 250,000 |
| Shipments (2) | 13,600 | 20,000 | 26,000 | 32,000 | 38,000 | 45,000 | 50,000 | 42,000 |
| Modules | | | | | | | | |
| Installed (1) | 34,500 | 64,000 | 102,000 | 144,000 | 195,000 | 255,000 | 322,000 | 375,000 |
| Shipped (2) | 20,000 | 30,000 | 40,000 | 44,000 | 55,000 | 65,000 | 70,000 | 55,000 |

- (1) Installed as of the end of the year
- (2) Cumulative shipments during the year

Exhibit IV. E

DISK PACK (2314) DRIVE AND MEDIA

DISK PACK (2314) DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|--------------------|-------|-------------------------------|
| AMPEX | 323 | 1/71 |
| | 324 | 6/71 |
| CALCOMP | CD22 | 3/70 |
| | CD44 | 6/71 |
| CONTROL DATA CORP. | 9746 | 6/74 |
| | 9747 | 12/74 |
| IBM | 2314/ | 4/66 |
| | 2319 | |
| ISS/UNIVAC | 715 | 4/72 |
| MEMOREX | 660 | 9/69 |
| POTTER | 314 | 6/70 |

DISK PACK (2314) DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| AMPEX | 1,000 | 16.7 | 500 | 12.5 |
| CALCOMP | 2,000 | 33.3 | 2,000 | 50.0 |
| CDC | 2,000 | 33.3 | 1,000 | 25.0 |
| IBM | 0 | 0 | 0 | 0 |
| ISS/UNIVAC | 1,000 | 16.7 | 500 | 12.5 |
| MEMOREX | 0 | 0 | 0 | 0 |
| POTTER | 0 | 0 | 0 | 0 |

DISK PACK (2314) MEDIA MANUFACTURERS

| Company | Model |
|---------------|---------|
| ATHANA | 2601XX |
| BASF | 1100 |
| CDC | 9869 |
| CFI | 2316 |
| EM&M (Caelus) | CMXI |
| IBM | 2316 |
| 3M | 911 |
| MEMOREX | Mark VI |
| NASHUA | 4411 |

DISK PACKS (2314)
 ESTIMATED MARKET SHARE
 Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| ATHANA | 8,000 | 12.3 | 8,000 | 13.3 |
| BASF | 10,000 | 15.4 | 9,000 | 15.0 |
| CDC | 15,000 | 23.1 | 14,000 | 23.3 |
| CFI | 9,000 | 13.8 | 9,000 | 15.0 |
| EM&M (Caelus/Univac) | 1,000 | 1.5 | 0 | 0 |
| IBM | 0 | 0 | 0 | 0 |
| 3M | 11,000 | 16.9 | 10,000 | 16.7 |
| MEMOREX | 6,000 | 9.2 | 5,000 | 8.3 |
| NASHUA | 5,000 | 7.7 | 5,000 | 8.3 |

DISK PACK (2314) DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Drives | | | | | | | | |
| Installed (1) | 131,800 | 135,000 | 130,000 | 122,000 | 110,000 | 90,000 | 70,000 | 65,000 |
| Shipments (2) | 9,000 | 6,000 | 4,000 | 2,000 | | | | |
| Packs | | | | | | | | |
| Installed | 494,000 | 505,000 | 494,000 | 480,000 | 440,000 | 427,000 | 308,000 | 266,500 |
| Shipped | 58,000 | 65,000 | 60,000 | 54,000 | 48,000 | 40,000 | 25,000 | 15,000 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

DISK PACK (3330-1) DRIVE AND MEDIA

DISK PACK (3330-1) DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|--------------------|--------|-------------------------|
| AMPEX | DM9100 | 11/75 |
| CALCOMP | 1030 | 6/72 |
| CONTROL DATA CORP. | 9756 | 2/73 |
| IBM | 3330-1 | 8/71 |
| ISS/UNIVAC | 733-10 | 4/74 |
| MEMOREX | 670-2 | 10/72 |

DISK PACK (3330-1) DRIVES
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|--------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| AMPEX | 600 | 8.7 | 200 | 3.7 |
| CALCOMP | 600 | 8.7 | 200 | 3.7 |
| CONTROL DATA CORP. | 1,000 | 14.5 | 1,000 | 18.5 |
| IBM | 1,000 | 14.5 | | |
| ISS/UNIVAC | 2,700 | 39.1 | 3,000 | 55.6 |
| MEMOREX | 1,000 | 14.5 | 1,000 | 18.5 |

