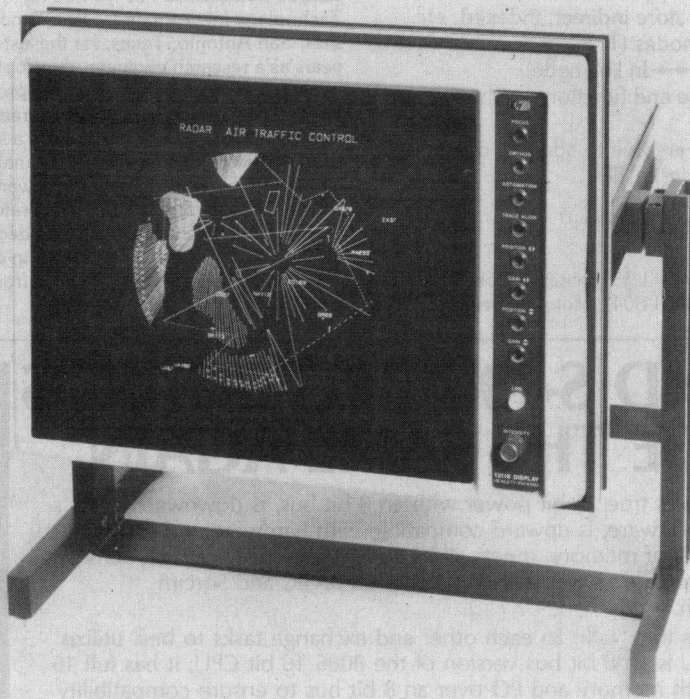# NEW PRODUCTS

New Products Editor:
Prof. Demetrios A. Michalopoulos
California State University, Fullerton

The Hewlett-Packard Model 1311B display uses an electrostatically deflected CRT which requires only 115-VA maximum power with its fast writing speeds. According to the manufacturer, the yokeless electrostatic deflection simplifies operation by eliminating geometric correction circuits and unnecessary delay lines while reducing power requirements and weight. The unit has a tilt stand for table-top applications.

CRT display achieves 60 lines/inch resolution

Designed for use primarily as a graphics computer peripheral, the Hewlett-Packard Model 1311B CRT display has a resolution of 60 lines/inch at center screen with minimum corner defocusing.

With a 14-inch screen, the unit includes high-speed deflection circuits, a fast rise time Z-axis amplifier, and regulated power supplies.

Spot resolution is 0.017 inch, with the spot remaining well focused on all parts of the screen.

According to Hewlett-Packard, the 1311B can make any size on-screen movement in less than 500 ns, including settling time. Rise times for both X and Y amplifiers are less than 75 ns and the Z-axis amplifier has a rise time of less than 25 ns.

The Model 1311B CRT display is priced within the US at $5300, with delivery in approximately 30 days.

Reader Service Number 14

Trilog's software-selectable T-8200 impact dot matrix printer/plotter—shown above at the right of an NCR 8230 minicomputer—provides the NCR user with business graphics including graphs and bar code symbols. A wand-readable OCR-A font is also available for printing labels.

Printer/plotter provides business graphics options

Trilog's T-8200 impact dot matrix printer/plotter has been introduced for use with the NCR 8200 minicomputer series.

For line printer operation, the unit provides the full ASCII 96- upper and lower-case character set at 300 lpm. Available as an option is the choice of 10, 13, or 16 characters per inch at six or eight lines per inch, selected under software control or via an external manual switch.

The basis of the system is the Printronix P300 printer/plotter. The T-8200 plots with a dot density of 60×72 dots per inch at 33 inches per minute.

The T-8200 is priced at $7630.

Reader Service Number 15

Robot scan converter interfaces computer and TV

An image-processing scan converter for interfacing between computers/microcomputers and TV cameras/monitors has been introduced by Robot Research, Inc.

The Robot Model 650 has a $256 \times 256 \times 6$ MOS frame-store memory which permits a picture to be frame-grabbed from a television camera and supplied to the computer on a random access basis. One pixel can be moved every 63.5 μs. Frame-grab memory contents are viewed on a television monitor at all times.

Image data can be quantified or enhanced since the computer can also write data into the frame-grab memory. This data can be new or derived from the data previously taken from the memory. As frame-grab memory data is altered by the computer, the displayed image on the monitor also changes.

