



# SYSTEMS CORPORATION

## COMPANY BACKGROUNDER

### THE COMPANY

GRiD Systems Corporation was incorporated in 1979 to design, manufacture and market laptop computer systems to professionals who work outside the office. GRiD pioneered the strategy of directly selling and supporting configurable field systems.

In April 1982, the company introduced the industry's first true laptop, the GRiD Compass Computer, a 16-bit, 10-pound laptop small enough to fit into a briefcase. GRiD also achieved a number of other industry firsts.

- \* First laptop to use non-volatile bubble memory.
- \* First laptop to contain a built-in 1200 baud modem.
- \* First portable to be housed in a rugged magnesium case.
- \* First portable to meet government TEMPEST specs.
- \* First integrated application software set for laptops.
- \* First server for remote access and remote distribution.
- \* First light-emitting electroluminescent display.

With these innovative and leading-edge products GRiD developed a large following in the corporate and government markets. GRiD was one of several companies that pioneered laptop computer technology in the early 1980s. Of that group, which included Gavilan Computer Corp. and Osborne Computer Corp., GRiD is the only company to have survived and risen to become a leader in the field. GRiD's product line was extended to include desktop and hand-held computers, networks, cellular phones and related products.

In March, 1989 GRiD introduced the Intel 80286-based GRiD 286ts and GRiD 386mc, an Intel 80386-based computer with Micro Channel architecture. With the introduction of these products, GRiD expanded the definition of field systems to include applications for office-based users who complement and support the field. Now a field system will include not only GRiD laptops but also networking solutions and GRiD desktops and applications software.

GRiD's annual revenues have increased significantly. Revenues were \$130 million for 1989 and increased by 47 percent to \$190 million during the 1990 fiscal year. Revenue was \$79 million for fiscal 1988 and \$65 million for fiscal 1987. GRiD generates most of its revenue through sales to Fortune 1,000 companies. About a sixth of the company's revenue is derived from sales to federal agencies. International sales also account for a significant percent of revenues, while sales through VARs (value added resellers) are about 10 percent a year.

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In July, 1987, the company moved its corporate offices, research and development units and manufacturing facilities from Mountain View, CA, to a 97,000-square-foot building at 47211 Lakeview Blvd. in Fremont, CA. GRiD also moved the GRiD Resource Center and its repair operations to 46600 Landing Parkway in Fremont, a short distance from corporate headquarters.

The field systems market — GRiD's strategic focus — is a principal market for battery-powered laptop computers. Dataquest, an industry market research firm, said that 1989 worldwide sales of true portable computers (battery-operated, notebook and handheld) were \$7.4 billion. It estimated that sales will increase to \$10.5 billion in 1990 and reach \$29 billion by 1992.

### **Tandy Acquires GRiD**

On July 1, 1988, Tandy Corp., Fort Worth, TX acquired GRiD. The company is now a wholly-owned subsidiary of Tandy, a leading manufacturer and distributor of consumer electronics and computers.

Tandy acquired GRiD in a move which extended its distribution channels and added to its reputation for high-quality products. The Tandy/GRiD team promised increased opportunities for both firms, according to John Roach, Tandy chairman and chief executive officer.

"This new division enhances our product development capability in laptop computers, opens new opportunities in the government market and provides an alternative marketing channel to the corporate user," said Roach. "At the same time, GRiD, which continues to market under its own name, benefits from our materials sourcing, nationwide service, increased breadth of product offering and from our financial strength."

Tandy, headquartered in Fort Worth, TX, reports revenues in excess of \$4 billion annually. Tandy is the largest retail electronics chain in the world, with more than 7000 Radio Shack stores and nearly 300 Tandy Computer Centers.

In February, 1989, GRiD announced it would open more than 50 GRiD Systems Centers (formerly Radio Shack Computer Centers) in 53 major metropolitan areas. The new centers feature product demonstrations, seminars, training and sales. With the addition of about 400 former Tandy employees, GRiD's total employment is approximately 1,100.