Exhibit VI. B

DISK PACK (3330-1) MEDIA MANUFACTURERS

| Company | Model |
|---------|----------|
| ATHANA | 360024 |
| BASF | 1236 |
| CDC | 9879 |
| CFI | 3336-1 |
| EM&M | CMCX |
| IBM | 3336-1 |
| 3M | 936-1 |
| MEMOREX | Mark X/L |
| NASHUA | 4436 |

DISK PACKS (3330-1)
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| ATHANA | 800 | 3.3 | 900 | 4.8 |
| BASF | 2,050 | 8.5 | 1,000 | 5.3 |
| CDC | 3,500 | 14.5 | 3,000 | 15.9 |
| CFI | 2,250 | 9.3 | 2,000 | 10.6 |
| EM&M (Caelus/Univac) | 850 | 3.5 | 1,500 | 7.9 |
| IBM | 4,000 | 16.6 | 1,000 | 5.3 |
| 3M | 4,000 | 16.6 | 3,500 | 18.5 |
| MEMOREX | 4,000 | 16.6 | 3,500 | 18.5 |
| NASHUA | 2,700 | 11.2 | 2,500 | 13.2 |

DISK PACK (3330-1) DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|---------|---------|---------|---------|---------|---------|--------|--------|
| Drives | | | | | | | | |
| Installed (1) | 70,500 | 67,500 | 66,000 | 65,000 | 64,000 | 59,000 | 55,000 | 50,000 |
| Shipments (2) | 4,800 | 6,900 | 5,400 | 4,200 | 2,200 | | | |
| Packs | | | | | | | | |
| Installed (1) | 126,900 | 121,500 | 118,800 | 117,000 | 115,200 | 106,200 | 99,000 | 90,000 |
| Shipments (2) | 36,000 | 24,150 | 18,900 | 14,700 | 7,700 | 3,000 | | |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

DISK PACK (3330-11) DRIVE AND MEDIA

DISK PACK (3330-11) DRIVE MANUFACTURERS

| Company | Model | First Customer Shipment |
|--------------------|---------|-------------------------|
| AMPEX | DM9200 | 11/75 |
| CALCOMP | T200 | 5/76 |
| CONTROL DATA CORP. | 9780 | 3/74 |
| IBM | 3330-11 | 1/74 |
| ISS/UNIVAC | 733-11 | 4/75 |
| MEMOREX | 3675 | 10/74 |

DISK PACK (3330-11) DRIVES
 ESTIMATED MARKET SHARES
 Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|--------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| AMPEX | 200 | 1.4 | 400 | 3.0 |
| CALCOMP | 600 | 4.3 | 1,000 | 7.4 |
| CONTROL DATA CORP. | 1,400 | 10.0 | 2,000 | 14.8 |
| IBM | 6,900 | 49.3 | 2,000 | 14.8 |
| ISS/UNIVAC | 4,300 | 30.7 | 5,200 | 38.5 |
| MEMOREX | 1,000 | 7.1 | 2,900 | 21.5 |

DISK PACK (3330-11) MEDIA MANUFACTURERS

| Company | Model |
|---------|---------|
| ATHANA | 360044 |
| BASF | 1246 |
| CDC | 9882 |
| CFI | 3336-11 |
| EM&M | CMCX-DD |
| IBM | 3336-11 |
| 3M | 936-11 |
| MEMOREX | Mark XI |
| NASHUA | 4436-DD |

DISK PACKS (3330-11)
ESTIMATED MARKET SHARE
Worldwide Shipments in Units

| Company | 1975 | | 1976 | |
|----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| ATHANA | 800 | 3.8 | 1,000 | 4.9 |
| BASF | 1,800 | 8.6 | 2,000 | 9.7 |
| CDC | 2,400 | 11.4 | 3,000 | 14.6 |
| CFI | 1,000 | 4.8 | 1,000 | 4.9 |
| EM&M (Caelus/Univac) | 1,000 | 4.8 | 1,000 | 4.9 |
| IBM | 5,000 | 23.8 | 2,000 | 9.7 |
| 3M | 3,500 | 16.7 | 4,000 | 19.5 |
| MEMOREX | 3,000 | 14.3 | 3,500 | 17.1 |
| NASHUA | 2,500 | 11.9 | 3,000 | 14.6 |

DISK PACK (3330-11) DRIVES
Worldwide Market

| | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Drives | | | | | | | | |
| Installed (1) | 9,100 | 22,900 | 36,200 | 52,300 | 57,500 | 57,000 | 56,000 | 50,000 |
| Shipments (2) | 8,500 | 14,000 | 13,500 | 16,000 | 15,300 | 12,000 | 10,000 | 8,000 |
| Packs | | | | | | | | |
| Installed (1) | 10,900 | 27,500 | 43,500 | 62,750 | 69,000 | 68,400 | 67,200 | 60,000 |
| Shipments | 12,750 | 21,000 | 20,250 | 24,000 | 21,000 | 15,600 | 12,000 | 9,600 |

