

L-3 COMMUNICATIONS/ SPD TECHNOLOGIES

The L-3/SPD Technologies companies come together to form the only fully integrated, full-line provider of ruggedized, reliable and cost-effective electrical power systems and services to navy vessels around the world, as well as the most demanding commercial power users from the inner city to outer space. The L-3/SPD Technologies companies and brands are:

SPD Electrical Systems

Creating the future in circuit-breaker design, engineering, manufacturing and testing for the world's most demanding applications.

SPD Switchgear

The most reliable line of electrical power control and distribution products for commercial, industrial and military applications.

Power Paragon

Specialists in power-conversion technology and advanced power systems for mission-critical applications worldwide including:

- Power Systems Group
- Power Switching & Conversion Systems
- Power Magnetics
- EuroAtlas
- JovyAtlas

Henschel

Design, engineering, manufacturing and integration of machinery control, monitoring and communication systems.

PacOr d

Multifaceted DoD services, installation and integration of shipboard combat systems worldwide.

L-3 Communications/Henschel

9 Malcolm Hoyt Drive
Newburyport, MA 01950
Phone: 978.462.2400
Fax: 978.462.4497
www.L-3com.com
www.henschel.com



HENSCHEL



Photo courtesy U.S. Navy

Photo courtesy
Litton Ingalls Shipbuilding

Photo courtesy U.S. Navy

ENGINEERED PRODUCTS
AND SYSTEMS FOR
CONTROL, MONITORING
AND COMMUNICATIONS



A Continuing Legacy of Excellence

*Aboard every surface vessel and submarine
in the United States Navy*

*Aboard international navy and commercial
vessels around the world.*

*In many commercial and industrial
applications, such as rail transportation, bridges,
power plants and offshore platforms.*



Photo courtesy U.S. Navy



Photo courtesy U.S. Navy



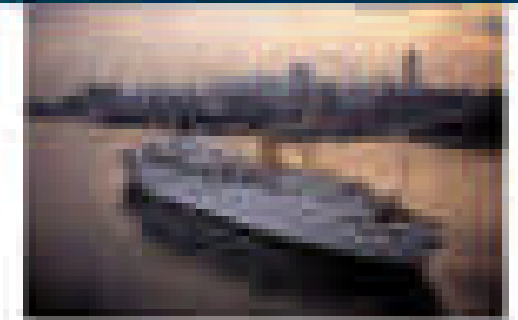
Photo courtesy U.S. Navy

Since 1919, communications, monitoring and control equipment from L-3 Communications/Henschel has been on the scene wherever an unforgiving environment demands unquestioned reliability and longevity.

The L-3/Henschel name has become synonymous with high-quality, cost-competitive products custom-engineered to meet the exact requirements of each customer's application. Even as technology has changed from mechanical to electromechanical indicators and controls, servo and synchro technology to integrated microprocessor-based systems —

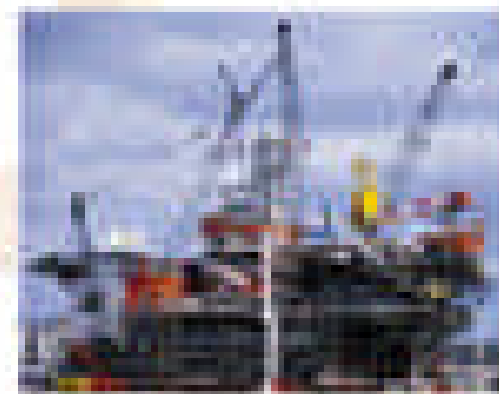
L-3/Henschel has remained at the forefront. The company provides total system or subsystem solutions with the highest value for a wide range of military and commercial needs.

At L-3/Henschel, quality is never compromised. The Quality Assurance Program meets the stringent requirements of **ISO 9001** and MIL-Q-9858 quality standards. Rigorous, functional and environmental testing is performed on all products to ensure reliable performance. And, L-3/Henschel's vertically integrated manufacturing facility allows complete quality control through every phase of a



product's development, production, testing and delivery. It is known throughout the world that L-3/Henschel products will survive the environment!