The unit can be programmed with assembler or high-level languages. Multiple Model 650s can be daisy-chained to a single computer. Interface with 16-bit minicomputers or microcomputers is available by means of different interface boards.
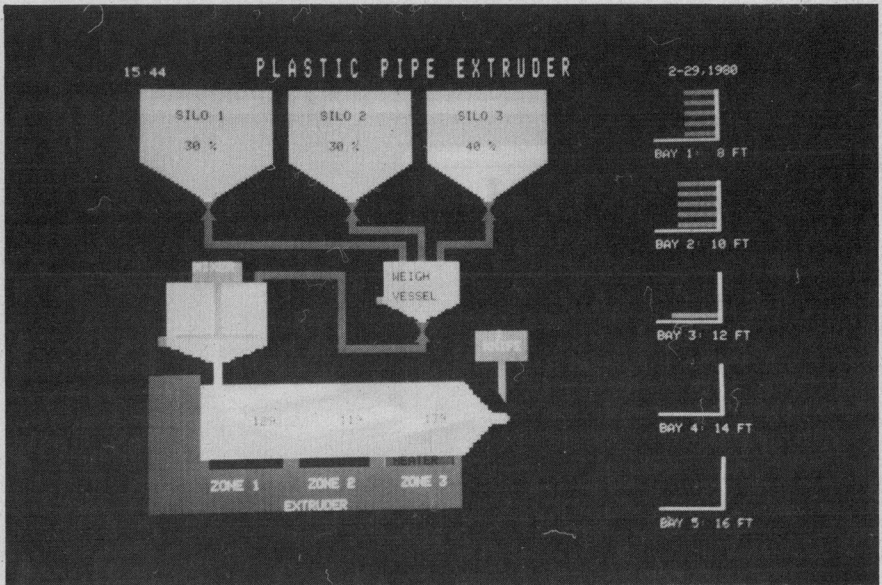
The unit is priced at $3600.

Reader Service Number 16

This unretouched photograph is an example of the color displays available with the GRPHPK graphic display package introduced by Eagle Signal Industrial Systems for its Eptak microprocessor controller. Approximately 20 color graphic displays can be designed that show dynamic process activity pictorially through general and special symbols.

Graphic display software adds color to process control

Eagle Signal Industrial Systems has introduced a state-of-the-art software package that operates in conjunction with an intelligent color graphic CRT terminal for its Eptak microprocessor controller.

With the GRPHPK package, the Eptak system user can define the process display adding the dimension of color, define control requirements, and operate the process. The graphic display package operates in conjunction with an Intelligent Systems Corporation color CRT. The Eptak controller communicates with the ISC terminal and other standard peripherals through standard Eptak interface modules. Operator interface to the Eptak system is via the color graphic CRT terminal keyboard which includes dedicated key functions.

Hard copy reports—available with the software when optional hardware and interface modules are added—include dynamic trending via an analog output to a chart recorder, historical trending of process variables through a plotting printer.

Control features offered by the software include direct digital control consisting of PID control loops and alarms, cascade control using master and slave control loops, and ratio and blend control consisting of ratio, percentage, and totalizer control loops. The package allows the user to define control loop trim parameters.
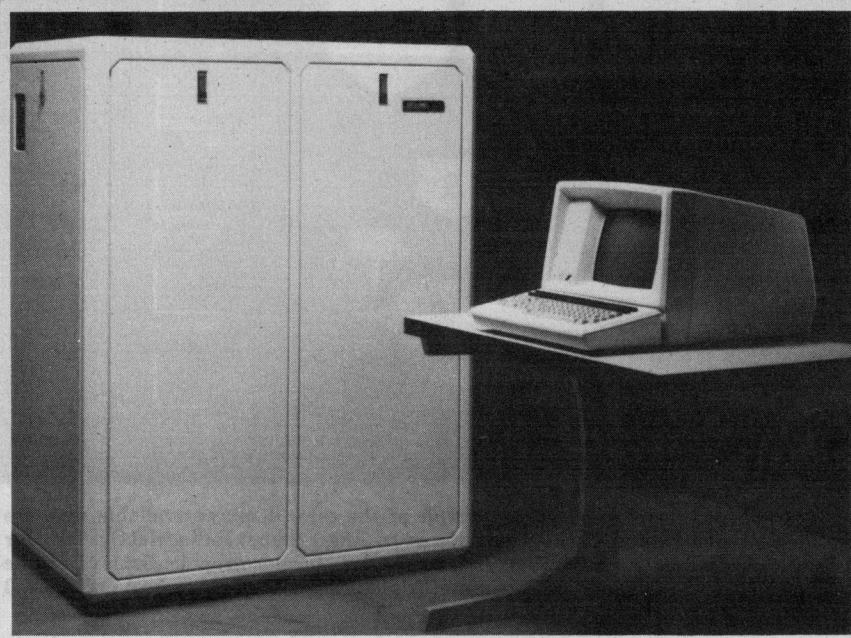
An auto tracking feature provides bumpless transfer between manual and automatic control. The package also includes auto transfer to backup, automatically forcing a backup station to take control of a loop in the case of failure within the Eptak subsystem. Setpoints can be ramped to target values in slow or fast increments. Keylock security requiring password entry prevents unauthorized system control.