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### SALES AND MARKETING

GRiD's marketing strategy is to target large corporations, federal and state government organizations and selected universities and colleges in our market. The company sells primarily through its own direct sales and support organizations. GRiD pioneered laptop sales through the VAR (value added reseller) channel and has expanded into the OEM (original equipment manufacturer) channel through agreements with major international computer firms.

About half of all Fortune 500 companies use GRiD computers. GRiD has a significant customer base in the field systems market due to its strategy of providing a solution to customers' application needs, along with high levels of customer support. GRiD customers include:

\* Automotive

- General Motors Corp.
- Chrysler Corp.
- Ford Motor Co

\* Pharmaceutical

- Ciba-Geigy
- Squibb Corp.
- Syntex Laboratories

\* Apparel

- Evan Picone Hosiery
- Levi Strauss
- London Fog

\* Chemical

- Hercules
- Hoechst-Celanese
- Dow Corning Corp.

\* Energy

- Shell Oil Co.
- Mobil Oil Corp.
- Halliburton

\* Insurance

- Aetna Life & Casualty
- The Hartford Insurance
- The Travelers Insurance

About one-sixth of GRiD's revenue is generated by civil and military government agencies. Revenues from federal sales are expected to grow significantly due to major commitments from several large agencies. GRiD computers are being used by the Postal Service, Census Bureau, Internal Revenue Service, Customs Service, Federal Aviation Agency, Forest Service, Secret Service, National Aeronautics and Space Administration, Drug Enforcement Administration and several national laboratories.

GRiD laptops are in hundreds of post offices, in the hands of fire crews battling blazes in national forests, aboard space shuttle flights, on scientific tests near the South Pole and in radar facilities manned by the Federal Aviation Agency. GRiD strengthened its position in the government market in 1988 by introducing the first battery-powered portable computers capable of running the UNIX operating system. Many federal agencies use UNIX and want to take their applications into the field.



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### Field Systems

The needs of the field systems market differ sharply from those of the general portable computing arena. Field professionals such as sales representatives, engineers, service technicians and auditors often require specialized hardware, customized applications software and extensive communications links to local, regional and headquarters offices. The task of analyzing, designing and successfully implementing field systems often requires considerable support. Unlike some of its competitors, GRiD recognizes the needs of field professionals and provides products and services to satisfy those needs. As one computer industry analyst put it, "GRiD offers a lot more than a microcomputer. It provides a complete package, including after-sales service, while most other laptop vendors give you a box and a smile."

### Hardware Costs Low

A study by the Gartner Group, a market research firm, concluded that equipment cost is only a small portion of the total cost of field automation. Gartner found that equipment costs amount to only 28 percent of the total cost of field automation projects. Operating costs totalled 55 percent, administrative costs 9 percent and support costs 8 percent.

Companies that implement field systems find that they quickly pay for themselves. One medium-sized manufacturer in the apparel industry, for example, said it spends about \$3 million a year for raw material that is never used because of fast-changing trends in the apparel industry. The company said by equipping its sales representatives with GRiD laptops, and linking them directly with sales, marketing and manufacturing at corporate headquarters, it expects to reduce that loss by 80 percent, enough to pay for its laptops in one year.

Mark Stuart, president of Evan-Picone Hosiery, said he believes that companies implementing field systems are clearly gaining "a competitive edge" in the industry. "There is no question," he added, "that the laptop technology and software is here for our industry and it can be implemented with relative simplicity."

GRiD enjoys significant presence in the pharmaceuticals industry where many companies, including Ciba-Geigy Inc., have equipped their sales forces with field systems. William Adler, executive director of headquarters sales for Ciba-Geigy, said that, "Financial benefits derived from usage of the portable systems likely will be signifi-



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cant. Ciba-Geigy believes that for every 1 percent increase in a sales rep's effectiveness, its revenue will jump by \$6.7 million annually." Ciba-Geigy bought more than 1,000 GRiD laptops for its sales representatives.