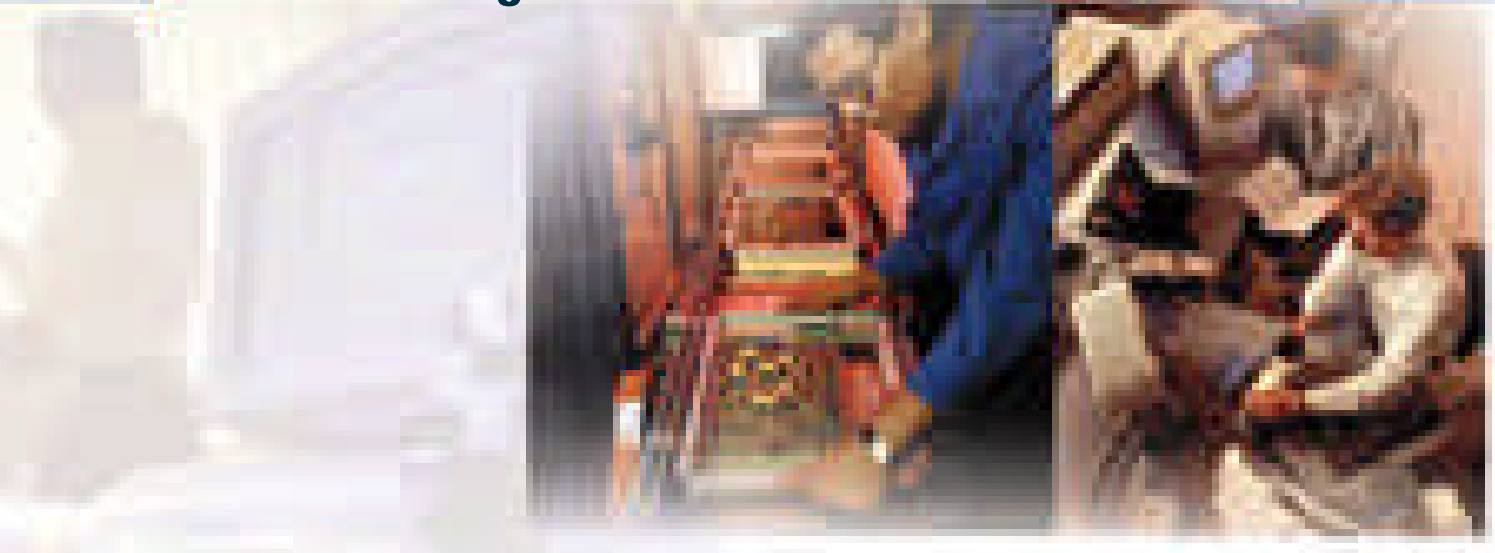
Henschel is part of the L-3 Communications/SPD Technologies team of companies. This association with one of the world's leading military and commercial systems suppliers gives L-3/Henschel a big picture view of its customers' needs. The result is L-3/Henschel's unique capability — survivable systems tailored to the application which are still highly cost-effective.



Innovative, Cost-Effective Engineering and Manufacturing Solutions

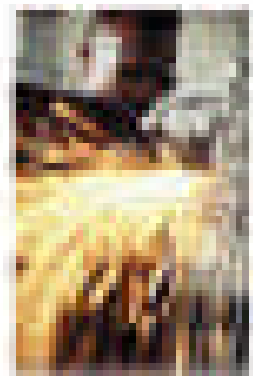


Photo courtesy
U.S. Navy



Over 80 years of experience designing and manufacturing equipment for applications ranging from automatic battery monitoring to specialty enclosures gives L-3/Henschel an unparalleled capability to custom-engineer discrete equipment or total systems for any specific need. For customers who require “engineer-to-order” solutions, an extensive knowledge base is available in the following areas:

- Analog and digital circuitry
- Electromechanical design
- Software development

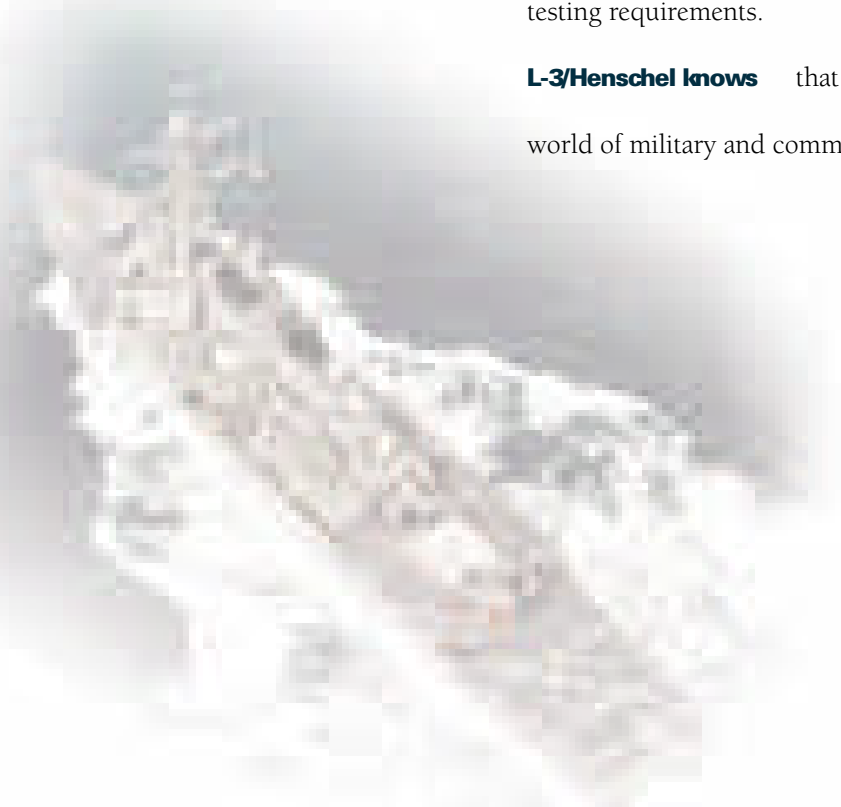


- Signal processing
- Enclosures and packaging
- Consoles and workstations
- Microprocessor technology
- Network architectures
- Man/machine interface control and graphics
- Commercial-off-the-shelf (COTS) implementation and integration

L-3/Henschel experts can also assist in compliance with qualification, environmental and electromagnetic interference (EMI) testing requirements.

L-3/Henschel knows that in today’s world of military and commercial

purchasing, two standards must be consistently met: *cost* and *turnaround*. Using cutting-edge engineering and manufacturing automation techniques, L-3/Henschel has streamlined design and production processes to offer competitive pricing without sacrificing quality. With the advancement of ruggedized COTS technology, L-3/Henschel can offer an even greater level of cost-effectiveness to customers.



Communication Equipment

Announcing Systems

Rugged and high-performance, L-3/Henschel announcing systems are designed for use in high-ambient noise environments, such as the flight deck of an aircraft carrier, in enclosed compartments of merchant marine vessels, on offshore platforms, in railroad stations and tunnels. Available in both military and commercial configurations, the modular design of these systems allows custom fitting for any requirement. They are also compatible with a variety of military- and commercial-grade loudspeakers.



Integrated Communication Systems (ICS)

L-3/Henschel offers scalable communication systems for shipboard and industrial applications that integrate voice, video and data. These ruggedized systems are highly reliable and utilize commercial components designed to meet military environmental qualifications. Components include PBXs, redundant processors, announcing systems and sound-powered telephone interfaces.



Integrated Terminal Equipment (ITE)

The Integrated Voice User Terminal (IVUT) and the Compact Integrated Voice User Terminal (CIVUT) are dual-homed voice communications devices that replace and/or integrate telephones, radio voice terminals, announcing system stations, sound-powered phones and intercom stations. These terminals consist of a color LCD, touch screen, PC-compatible computer, display interface, BRI-ISDN interface and an analog card. They also provide alarms and indications upon detection of conditions outside normal operating parameters. L-3/Henschel can integrate all communication terminals into one, simplifying operations and maintenance.

Data-Conversion Equipment

L-3/Henschel offers a wide range of “middleware” equipment that allows existing systems to communicate with the integrated networks now used both in the Navy and throughout the industry. Input/Output Controllers (IOC) and Computer Conversion Assemblies (CCA) interface with existing sensors and legacy systems to convert messages to compatible data formats and interfaces. L-3/Henschel data-conversion equipment allows the user to provide a local area network for backfit and forward-fit applications.



Photo courtesy U.S. Navy

Photo courtesy U.S. Navy



Monitoring and Control Equipment



Photo courtesy U.S. Navy



Indicators and Flat-Panel Displays

L-3/Henschel offers an extensive selection of both COTS and custom-designed display and indicating equipment. In addition, the company has designed and manufactured a series of pelorus products for shipboard use. These visual sighting tools utilize digital display technology and enable an operator to sight a target and determine its true or relative bearing from the bridge of the ship. L-3/Henschel also

custom-designs and manufactures displays for commercial and industrial applications.



Navigation Information Display Systems (NIDS)

NIDS equipment from L-3/Henschel provides vital navigation and ship-control information — in graphical and numerical formats, on integrated flat-panel touch-screen displays. Information to the NIDS is provided directly from the existing shipboard systems and sensors, minimizing cabling and installation.