The software package, color CRT terminal, printer, and required Eptak hardware are priced under $19,000.

Reader Service Number 18

Sperry Univac adds two multiprocessor models to 1100/60 LSI-technology family

Two entry-level multiprocessor system models have been added to the Sperry Univac 1100/60 family of computers. According to Sperry Univac, the 1100/60 systems are the first large-scale general-purpose computers to use LSI technology to implement a multiple microprocessor-based architecture.

The new models, designated the 1100/62-E1 and the 1100/62-E2, embody the "tightly coupled" technique of multiprocessing whereby both processors are equal in sharing the processing workload under a single copy of the 1100 operating system.

Among the advantages of the "tightly coupled" techniques are full two-processor power availability for real-time applications as needed and no necessity to move real-time applications if the primary online system should experience an interruption. A single failure in the CPU, I/O unit, or main storage unit does not cut out half of the system.

Both systems can be field upgraded to Model H multiprocessors.

The 1100/62-E1 can be purchased for $889,340 or leased for $19,780 monthly. The 1100/62-E2, equipped with the byte-oriented extended instruction set, can be purchased for $1,017,335 or leased for $22,395 monthly. Leasing fees, which include maintenance, are based on a five-year agreement.

Reader Service Number 17

★ NCC New Products...

Each processor in Nanodata's QMX 6300 line includes a systems console. A console printer is optionally available. The Model 6343 is shown above.

QMX 6300 processors support batch, timesharing, and RJE

Nanodata Computer Corporation has announced its line of QMX 6300 series computers, replacing the previously announced VMX 200 and VMX 400 plug-compatible series.

According to Nanodata, the QMX 6336 processor is equivalent to 130 percent the power of an IBM 370/148, and can be upgraded to the QMX 6343. Main memory capacities range from one to four megabytes in one megabyte increments, memory cycle time is 495 ns per eight bytes, and machine cycle time is 175-350 ns, with simultaneous multiple instruction processing capabilities.

The QMX 6336 comes with one integrated byte multiplexer channel and two integrated block multiplexer channels. Two additional block multiplexer channels can be added. Channel data rates of 50K bytes/sec in the byte mode and 2M bytes/sec in the burst mode can be achieved on individual channels. The aggregate data rate is 8.05M bytes/sec.

The other two members of the QMX 6300 family, the QMX 6333 and the QMX 6343, will be available next year. For the QMX 6333 processor, main memory ranges from ½ to 2M bytes. One integrated byte multiplexer channel and up to two integrated block multiplexer channels are available. The 6333 can be upgraded to the 6336 or the 6343 processor. The QMX 6343 processor provides main memory capacities ranging from two to four megabytes.

All three processors support virtual processing and are fully compatible with IBM 360/370 operating and applications software.

A QMX 6336, depending upon the configuration, costs between $163,000 and $212,000. Pricing for the QMX 6333 will range between $98,000 and $123,000.

NCC booth 3015
Reader Service Number 19

Megatek introduces color raster graphics terminal

Megatek Corporation's first color raster graphics terminal will be unveiled at NCC. The Whizzard Model 7250 parallel raster terminal offers enhanced resolution on its 512×512 screen.

According to Megatek, the pixel update rate is better than 160 ns per pixel, including 3-D transformations. The picture can be updated 30 times per second. The terminal has RS-232 and universal parallel interfaces, and is 100 percent compatible with the Whizzard 7210 vector system.