In the insurance industry, Aetna Life and Casualty engineers use GRiD laptops to conduct mechanized surveys on commercial property accounts. Using CAD/CAM (computer-aided design/computer-aided manufacturing) software, engineers gather critical on-site information and send it electronically to underwriters. With that information, underwriters decide on the insurability of buildings. The laptops have shortened the process of filing building surveys from four weeks to a day or two. In addition to saving time and money, the company has found that its reports are more accurate.

Oil and gas exploration companies use GRiD laptops to quickly collect vital information about potential new drilling sites. Engineers who formerly used office minicomputers to perform critical calculations now do them on-site with speed and precision.

#### **Expanding VAR Program**

GRiD reaches many customers in various markets through its expanding VAR (value-added reseller) program. The program includes numerous strategic, industry-specific resellers. GRiD expects VAR sales, which are approximately 10 percent of revenues, to grow rapidly. The company has already achieved significant VAR penetration into such diverse markets as consumer products, food distribution, chemicals, aviation, tool manufacturing and insurance. The objective of GRiD's VAR/OEM program is to have resellers address markets as partners, working with GRiD's direct sales representatives.

Customer support before and after a sale is equally important to GRiD because customers for its products are primarily office workers, sales representatives, field engineers, auditors and other mobile professionals. GRiD engineers offer technical assistance to VARs and end users from sales offices in the United States, Canada, the United Kingdom and Germany.

In addition, under terms of OEM agreements with companies such as Sagem of France and Netherlands-based Philips N.V., GRiD computers are sold overseas under the labels of a growing list of major international electronics firms. Relationships with international OEMs, distributors and systems integrators are handled by the International Accounts Program.

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### **PRODUCTS, SERVICES AND MANUFACTURING**

GRiD's fully-integrated computing systems are designed to support the information management and analysis needs of field and office professionals. These systems are built on an extensive range of high-performance, battery-powered, industry-standard laptop computers, pen-and-display handheld computers and advanced desktop computers, software, peripherals and networks. GRiD laptops are well known for their rugged black magnesium cases that protect the computers. GRiD's product line is targeted to field users who demand high levels of performance, portability, durability and full systems capability. GRiD customers are typically corporate, governmental or university purchasers who are more concerned with value and configurability than with buying commodity products.

#### **GRiDCASE 1550sx**

The GRiDCASE 1550sx, introduced in August, 1990, is the first PC-compatible laptop computer to incorporate a built-in pointing device. The Isopoint pointing device in the battery-powered GRiDCASE 1550sx enables mobile users to take full advantage of Windows and other productivity-enhancing graphical software without compromising portability. Based on a 20MHz, Intel 80386SX microprocessor, the 12-pound Model 1550sx comes standard with Windows 3.0 and is available with a 16ms, 120 MB hard disk drive — the fastest, largest capacity drive available on a laptop. It has a 640x480 pixel, high-contrast black/white supertwist backlit VGA display. A microprocessor-controlled power management system significantly improves battery life. The GRiDCASE 1550sx comes standard with a 20MHz, Intel 80386SX processor, 2MB of RAM, 60MB hard disk drive, a 3.5-inch 1.4MB floppy disk drive, AT-compatible keyboard and VGA backlit screen.

#### **GRiD 1810**

The GRiD 1810, introduced in June, 1990, continued GRiD's string of technology milestones. The 1810 is the first notebook-size computer with a removable hard disk drive. The six-pound laptop enables users to easily exchange data between laptops, and between laptops and MS-DOS compatible desktop computers. The GRiD 1810 features a 10-inch diagonal EGA display and full-size 81-key keyboard with large, standard typewriter size keys. It comes standard with 20MB hard drive, 1MB of RAM — expandable to 2MB, standby power management features, and MS-DOS 3.3 and LapLink software.

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### **GRiD 1450sx**

The GRiD 1450sx laptop was introduced in February, 1990 as the lightest 386SX-based, battery-powered laptop on the market. The 7.9-pound 1450sx has a large, high contrast VGA display with wide viewing angles and advanced power saving features for longer battery life. The standard configuration includes a 16MHz 80386SX main processor, 1MB of RAM — expandable to 5MB, 10" VGA high-contrast backlit LCD display, 1.4MB 3.5-inch floppy disk drive and 20MB hard disk. Options include a 40MB hard disk drive and MNP level 5 2400 baud modem.