- (1) Installed as of the end of the year
- (2) Cumulative shipments during the year

NON-REMOVABLE MEDIA DISK DRIVES
WITH STORAGE CAPACITIES LESS
THAN 200 MEGABYTES

NON-REMOVABLE MEDIA DISK DRIVES
STORAGE CAPACITY LESS THAN 200 MEGABYTES

| Company | Model | First Customer Shipment |
|-----------------------|----------------|-------------------------|
| CAELUS (EM&M) | 103 106 | 1/73 |
| CONTROL DATA CORP. | 9414A 9414B | 9/76 9/76 |
| DIABLO (Xerox) | 20 | |
| IBM | 62FV 5448 | 3/77 |
| MICRODATA | Reflex | 9/76 |
| PERTEC | D1460 D1660 | 6/76 6/76 |
| WANGCO (Perkin-Elmer) | N Series | |

NON-REMOVABLE MEDIA DISK DRIVES
STORAGE CAPACITY LESS THAN 200 MEGABYTES

| Company | 1975 | | 1976 | |
|-----------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| CAELUS (EM&M) | 1,000 | 11.1 | 1,000 | 6.7 |
| CDC | 0 | 0 | 200 | 1.3 |
| DIABLO | 1,000 | 11.1 | 1,000 | 6.7 |
| IBM | 6,000 | 66.7 | 10,000 | 66.7 |
| MICRODATA | 0 | 0 | 200 | 1.3 |
| PERTEC | 500 | 5.5 | 1,600 | 10.7 |
| WANGCO (Perkin-Elmer) | 500 | 5.5 | 1,000 | 6.7 |

NON-REMOVABLE MEDIA DISK DRIVES
 STORAGE CAPACITY LESS THAN 200 MEGABYTES
 Worldwide Market

| Drives | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|------|-------|--------|--------|---------|---------|---------|---------|
| Installed (1) | 700 | 9,700 | 24,500 | 60,000 | 110,000 | 170,000 | 245,000 | 330,000 |
| Shipped (2) | 530 | 9,000 | 15,000 | 36,000 | 50,000 | 65,000 | 78,000 | 90,000 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

NON-REMOVABLE MEDIA DISK DRIVES
WITH STORAGE CAPACITIES GREATER THAN
200 MEGABYTES

NON-REMOVABLE MEDIA DISK DRIVES
STORAGE CAPACITIES GREATER THAN 200 MEGABYTES

| Company | Model | First Customer Shipment |
|-------------------------------|---------|-------------------------|
| AMPEX (1) | DM 300 | 5/72 |
| CALCOMP (1) | T 300 | 6/76 |
| CONTROL DATA CORP. | 819 | |
| | 821 | |
| | 9744 | |
| HONEYWELL | 261 | |
| | 262 | |
| IBM | 3344 | 6/76 |
| | 3350 | 4/76 |
| STORAGE TECHNOLOGY | 8400 | 12/75 |
| | 8800 | 12/75 |
| UNIVAC/ISS (Data Products) | 7330-21 | 11/76 |
| | 8460 | |

(1) Removable Pack

NON-REMOVABLE MEDIA DISK DRIVES
 STORAGE CAPACITIES GREATER THAN 200 MEGABYTES
 Estimated Market Share

| Company | 1975 | | 1976 | |
|--------------------|----------|------|----------|------|
| | Quantity | % | Quantity | % |
| AMPEX | | | 200 | 4.0 |
| CALCOMP | | | 300 | 6.0 |
| CONTROL DATA CORP. | 70 | 56.0 | 930 | 18.6 |
| HONEYWELL | 25 | 20.0 | 20 | 0.4 |
| IBM | | | 3,000 | 60.0 |
| STORAGE TECHNOLOGY | 10 | 8.0 | 500 | 10.0 |
| UNIVAC/ISS | 20 | 16.0 | 50 | 1.0 |

NON-REMOVABLE MEDIA DISK DRIVES
STORAGE CAPACITIES GREATER THAN 200 MEGABYTES
Worldwide Market

| Drives | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---------------|------|------|-------|--------|--------|--------|--------|--------|
| Installed (1) | 10 | 135 | 5,135 | 15,135 | 28,500 | 43,000 | 58,000 | 75,000 |
| Shipped (2) | 10 | 125 | 5,000 | 10,000 | 13,500 | 15,000 | 16,000 | 18,000 |

(1) Installed as of the end of the year

(2) Cumulative shipments during the year

DISK DIRECTORY

DISK DIRECTORY

AMPEX CORPORATION

401 Broadway
Redwood City, California 94063
(415) 367-2011

ATHANA

1815 Mullin Avenue
Torrance, California 95051
(213) 775-3741

BASF SYSTEMS INC.