NCC booth 1115
Reader Service Number 20

Microprocessor-based formatter uses GCR encoding techniques

A microprocessor-based formatter for use with Kennedy's Model 640 8-inch disk backup cartridge transport, the Model 650 uses a data recovery system employing GCR techniques to reduce host computer overhead while improving data integrity. The same bus and signal conventions are used for both disk drive and backup cartridge controllers, simplifying peripheral controller design.

The formatter is integral to Kennedy's 6400-bpi, four-track, serpentine cartridge drive with 17.3M-byte unformatted capacity. With 10K-byte records, formatted capacity is 15M bytes on a 450-foot DC300A cartridge.

Major components include an eight-bit MOS microprocessor and two-speed bipolar microsequencers. The microprocessor handles communications with the host, provides transport control, initiates read/write sequences, and monitors the timing structure of commands in process. Routines are included that sense broken tape or the loss of tape from the reels. The high-speed microsequencers provide write encoding, read synchronization, and decoding for the encoded GCR data.

The unit measure $6'' \times 11'' \times 0.5''$, and its required +5V power can be obtained from the drive's source.

In single-unit quantities, the Model 650 formatters are priced at $400, with OEM quantity discounts available.

NCC booth 2115
Reader Service Number 21

12-step UPS system features "mimic-bus" indicator layout

Utilizing 12-step pulse-width modulation, the uninterruptible power source system introduced by Sola Electric is intended for use with large mainframe computers, industrial process controls, and other large-scale electronic equipment applications. According to the manufacturer, the 12-step UPS system achieves an operating efficiency rating of 87-91 percent.

The system's expanded operator control panel offers an array of meters, status indicators, and alarms for comprehensive system monitoring and control. Status indicators are arranged in a "mimic-bus" layout with indicator lamps located on a system bus schematic, a layout providing a visual representation of the system's power flow for performance monitoring. Mimic-bus indicators include input, output, battery, and bypass breaker status; rectifier, inverter, and bypass power status; and battery "on" indication.

NCC booth 4422-4426
Reader Service Number 22

Two magnetic tape controllers designed for LSI-11, PDP-11/70

Emulex Corporation has introduced two magnetic tape controllers, the TC01 and the TC70, designed for use with the LSI-11 and PDP11/70 computers.

The TC01 dual-density controller/formatter for the LSI-11, LSI-11/2 and LSI-11/23 microcomputers provides compatibility with DEC's TU10/TM11 tape subsystems as well as software-transparent operation for use with any industry standard reel-to-reel magnetic tape drive at speeds up to 75 ips. Users can switch-select data recording in either NRZ format at 200-800 bpi or PE format at 1600 bpi.

Designed for meeting high density GCR tape storage requirements for the PDP-11/70, both models of the software-transparent TC70 controller functionally emulate the TM03/TU45 controller and tape drive made by DEC. The TC70/A supports Telex 6240/6250 tape transports, while the TC70/B supports STC 1921/1951/1953 tape transports—each with its own applicable formatter. In either configuration, the TC70 emulates the DEC TWU45 and the TWU77 tape subsystems, recording at speeds up to 125 ips and at densities of 800, 1600, or 6250 bpi.

The TC01 will be exhibited at NCC.

NCC booths 3415 and 3417
Reader Service Number 23

Winchester disk drives offer 90M- and 158M-byte capacities

Two Centennial Series 14-inch Winchester disk drives from Ball Computer Products, designated as BFM-90 and BFM-160, offer capacities of 90M and 158M bytes, respectively. When new head technologies and higher data densities become available, both drives will accept upgrades doubling these capacities, according to Ball.
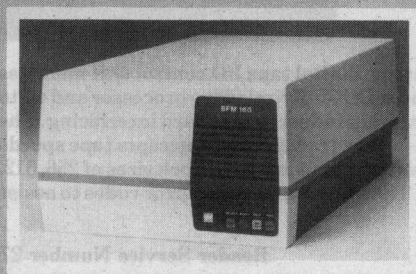
In both models, the head/disk assembly is a sealed module consisting of a rigid deckplate, spindle, carriage/way assembly, three or four 14-inch disks, read/write heads, and a servo head.

