

IMPROVING
SUPPLY CHAIN.
IN YOUR WORLD

AEROSPACE



YOUR
PACKAGING
SOLUTION.

NEFAB



We offer customized, complete packaging solutions with global service and supply for production, maintenance, repair and overhaul operations.

CUTTING SUPPLY CHAIN COSTS WITH PROFESSIONAL PACKAGING MANAGEMENT

IN THE AEROSPACE INDUSTRY, AN EFFICIENT SUPPLY CHAIN IS CRUCIAL. THE RIGHT PRODUCTS MUST BE AT THE RIGHT PLACE, AT THE RIGHT TIME. IF NOT, EXTRA COSTS WILL QUICKLY ADD UP. OR EVEN WORSE: SECURITY MIGHT BE AFFECTED. AS PACKAGING PLAYS A KEY ROLE IN THE SUPPLY CHAIN, IT HAS A STRONG IMPACT ON QUALITY AND COSTS.

→ Nefab is a global packaging group with specialized solutions for the aerospace industry. We offer customized, complete packaging solutions with global service and supply for production, maintenance, repair and overhaul operations. With vast experience from commercial aviation and defence, we have an essential understanding of the complexities of the industry.

We have proven design solutions for components in all aircraft supply categories, such as propulsion systems, airframes, cabins, equipment and systems. Our highly specialized teams consisting of key account managers, designers and engineers coordinate global projects with deliveries to customers in every corner of the world.



JOS DE KLEINE, MANAGER LOGISTIC DEVELOPMENT, KLM ENGINEERING & MAINTENANCE

” We appreciate the fact that we have been able to reduce the overall packaging costs by 20-30%

CUSTOMER CASE: KLM MAINTENANCE & ENGINEERING

WE WERE CONSTANTLY FACING THREE QUESTIONS: WHAT? HOW? WHERE?”

BY OUTSOURCING ITS PACKAGING SUPPLY TO NEFAB, KLM ENGINEERING & MAINTENANCE REDUCED THE TOTAL COST FOR PACKAGING AND LOGISTICS BY 20 -30%

→ KLM Engineering & Maintenance is a subsidiary of KLM Royal Dutch Airlines. The headquarters for KLM Maintenance & Engineering are adjacent to KLM's home airport, Schiphol, in Amsterdam from where they serve the entire world. The business is responsible for maintaining their own airline fleet but also offers maintenance services for other airlines. Maintenance can take place in several different ways; at their own facilities in Schiphol and at other service stations throughout the world. This involves several, complicated flows of spare parts. “Our total warehouse holdings include 25,000 different components, which must be delivered quickly, accurately and in proper condition,” says Jos de Kleine, Manager Logistic Development at KLM Engineering & Maintenance.

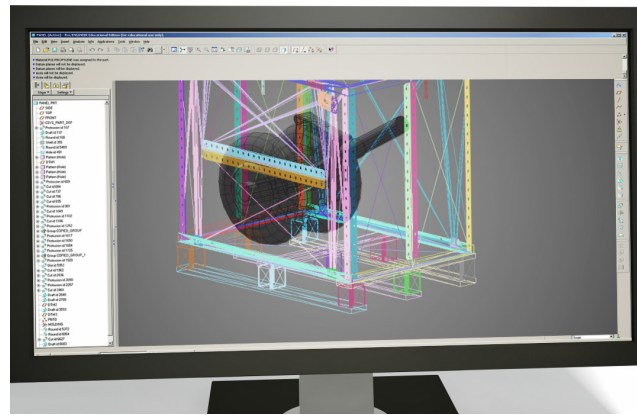
IMPROVEMENT POTENTIAL

With a variety of packaging including more than 3000 different packages, delivered by roughly 20 different manufacturers and distributed to 5 different locations, the company faced many problems. The packaging was difficult to find because it was hard to know which hangars they were stored in. Many return packages were lost in transit around the world. As a result, many components were put into the wrong packaging - resulting in delays and damage to sensitive spare parts. Packaging was purchased in the at last minute, even if the right packaging was in stock in the next hangar a few hundred meters away. “Within the organization, we were constantly facing three questions. “What?”, “How?” and “Where?”

What kind of packaging material should be used for each component? What should the package look like, and how should the component be packed? Where was the component located and where was the matching packaging?" explains Jos de Kleine.

GLOBAL QUALITY AND COST CONTROL

The company decided to outsource the packaging supply to Nefab. Nefab set up a complete packaging solution for maintenance, repair and overhaul operations. A new standardized packaging system was designed, reducing the number of items to around 400. A new database answers the questions "What", "How" and "Where", and the entire returnable packaging system was made



CONSULTING

Packaging review, engineering services and standardization of packaging items.