Crosby Drive
Bedford, Massachusetts 01730
(617) 271-4000

BALL COMPUTER PRODUCTS INC.

680 East Arques Avenue
Sunnyvale, California 94086
(408) 733-6700

BURROUGHS CORPORATION

One Burroughs Place
Detroit, Michigan 48232
(313) 972-7000

Peripheral Products Group
5411 North Lindero Canyon Road
Westlake Village, CA 91361
(213) 889-1010

CALIFORNIA COMPUTER PRODUCTS

(Calcomp)
2411 West La Palma Avenue
Anaheim, California 92801
(714) 821-2011

CONTROL DATA CORPORATION

8100 34th Avenue South
Bloomington, Minnesota 55400
(612) 853-8100

Business Products Group
11615 "I" Street
Omaha, Nebraska 68137
(402) 333-0850

CFI MEMORIES, INC.

305 Crescent Way
Anaheim, California 92801
(714) 776-8571

DIABLO SYSTEMS INC. (Xerox)
24500 Industrial Boulevard
Hayward, California 94545
(415) 783-3910

ELECTRONIC MEMORIES & MAGNETICS
CORP. (EM&M)
1880 Century Park West
Los Angeles, California 90067
(213) 556-2323

Caelus
967 Mabury Road
San Jose, California 95133
(408) 298-7080

HEWLETT-PACKARD COMPANY
1501 Page Mill Road
Palo Alto, California 94304
(415) 493-1501

INNOVEX CORPORATION
75 Wiggins Avenue
Bedford, Massachusetts 01730
(617) 275-2110

INTERNATIONAL BUSINESS MACHINES
(IBM)
Route 22
Armonk, New York 10504

General Products Division
Monterey & Cottle Roads
San Jose, California 95114
(408) 227-7100

INFORMATION STORAGE SYSTEMS (ISS)
(Univac)
10435 North Tantau Avenue
Cupertino, California 95014
(408) 257-6220

IOMEC (Data 100)
3300 Scott Boulevard
Santa Clara, California 95050
(408) 246-2950

MICRODATA CORP.
17481 Red Hill Avenue
Irvine, California 92705
(714) 540-6730

MINNESOTA MINING AND MANUFACTURING (3M)
3 M Center
St. Paul, Minnesota 55101
(612) 733-1110

MEMOREX CORP.
San Tomas at Central Expressway
Santa Clara, California 95052
(408) 987-1000

Magnetic Media Division
1200 Memorex Drive
Santa Clara, California 95052
(408) 987-1000

NASHUA CORP.
Computer Products Division
44 Franklin Street
Nashua, New Hampshire 03060
(603) 880-2323

ORBIS SYSTEMS INC.
(Wangco/Perkin-Elmer)
14251 Franklin Avenue
Tustin, California 92680
(714) 838-1491

OKIDATA CORPORATION
111 Gaither Drive
Moorestown, New Jersey 08057
(609) 235-2600

PER SCI INCORPORATED
4943 McConnell Avenue, Suite J
Los Angeles, California 90066
(213) 821-5545

PERTEC CORPORATION
101 Continental Blvd., Suite 435
El Segundo, California 90245
(213) 640-1540

Peripheral Equipment Division
9600 Irondale Avenue
Chatsworth, California 91311
(213) 882-0030

POTTER INSTRUMENT CO., INC.
151 Sunnyside Blvd.
Plainview, New York 11745
(516) 681-3200

SHUGART ASSOCIATES
435 Indio Way
Sunnyvale, California 94086
(408) 733-0100

SYCOR INC.
100 Phoenix Drive
Ann Arbor, Michigan 48104
(313) 971-0900

TRI-DATA CORPORATION
800 Maude Avenue
Mountain View, California 94043
(415) 969-3700

VERMONT RESEARCH CORPORATION
Precision Park
North Springfield, Vermont 05150
(802) 866-2256

WANGCO INCORPORATED (Perkin-
Elmer)
5404 Jandy Place
Los Angeles, California 90066
(213) 390-8081

WESTERN DYNEX CORPORATION
2910 North 30th Avenue
Phoenix, Arizona 85017
(602) 272-1323