Four head configurations are used in the drives. Two data heads read and write the top disk. Up to three double-headed assemblies each read and write the bottom surface of one disk and the top surface of another. The servo head reads track-following information on the bottom surface of the bottom disk. All moving heads have low mass to provide fast access.

All electronic components are carried on five printed circuit cards, partitioned into power supply, servo, digital control, interface, and read/write control. Partitioning, LED fault display, and direct interconnection via the printed circuit backplane simplify maintenance. Resident micro-diagnostics provide self-checking under microprocessor or manual control. The Centennial Series is designed to meet UL, CSA, and VDE standards.

A true linear motor actuator, controlled by a closed-loop microprocessor-based servo system, precisely positions recording heads. Track positioning information, pre-recorded on a dedicated disk surface, minimizes the effect of thermal transients and disk-stacking tolerances.

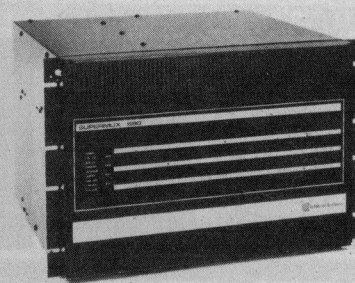Bytes per sector and sectors per track may be changed by activating a DIP switch on the interface card, allowing formatting to match a variety of operating systems and data formats. The drives have 20,160 bytes per track. Since this format is SMD-compatible, software formats need not be changed.

SMD-compatible early/late strobe control provides for shifting of the read strobe position relative to the data separation window. The disk head carriage assembly can be located at plus or minus offset from the normal track position, allowing retry of a read operation.

A "set sector" tag is provided as an enhancement to the standard SMD interface and allows the user to command the drive to interrupt the system when a specified sector is reached. It can be used to simplify control unit design and to improve throughput in multi-drive systems.

The Centennial BFM-90 drive, offering a 90M-byte capacity, is $6000; the 158M-byte capacity BFM-160 is $7500. OEM quantity discounts are available. Delivery of production quantities is 90 days from receipt of order.

NCC booth 2408
Reader Service Number 24

Both the BFM-160, shown above, and the BFM-90 14-inch Winchester disk drives offer a recording density of 6486 bpi, 1122 tracks per surface, 561 tracks per head (cylinders), and a track density of 480 tpi.

Infotron's Supermux 680 statistical multiplexer measures 19″×18″×12.25″, weighs 40 pounds, and operates within an environmental temperature range of 32° to 95° F.

Statistical multiplexer increases throughput

Infotron Systems Corporation has announced the Supermux 860, a 32-channel statistical multiplexer with capabilities that include error protection, priority control, data compression, ABR, flow control, down-line loading, and hard copy system status reports. Inputs can be any combination of synchronous and asynchronous, dial-up, and dedicated with mixed protocols and speeds to 9600 bps.

The microprocessor-controlled unit uses statistical techniques to transmit only active data inputs. Up to 32 input lines with a combined aggregate speed of 38,400 bps can be concentrated over a single 9600-bps output line.

Throughput is further boosted with priority control. Every input has a priority/no priority switch establishing its priority for bandwidth on the high-speed output line. Switch-selectable data compression capabilities provide additional line efficiencies, particularly with inputs carrying tabular data.

Transparent to existing terminals and software, data is buffered, checked, and, if necessary, retransmitted. Users can reconfigure remote units from the central site and monitor system status with front-panel displays.

Provisions are included for terminals that use XOFF or other flow control commands to signal the host CPU to temporarily stop sending data. The Supermux at the terminal end recognizes the command and immediately stops the flow of data to the terminal. It will, however, permit the CPU to continue sending, generating its own XOFF message only if the buffer reaches 80 percent of capacity.

Reader Service Number 25

Shown rackmounted above a tape drive, Quantex's digital tape I/O control unit manages data transfer between the memory of the Quantex DS-30 digital video processor and up to four synchronous magnetic tape transports utilizing industry-standard interfacing. The unit is compatible with ANSI and IBM seven- or nine-track formats, accepts tape speeds from 12.5 to 45.0 ips, and allows random retrieval of stored images. Block sizes of 256, 512, 1024, and 2048 pixels per record are selectable. The unit also displays error codes to assist in correcting recoverable errors.