### **GRiDPAD**

In September, 1989, GRiD introduced its first handheld computer, GRiDPAD. Weighing only 4.5 pounds, GRiDPAD is fully IBM-PC compatible and can recognize printed handwriting entered with an attached electronic pen. GRiDPAD is designed for workers who enter data and fill out paper forms while standing or walking. Applications include retail distribution, law enforcement and health care. GRiDPAD can also be used as a desktop computer by attaching a standard keyboard and optional 20MB hard disk expansion unit.

### **GRiDCASE 1500 Series**

GRiD's leading laptop line, the GRiDCASE 1500 Series, currently includes two models (a third model will be introduced shortly):

- \* GRiDCASE 1530
- \* GRiDCASE 1535 EXP
- \* GRiDCASE 1550sx

The battery-powered 1530, introduced in October, 1987, weigh 12 pounds and is based on an 80386 microprocessor. The GRiDCASE 1535 EXP, based on the same microprocessor, was introduced in October, 1988.



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Standard features of the GRiDCASE 1530 include 1MB of system RAM, two ROM slots (up to 512KB capacity ROM), two 1.4MB 3.5" floppy disk drives, a 10" diagonal 640 x 400 backlit transfective (yellow) LCD screen, expansion cartridge bus and external video, peripheral, RS-232, parallel, keyboard/keypad ports. Optional features include up to 8MB of RAM; light-emitting gas plasma screen; backlit, transmissive LCD screen (blue) with CGA or VGA graphics; drive configurations of one floppy and one 20MB, 40MB or 100MB hard drive; 80387 math coprocessor; and internal 2400 baud Hayes-compatible and MNP modems.

The GRiDCASE 1535 EXP is designed primarily to meet the needs of field-based engineers, scientists and technicians who require a high-performance portable computer with standard and specialized expansion card slots. A detachable expansion tray holds one AT-compatible and one XT-compatible card. With the expansion tray attached, the GRiDCASE 1535 EXP weighs 16 pounds. As with all GRiD laptops, the GRiDCASE 1535 EXP is capable of operating on battery power when AC power is unavailable.

### **GRIDLITE XL**

The GRIDLITE XL offers reduced price and weight over the higher-end GRiDCASE 1500 series. It is designed for business and government professionals who require portability and battery-powered operation more than performance, such as sales representatives and field auditors. It weighs 9.5 pounds and utilizes the Harris 80C86 chip. The standard configuration is 128KB of system RAM, one 3.5" 1.4MB floppy drive, and a 10" diagonal reflective black on white LCD screen. Optional features include up to 1MB of ROM, up to 1MB extended RAM, a 20MB hard drive and an internal 2400 baud modem.

### **TEMPEST**

To meet TEMPEST communications security requirements of U.S. government and military agencies, GRiD offers the TEMPEST GRiDCASE 1537. Based on the 80386SX microprocessor, the 1537 includes 4MB of system RAM, expandable to 8MB, a removable 40MB hard drive and a 3.5-inch, 1.4MB floppy drive.





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### GRiD DESKTOP COMPUTERS

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In March, 1989, GRiD introduced its first desktop computers:

- \* GRiD 386mc
- \* GRiD 386isx
- \* GRiD 286is.

In November, 1989, GRiD significantly expanded its desktop line with the introduction of six models, two of them based on the Extended Industry Standard Architecture (EISA). All of them are based on a modular, upgradeable platform featuring a wide range of options in bus architecture, operating systems, storage and network connectivity.

- \* GRiD 486ei-25
- \* GRiD 386ei-33
- \* GRiD 386is-16
- \* GRiD 386is-20
- \* GRiD 386is-25
- \* GRiD 386is-33

In February, 1990, GRiD unveiled two small footprint computers. Both the 16MHz GRiD 386sx-MFP (MicroFootprint) and 10MHz GRiD 286-MFP are powerful systems utilizing the industry standard AT bus.

