

are available for all types of aircraft over a broad range of performance envelopes.

Systems Control and Data Acquisition Systems – the CMS-790 Modular Supervisory Control System is a new concept in microprocessor-driven display and control for energy management and process-control applications. Each display module comes complete with remote terminal equipment telemetry interface installed and tested.

Omega Navigation Systems – accept coded VLF signals from eight Omega ground stations, and by measuring the phase differences in the signal from a minimum of three stations, simultaneously produce a hyperbolic grid pattern from which the aircraft's position anywhere on the earth's surface can be determined. Several models of the receiver/computer/antenna components provide a complete range of systems suitable for worldwide navigation in military, general aviation, business, and commercial airline aircraft in both rotary and fixed wing. Options for additional use of VLF communication stations are available as are several versions of the basic Omega System for different operating models and user requirements. Extensions of the Omega System to very low cost vehicles, such as drones are under investigation.

Navstar Global Positioning Systems – receive signals from earth-orbiting satellites that continuously transmit information on their own position, orbital parameters, and time. When completed in 1987, the total constellation will be comprised of 18 satellites in several planes mutually inclined at 55 degrees. The airborne system processes the received signals and provides positional accuracy to within 16 meters in each of three planes.

Engine Instruments – use sub-miniature lamps and fiber optics to present information, and have eliminated all dependence upon mechanical devices. In addition to the main feature of saving space in overcrowded cockpits, these instruments are extremely flexible in that sections of the parameter range can be emphasized at will, and they can be color-coded to alert the pilot to dangerous situations and to provide easy readability, thus improving safety and reducing pilot workload. Digital readouts of parameters for very high resolution and redundancy can also be incorporated. A broad spectrum of applications and a variety of designs are features of this product line.

Intelligent Instruments – combine normal sensor inputs with pre-programmed and manually entered data, process them via micro-processors under software control, and display computed parameters to provide performance and analytical information. Typical examples include the Flight Advisory Computer, which calculates and displays the optimum airspeed and altitude for the present gross weight, the gross weight, and the time and fuel remaining. The Status Display Systems prioritizes and displays up to 110 warnings and cautions, up to 1,000 checklist items, and includes facilities for complete maintenance data logging. It features optional voice warning; automatic fault cancellation, storage, and recall; dual redundant processing and power supplies; and channel failure indication. The Data Collection Unit, which can be used in conjunction with the Status Display System, provides for all scheduled and unscheduled maintenance activities by means of plug-in memory modules.

It includes a self-contained, portable microprocessor with an integral thin-film electroluminescent screen, and interchangeable dedicated and general keyboards.

Components Division: The Components Division specializes in a range of custom-built components, products, and services (all to military specification):

Printed Wiring Boards – built to customer specifications with emphasis being placed on very complex designs in multilayer boards, rigid flex and polyimide. Boards are made to military and commercial specifications with a high level of quality control. Circuit packaging (CAD), and photoplotting services are available.

Microcircuits – designed and produced at CMC include thin-film and thick-film hybrid configurations, and microwave integrated circuits usable in applications up to 24 GHz. The products include amplifiers, oscillators, mixers, filters, resistor arrays, multipliers, matching networks, as well as many versions of digital circuits, all of which can be tested to full military specifications.

Magnetic Devices – designed and built to customer specifications. They include various types of transformers, filters, delay lines, and power modules.

Panels and Displays – integrally illuminated panels to MIL-P-7788, and high-brightness, ruggedized alphanumeric displays, tactile keyboards, and annunciators. New activities include night vision goggle compatible panels and electroluminescent display technology.

Military Power Supplies – designed and produced for aircraft, ground equipment, and missile applications. In-house magnetic, PCB, machining, and power hybrid component production ensure high-quality and effective cost and schedule control.

Radar Division: The Radar Division specializes in the development, engineering, and production of surveillance radar:

Naval Surveillance Radar – the AN/SPS 503 is a light-weight S-band surveillance radar for use on ships over 300 tons. It has a double curvature parabolic antenna enclosed in a radome, an MTI signal processor, and a frequency agile transmitter.

Data Communications Department – a product line introduced in 1975 that provides central office equipment for Telex/Data networks. The product design emphasizes large numbers of connections and non-blocking operation, with current designs allowing for up to 30,000 switched circuits connected through a fully folded, fully available switch block at speeds of 50 to 9,600 bps, with all current accepted protocols and special customer services and features.

Commercial Communications Division (CCD): CCD is primarily engaged in the production of high grade commercial communications and other radar equipment and systems. These products, however, frequently find application in military operations:

Radar – Comprises the LN66Hp, 75 kW surveillance radar used on the LAMPS MKI helicopter. It has also been used in fast patrol boat fire control systems and other specialized applications. The LN66, 10 kW, is widely used by the US Navy as a type II radar on large ships and a type IV radar on small boats. The LN66SP, 3 kW, porta-