Reader Service Number 27

Sequential controller handles up to 12 individual events

Artisan Electronics Corporation offers the Model 11587, a 12-channel sequential controller able to control and monitor up to 12 independently timed events with individual time periods ranging from 0.0 to 999.999 seconds. Field testing and performance data, according to the manufacturer, show a resolution of one millisecond on the full time period and an accuracy of better than 0.05 percent.

A keypad is used to enter the time periods for each event, with individual channel disablement accomplished by 12 toggle switches mounted on the front of the panel. A digital display indicates the event being set and the time to event. Each channel has a corresponding indicator light showing event status.

Designed to allow the user to reset, stop, start, and advance each event using controls mounted on the front panel, the controller also accepts optional remote control of reset, stop, and start. Twelve optocouplers input up to 28 VDC signals to terminate any event in progress, allowing the user additional logic control of each individual event go/no-go on a remote-control basis.

Reader Service Number 28

Portable test set traps and stores 4096 characters

The Hawk 4010 Datatrap, introduced by International Data Sciences, is a portable diagnostic data communications test set designed to monitor and interactively communicate with data appearing at the EIA RS-232 interface.

Data traffic is displayed on a 5-inch, 512-character CRT display. Sophisticated interactive and monitoring capabilities are accessible through menu pages displaying instrument configuration status to guide the user through all fault analysis procedures.

The microprocessor-based unit locates and isolates problems in the hardware and software by simultaneously displaying both transmit and receive data. The operator can program the Hawk to trap and store 4096 characters and recall this data for further detailed visual analysis. Thus, problems caused by transmission errors, equipment malfunctions, or inherent software problems can be effectively analyzed and corrected.

The Hawk 4010 operates with synchronous data rates up to 19,200 bps in both half and full-duplex modes. Asynchronous operation is provided by 16 internally generated clock speeds ranging from 50 to 19,200 bps. Data characters can contain five, six, seven, or eight bits, with one or two sync characters, plus parity.
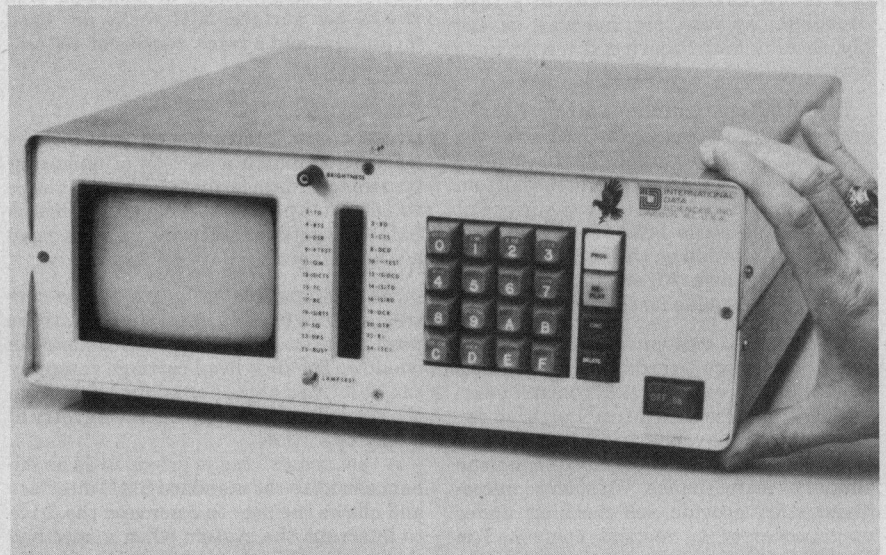
The microprocessor-controlled Hawk 4010 Datatrap—fully interactive with modems, terminals, and CPUs—displays all switch settings on the CRT, entered via the 16-key hexadecimal keyboard and stored in nonvolatile memory. The unit measures $5^3/_8$" $\times$ $15^1/_4$" $\times$ 19", and weighs approximately 21 pounds. Required power is 115 VAC, 60 Hz.

Standard protocols include BISYNC, SDLC (NRZ, NRZI), HDLC, X.25, and all standard ADCCP. ASCII, Baudot, EBCD, EBCDIC, HEX, IPARS, OCTAL, Selectric, and Transcode formats are also standard, making the Hawk 4010 compatible with most data communications systems.

The Model 4010 is priced at $7500. Delivery is 60 days after receipt of order.

Reader Service Number 29