- \* GRiD 286-MFP
- \* GRiD 386sx-MFP

GRiD 486ei-25 is the flagship of the GRiD desktop line, based on the Intel 80486 microprocessor operating at 25MHz and EISA bus architecture. Standard features include 2MB of RAM (expandable to 64MB), an internal cache of 8KB, integrated floating point processor and six EISA expansion card slots.

The second EISA desktop, the GRiD 386ei-33 is based on the Intel 80386 microprocessor and includes 2MB of RAM (expandable to 64MB) and 32KB of cache memory as standard.

The GRiD 386is series is based on Industry Standard Architecture (ISA) and the Intel



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80386 operating at clock speeds ranging from 16MHz to 33MHz. Standard features include 1MB of RAM (expandable to 16MB), 32KB memory cache and six AT expansion card slots.

GRiD 386mc offers both IBM Micro Channel bus architecture and a memory cache controller for top performance. With a 20MHz 80386 processor combined with the memory cache controller, the 386mc can achieve zero wait state performance for processor intensive compilers and CAD/CAM applications. In addition, the GRiD 386mc features 1MB of 32-bit RAM (expandable to 16MB), two dedicated high-performance memory slots, VGA graphics and 3.5-inch, 1.4MB floppy disk drive.

GRiD 386isx is GRiD's mid-range desktop, featuring a high degree of price/performance. It is based on the Intel 80386SX microprocessor running at a clock speed of 16MHz. The chip's 32-bit architecture supports multi-tasking operations, including MS OS/2. The GRiD 386isx can serve as a stand-alone workstation, or as a file server. Standard configuration includes 1MB of RAM (expandable to 16MB), VGA graphics, five AT-compatible expansion slots, two dedicated high-performance memory slots, bi-directional RS-232 serial and parallel ports, and a 200-watt power supply. It supports industry-standard AT Integrated Drive Electronics (IDE) SmartDrive storage technology devices.

GRiD's MFP series is based on the Intel 80386sx and 80286 microprocessors. They measure just 15-1/2 inches wide, 15 inches deep and four inches high. Standard configuration includes 1MB of RAM, expandable to 12MB, VGA, a 3.5-inch 1.4MB floppy disk drive, 101-key enhanced keyboard and three add-in slots. Options include a 5.25-inch floppy drive and 40MB, 80MB and larger IDE hard disk drives with capacities up to 350MB.

### **Networks**

Consistent with its stance as a leading vendor of office and field systems, in February, 1990, GRiD announced a nationwide networking strategy that included agreements with five companies. GRiD had signed national reseller agreements with SynOptics Communications, Inc., and Madge Networks. In March, 1989, GRiD announced agreements to resell the products of the three leading networking companies: Novell Inc., 3Com Corp. and Banyan Systems Inc.



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### **Specials Applications Group**

A specials applications group at GRiD headquarters customizes software products for specific customer applications. The customization projects have included numerous applications such as computed-aided design, sales and data collection.

### **Accessories, Peripherals**

Consistent with its philosophy of providing full industry-standard microcomputing capability to field-based personnel, GRiD supplements its line of laptop computers with a full complement of accessory and peripheral products. These products include external disk drives, extended power battery packs, battery chargers, alternative power source adapters, expansion and terminal emulation cartridges, printers and attachable facsimile devices — everything mobile professionals need to succeed in the field. Options for the GRiD line include external drives, monochrome and color monitors, mouse and communications software. GRiD also offers cellular phones with its field systems.

### **Software And Communications**

GRiD's software resources are aimed at ensuring that the full range of PC compatible software operates on GRiD computers. GRiD provides support for industry-compatible operating systems such as MS-DOS, OS/2 and UNIX.

### **Links With Software Developers**

The company has established relationships with software development companies to develop applications specific to the needs of major customers and vertical markets. GRiD also has an OEM relationship with The Santa Cruz Operation. SCO has developed a version of AT&T's UNIX V operating system, SCO XENIX System V, for customers using technical and engineering applications in the field.