Monitoring Systems

L-3/Henschel offers a variety of microprocessor-based monitoring systems that include automatic battery monitoring systems, airflow monitoring systems, environmental testing, digital master clock systems and tank-level indicating systems. These systems serve both the military and commercial markets and can be

tailored to meet the customer's particular needs. They range in function from simple alarm operations to complex, integrated systems used in data distribution and communications.

Automation

L-3/Henschel is the leading designer and manufacturer of both COTS and custom-designed systems for military and commercial vessels and transportation. L-3/Henschel provides custom automation systems for propulsion control, machinery control, fluid control, power management, ventilation and damage control. All systems are designed for an open-architecture application and can be fully integrated. Additionally, custom graphic user interfaces (GUI) can be implemented rapidly through off-the-shelf software or customized software development tools.

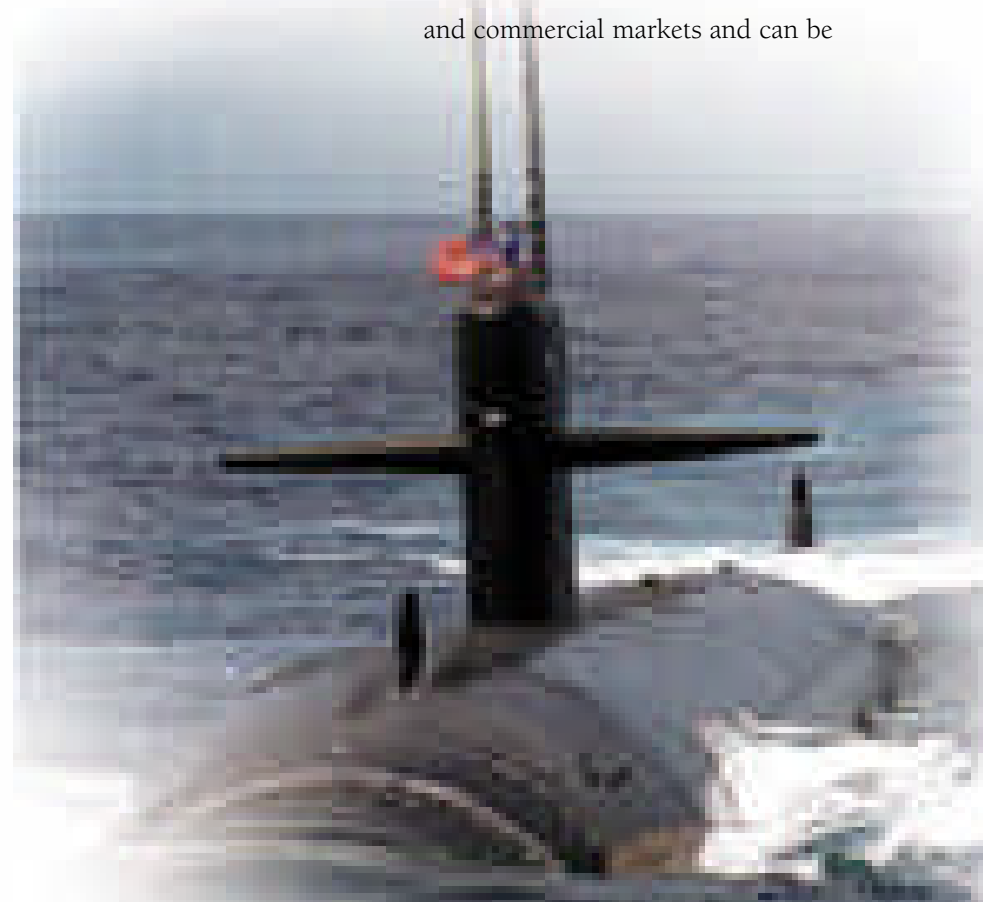


Photo courtesy U.S. Navy

Equipment Workstation Solutions



Photo courtesy U.S. Navy



Consoles and Enclosures

L-3/Henschel has been producing specialty consoles, workstations and enclosures for over 25 years. The company offers proven enclosures with standard 19" rack mounting that meet shock, vibration, EMI and other critical-environment requirements. All workstations and enclosures are designed to survive the harshest environments, can be customized for specific applications and include electronic packaging. These features along with a reputation for reliability, make L-3/Henschel the one-source provider for all the customer's enclosure needs.