SERVICES

Database administration and RFID tracking, warehouse services and customer-controlled deliveries. Repair and maintenance of returnable packaging solutions.

traceable using RFID. KLM has achieved full control over the packaging flow, and deliveries are made from Nefab warehouses to KLM once per week. Nefab's global presence has also helped ensure quality at other facilities than just Schiphol. "We are very satisfied with the arrangement and have been able to cut our costs on many levels. The purchasing costs for our packages are lower, and the returnable system has been cheaper to operate. The costs for ordering and administration have dropped, while at the same time we save time and money with better planning and fewer losses in our returnable system. We appreciate the fact that we have been able to reduce the overall packaging costs by 20-30%," says Jos de Kleine.



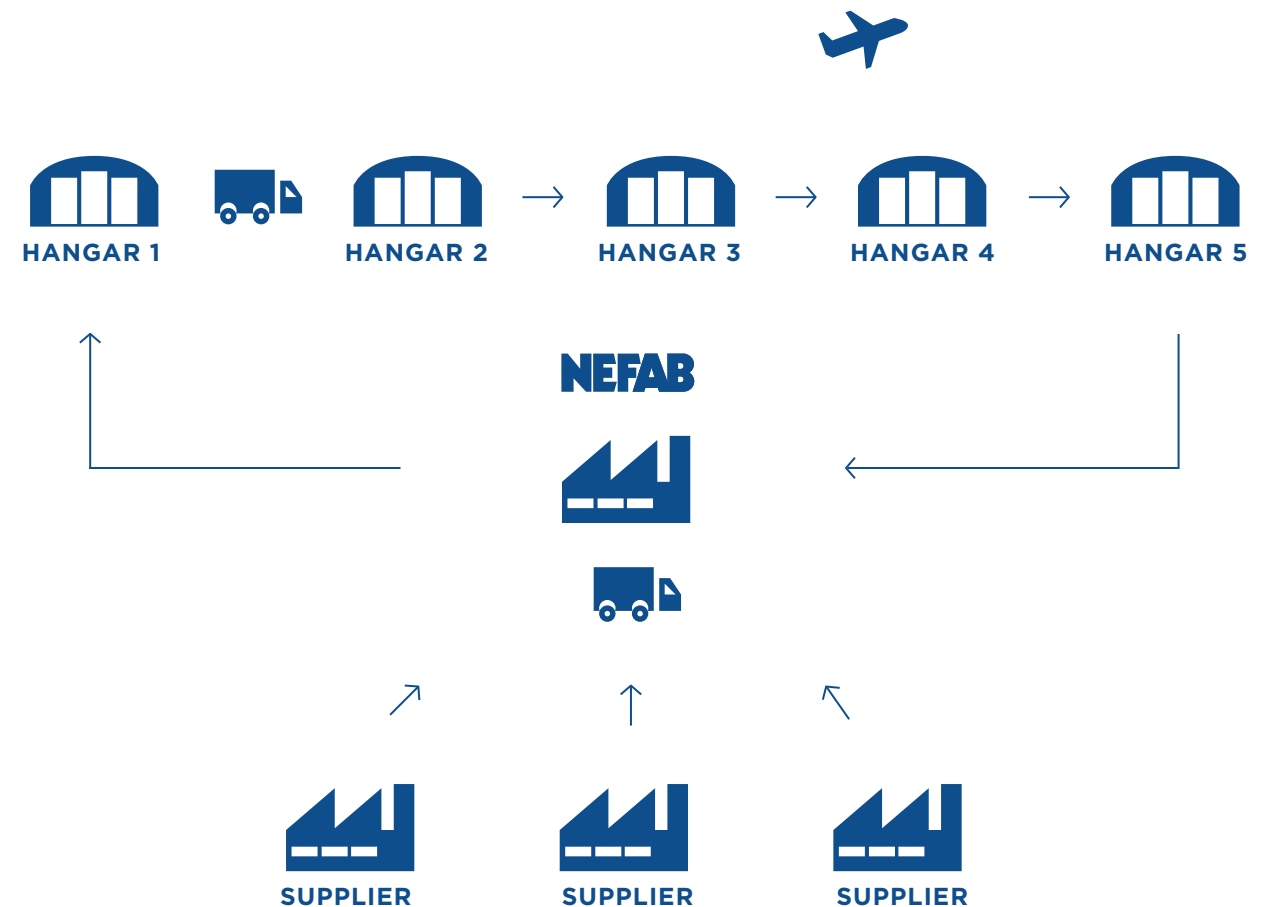
PRODUCTS

The complete packaging solution consists of a well-balanced combination of expendable, returnable and long-term packaging solutions.