In March, 1989, Santa Cruz Operation, Tandy and other leading industry vendors announced Open Desktop, a new standards-based, integrated operating environment designed for business and technical users of 386-based computers. Open Desktop is a unified SCO product that complies with a wide range of industry standards for applications portability, data security, graphical user interface, networking and rela-

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tional databases. Open Desktop is expected to achieve wide acceptance because it allows transparent execution of DOS, XENIX and UNIX System V applications through a standard graphical interface. In addition, it is compatible with POSIX, the federal standard for UNIX.

### **Customer Support And Services**

GRiD offers a full range of support and services to assist customers in developing field systems that satisfy their specific needs. These include software design services, systems consulting, training and customer support. The GRiD Resource Center operates a toll-free telephone hotline for customers 11 hours a day to respond to user questions.

GRiD also offers several customized maintenance programs. These include "priority service" for major accounts. Specially trained support personnel are assigned to handle those larger installations.

GRiD operates repair centers in Fremont, Toronto and Washington, D.C. The Washington facility serves the bulk of GRiD's government customers. GRiD's alliance with Tandy provides GRiD with greatly expanded repair and service capabilities. GRiD Systems Centers are conveniently located in some 50 cities to give GRiD customers easy access to support and service.

### **Warranties and Maintenance Programs**

Standard warranty service provides free coverage for one year and is included with all GRiD CPU's, GRiD expansion hardware, GRiD peripherals and GRiD printers. This warranty provides for the diagnosis, repair or replacement of CPU's within one year from date of shipment. Customers can drop off laptop units at any GRiD Systems Center for free shipment to the GRiD Repair Center. Desktop units can be dropped off at any local Radio Shack BPSC (Business Products Service Center).

In addition to warranty service, optional warranty service provides a loaner CPU delivered the next business day anywhere in the U.S.



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GRiD offers optional next day, on-site service for all desktop computers. This service is offered on either an annual contract basis or a per call basis at the customer's site Monday through Friday, 9 a.m. to 5 p.m. The on-site annual contract covers all parts, labor, travel time and mileage within 100 miles of a local repair center.

GRiD also offers a post-warranty annual maintenance program on both laptops and desktops that provides diagnosis, repair and return freight. Just as with the standard warranty contract, customers can drop the unit off at any GRiD Systems Center or Radio Shack BPSC. Loaner service is also provided with the maintenance program. A loaner CPU can be delivered the next business day to any location in the U.S.

### **Manufacturing**

GRiD designs all of its laptop computers. Most are manufactured at corporate headquarters in Fremont, CA. GRiD desktop computers are manufactured at Tandy's Fort Worth facility. To maintain high quality standards, GRiD has an extensive quality assurance program. Supplier contracts include a "Commitment to Quality" agreement that specifies levels of component quality, reliability and deliverability to which vendors must strictly adhere. Components and completed products are tested for more than 68 hours at the Fremont facility under varying environmental conditions. In addition, testing to ensure product longevity is conducted at the Tandy Manufacturing Technology Center in Texas.

### **Research And Development**

GRiD's R&D organization is responsible for developing the hardware and software products required to keep GRiD in a leadership position in field automation. GRiD's R&D organization focuses on both hardware and software development. The hardware group's primary responsibility is to develop computers which meet the needs of field professionals. Primary emphasis is placed on design of laptops and pen-and-display computers that are lightweight and small but provide advanced functionality with excellent display quality, high-performance processing capability, large storage capacities and high-speed telephone communications. In order to rapidly provide advanced desktop, laptop and handheld products to the market, GRiD employs a teams of engineers using the latest computer-aided engineering (CAE) design automation tools for development of both electrical and mechanical assemblies.

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### MANAGEMENT

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GRiD's management team is comprised of seasoned executives with many years of experience in the computer industry with firms such as Xerox, IBM, Tandy, Honeywell and Hewlett-Packard.

