



ESSCO

The increased safety and performance requirements of today's aircraft and airborne antennas are placing greater demands on design and manufacturing processes to structurally protect equipment from environmental conditions and aerodynamic loads.

New combinations of geometries, materials and construction methods are optimizing both strength and cost-efficiencies. As a result, composites are now gaining wider acceptance for use on aircraft due to their high strength-to-weight ratio, ability to be molded into complex shapes, outstanding transparency to microwaves and less corrosive properties.

WHY CHOOSE L-3 ESSCO?

- 50+ years of experience in composite manufacturing
- AS9100-certified
- World leader in the research, design and manufacture of radome, reflector and composite structure technologies
- Design-for-Manufacturing method turns "blue-sky" ideas into reality in as little as 6 months
- Rapid Certification Program incorporates qualified NIAR Certification by Simulation
- U.S. and E.U. operations and manufacturing facilities respond quickly to customer needs around the globe

L-3 ESSCO and its subsidiary, L-3 ESSCO Collins Limited (ECL), are the world's premier designers and manufacturers of radomes, reflectors and composite structures. Our two fully equipped operations and manufacturing facilities — one in the U.S. and the other in Europe — enable us to support customer requirements around the globe. Both factories produce a wide variety of composite products and are staffed with field service technicians, which enables us to manage multiple programs simultaneously and provide delivery in the shortest time possible.

Call L-3 ESSCO today to discuss your airborne composite needs. Whatever your application — be it ground-based, shipboard or airborne — we've got you covered!

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L-3 ESSCO Airborne

L-3 ESSCO's Advanced Airborne Composites —

*Whatever Your Need...
We've Got You Covered!*

- RADOMES
- REFLECTORS
- STRUCTURES
- SURFACES





COMPOSITE STRUCTURES AND SURFACES

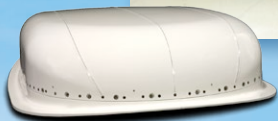
We have served the composite structures and surfaces market for more than 50 years, designing and manufacturing high-fidelity composite radomes and reflectors.



L-3 ESSCO can produce everything from simple panels to large integrated assemblies. We manufacture with E-Glass, S-Glass, Astroquartz®, Spectra™, Dyneema®, T300, AS4 and IM7. In addition to fiber types, we are also experienced in polyesters, epoxies, cyanate esters and a wide variety of thermoplastics. We are ready to qualify new product-specific systems as well.

We also specialize in rapid prototyping and can turn around tooling and dimensionally correct prototypes in just weeks rather than months for most applications.

Patented enhanced bird strike accessory installation on SATCOM radomes captures the antenna in the event of a catastrophic failure.



HIGH-FIDELITY RADOMES AND REFLECTORS

A majority of our composite manufacturing has been in conjunction with the high-fidelity, high-volume production of composite radomes and reflectors.



Since 1961, L-3 ESSCO has led the industry in the research and development of new radome technology. Having pioneered research in the use of metal beams in radomes, radome tuning technology, development of hydrophobic coatings and the use of advanced composite materials, L-3 ESSCO has always been first to market with new radome enhancements and continues to pursue advancements in electromagnetic and structural performance.

Composite reflectors are used in a multitude of applications, including airborne installations, to redirect or extend RF energy. L-3 ESSCO's proprietary design and molding process enables us to produce tolerances smaller than 5 mils (0.005 in.) to optimize gain and reduce side lobes that can affect reflectivity. Our high-performance airborne reflectors use fine-weave or unidirectional carbon composite surfaces that can provide wide frequency range reflectivity up to 1,000 GHz.



DESIGN FOR MANUFACTURING

L-3 ESSCO utilizes a "Design-for-Manufacturing" method, and from initial concept, we tap our extensive library of materials and efficient fabrication processes to help reduce both manufacturing and recurring costs. This enables us to turn around the design, development and manufacture of prototype parts for first article inspection and program acceptance in as little as six months.

RAPID CERTIFICATION PROGRAM

Conducting tests and evaluating mechanical properties are crucial to the design and manufacture of any composite material. L-3 ESSCO has created a Rapid Certification Program in partnership with the National Institute for Aviation Research (NIAR), the same agency trusted by the Federal Aviation Administration (FAA) to provide research, design, testing and certification. Our partner, Lightning Diversion Systems, which designs our lightning strike systems, is also working directly with NIAR to develop standards for lightning strike certification.

By utilizing NIAR's certified simulation tools, we are able to seamlessly transition our prototyping and development to Finite Element Analysis (FEA). This enables us to fast-track the entire certification process and take modification or replacement parts (articles) from concept to FAA Parts Manufacture Approval (PMA), quickly and cost-effectively.

While Certification by Simulation is by far the fastest and the lowest-cost testing method, in the event that this method of certification is not acceptable, we also offer Certification by Simulation with Experimental Verification.

L-3 ESSCO is AS9100-certified. This aerospace industry-specific standard relating to ISO 9001 conformity provides a comprehensive quality management system focused on areas directly impacting product safety and reliability.



Partnering for efficiency



ESSCO



WICHITA STATE UNIVERSITY
NATIONAL INSTITUTE
FOR AVIATION RESEARCH



LIGHTNING DIVERSION SYSTEMS