CUSTOMER BENEFITS

AN OVERALL PERSPECTIVE IS THE KEY TO SUCCESS. NEFAB'S NEW SETUP FOR KLM HAS IMPROVED THE COMPANY'S PACKAGING OPERATIONS IN MANY AREAS - INCREASING EFFICIENCY, QUALITY AND COMPETITIVENESS.

- SINGLE POINT OF CONTACT
- GLOBAL SERVICE AND SUPPLY
- REDUCED COST
- TRANSPARENCY IN THE SUPPLY CHAIN
- REDUCED NUMBER OF PACKAGING ITEMS



PLACE: HAMBURG, GERMANY LAT: 53° 55.1'N, LONG: 9° 99.3'E

IMPROVING SUPPLY CHAIN. IN YOUR WORLD



SCAN THE QR CODE WITH YOUR
SMARTPHONE TO SEE A VIDEO
ABOUT NEFAB'S TOTAL COST
APPROACH.

FOCUS AREAS

ORIGINAL EQUIPMENT MANUFACTURER

DRIVEN BY INCREASING PASSENGER AND FREIGHT TRANSPORTS, THE NUMBER OF AIRCRAFT IS ESTIMATED TO DOUBLE IN THE NEXT 20 YEARS.

→ As a result, new aircraft programs are developed and production increases. Leading aircraft manufacturers are changing their supply concepts, and redefining their demands on the vendors. Parts are to be delivered in smaller quantities, in shorter cycles, and just-in-time.

Nefab has longstanding relationships with leading aircraft manufacturers and OEMs. Our experience covers every component of the fuselage, propulsion systems,

airframes, cabins, equipment, and systems. Our global network of designers and engineers share experience and solutions in a common innovation bank with hundreds of existing packaging designs for aerospace. Development and FEM-analyses are executed in highly equipped testing facilities and supplied to our customers from our facilities around the globe.

MAINTENANCE, REPAIR AND OVERHAUL

"INOPERABLE PARTS" TEND TO BE AN EXPENSIVE PROBLEM FOR MOST AIRLINES. IF THE SUPPLY CHAIN DOESN'T SUPPORT THE NEED FOR SPARE PARTS, THE AIRCRAFTS STAY ON THE GROUND.

→ The solution is to have a well thought out packaging system to facilitate coordination of product protection and on-time delivery. This way, the risk of product damage and additional costs are heavily reduced.

Nefab collaborates with some of the world's most reputed airlines in Europe, Asia and North America. We're providing systems with warehouse services and

delivery of tailored or standardized packaging for spare parts to hangars all over the world. A strong focus on logistic solutions – management of returnable packaging, tracking services with RFID or GPS and just in time deliveries – helps save valuable time for our customers.

TOTAL COST APPROACH

A PACKAGING SOLUTION SHOULD SAVE MORE THAN IT COSTS." THOSE ARE THE WORDS OF RUBEN RAUSING, FOUNDER OF TETRA PAK. THIS IS ALSO THE CORE OF NEFAB'S OFFERING. PACKAGING COSTS REPRESENT A RELATIVELY SMALL SHARE OF A MANUFACTURING COMPANY'S TOTAL COSTS. HOWEVER THE CHOICE OF PACKAGING SOLUTION HAS A MAJOR INDIRECT EFFECT ON OTHER COST ITEMS.

**TRANSPORT**

Optimizing packaging size & weight to increase transport efficiency (Cost and CO₂).

**ADMINISTRATION**

Reduce costs for order administration by EDI & VMI solutions. Delivery of complete packaging sets.

**WAREHOUSE**

Reduce need for storage space and capital costs for finished goods as well as packaging stock.

**PRODUCT PROTECTION**

Optimize packaging solutions in terms of cost for product protection in relation to cost for damages.

**HANDLING**

Reduce packing time and improve ergonomics.

**ENVIRONMENT**

Improve or eliminate waste handling, and increase reusability.

IMPROVING BUSINESS. IN YOUR WORLD



Our **TOTAL COST APPROACH** ensures that packaging is optimized, reducing total cost in your supply chain.



With our **MULTI-MATERIAL ENGINEERING** capabilities, we can develop sustainable packaging solutions for any product.



In addition, our **GLOBAL SUPPLY & SERVICE** capabilities enable us to provide both local support and global coordination, wherever you are.

Your mission is our mission. We develop complete packaging solutions optimized to reduce total cost and environmental impact in your supply chain. With our global engineering and supply capabilities we serve you in every corner of the world.

[NEFAB.COM](https://nefab.com)

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