**ALAN B. LEFKOF**, president, joined GRiD in a sales management position in January, 1982. After serving as vice president of marketing from 1984 to 1987, Lefkof was named vice president of finance and chief financial officer. In 1988, he was promoted to senior vice president, finance and corporate development. Lefkof became president of GRiD on Jan. 1, 1990 following the retirement of Samuel J. Wiegand. Lefkof previously served as a senior management consultant for McKinsey & Company, Inc. He holds a B.S. degree in computer science from MIT and an M.B.A. from the Harvard Business School.

**D. BRUCE WALTER**, senior vice president of sales and marketing, joined GRiD in July, 1983 as vice president of sales. He came to GRiD after serving in several general management positions with Xerox, including general manager of the company's Typewriter Strategic Business Unit and national sales manager for Xerox office systems products. Walter, who has a B.S. in business administration from Waynesburg College, is a member of the Sales and Marketing Executives Association.

**GLENN HARDIN** oversees all GRiD manufacturing operations as vice president of manufacturing. Hardin came to GRiD from Tandy in January, 1989. He held a variety of positions in manufacturing at Tandy including general manager of Tandy Instruments, the group that manufactures printed circuit board assemblies for both Tandy and GRiD. In addition, he has held key positions with Compaq Computer, ARAMCO and General Dynamics. He holds a B.S. in electrical engineering from the University of Texas.

**JACK AIELLO**, vice president, marketing operations, is responsible for all headquarters sales operations. He also oversees the operations of the GRiD Systems Centers. Aiello joined GRiD in 1982 and has held several positions including director, product marketing and director, customer marketing. Prior to joining GRiD, Aiello served as manager, U.S. customer training at Intel Corp. He holds an M.S./E.E. degree in computer science and electrical engineering from MIT, and B.A. degrees in computer science and mathematics from the University of California at Santa Cruz.



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**TOM HUMPHRIES**, vice president, customer service, was appointed to that position in March, 1990. He is responsible for the GRiD Resource Center, Fremont Repair Center, and laptop and desktop service programs. Humphries joined GRiD in 1982 and held a variety of positions including director of U.S. marketing prior to becoming vice president. Earlier, he worked for Hewlett-Packard and General Electric. Humphries holds a B.S. in Industrial Engineering from the University of Vermont, and an M.B.A. from Dartmouth.

**KIRK CRUIKSHANK**, vice president, marketing, oversees product, governmental and international marketing, marketing services, marketing communications and advanced systems. He joined GRiD in 1982 and has held the positions of senior marketing representative, federal sales district manager and federal sales director. Cruikshank previously was a sales manager at Intercomp. He holds a B.A. in Economics from Ohio Wesleyan University, and an M.B.A. from the University of Michigan.

**SHANE DICKEY**, vice president of engineering, joined GRiD in April, 1991. He was formerly vice president of engineering for Digital F/X Corp., a manufacturer of multimedia products. Dickey served earlier as director of engineering at Silicon Graphics where he was responsible for RISC-based, 3-D graphics platform development. Prior to Silicon Graphics, he led development teams at Hewlett Packard for 13 years with particular emphasis on operating systems and distributed networking. He holds a B.S. in mathematics from California State University, Long Beach.

**JEFF HAWKINS**, who joined GRiD in 1982, was named vice president of research in April, 1991. Formerly GRiD's director of advanced products, he is the architect of GRiD's pen-based computing program and has extensive experience with all the technologies used in pen-based computers. Neurobiology research he conducted in 1986 led to the unique algorithms used in GRiD's handwriting recognition software. Hawkins, who earlier worked for Intel Corp., has a B.S.E.E. from Cornell University.

**BILL DEGROOT**, Western area vice president, is responsible for GRiD's sales organization from Pittsburgh, PA to the West Coast. DeGroot, who has worked in the computer field since 1975, joined GRiD in March, 1987 after having served as vice president of sales and marketing for World Computer Corp. He holds a B.S. in psychology from Michigan State University.

**GERRY PESUT**, Northern area vice president, is responsible for Canada and the Northeast U.S. government business. Pesut joined GRiD in January, 1984. He was previously a regional sales manager for Wang Canada Ltd. He also spent 17 years with IBM Canada Ltd. in sales and marketing management. Pesut is a graduate in engineering from the Detroit Institute of Technology.