



GLOBAL FINISHING SOLUTIONS

Aerospace

Superior Performance, Exceptional Quality



Global Express



F-35 Lightning II

GEN 5 *Spray Booths*

Aircraft finishes must survive some of the most intense conditions any type of equipment might face. Freezing temperatures, wind, rain, snow, extreme heat, and UV exposure are just a few of the conditions that must be endured. Modern aviation coatings do an excellent job of protecting the aircraft against these factors, but only if they are applied properly. In order for these special coatings to do what they were designed to do, they must be applied under very specific conditions. Conditions that are achieved in today's high-performance Fifth Generation aviation spray booths by Global Finishing Solutions.

GEN 5 Fifth Generation Spray Booths

Global Finishing Solutions is a proud member of the National Business Aviation Association (NBAA) and holds a contract with GSA as an approved government supplier. For many years, Global Finishing Solutions aviation spray booths have been recognized worldwide as the best possible environment for coating application and curing.



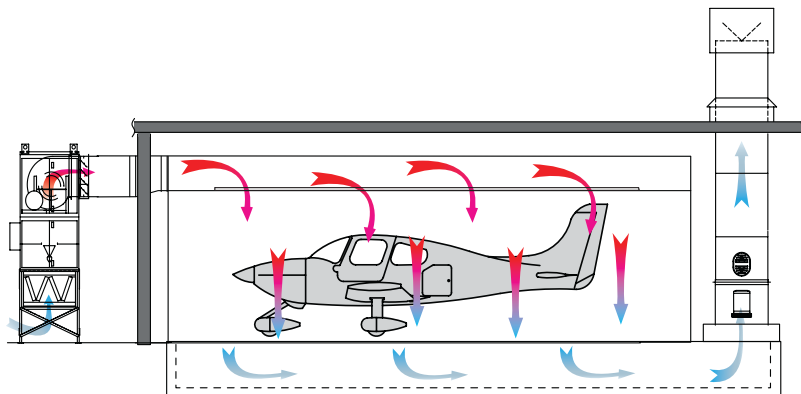
DOWNDRAFT PAINT BOOTHS

GFS has pioneered the use of conformal downdraft paint booths for world class finishes. In this design the air is introduced at a higher velocity in the spraying zone than in the non-spraying areas of the paint booth. This gives excellent painting performance while minimizing the amount of air and energy required for the process.

Downdraft paint booths are used from small aircraft to business jets and are a sign of truly world class finish. These booths are often free-standing self-supporting booths. Custom design of the paint booth allows integration of the paint booth with the building for new construction. Such a design maximizes the use of building components to minimize the need for spray booth components. Such items as structural steel and wall paneling can use building components as part of the booth design to save money in the overall integrated design. We call this type of paint booth a “hybrid” paint booth and GFS has pioneered this trend. A “hybrid” design requires that GFS and the architect work together to maximize savings and functionality.

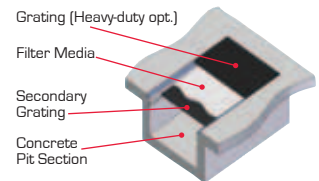
Lighting and airflow are exceptional in downdraft booths. The under floor filtration system is easy to maintain by use of filter carriages that allow removal and replacement from just one end of the underfloor grating. The side filter houses contain the second and third stage filters that are a requirement of Aerospace NESHAP regulations. The side filter houses remove these expensive filters to a safe location and allow for easy replacement and inspection.

Downdraft booths are not recommended with water clean-up systems due to the possible damage to filters in the floor. Downdraft booths are particularly useful where a flow-through process design is required.



Engineered Pit Design

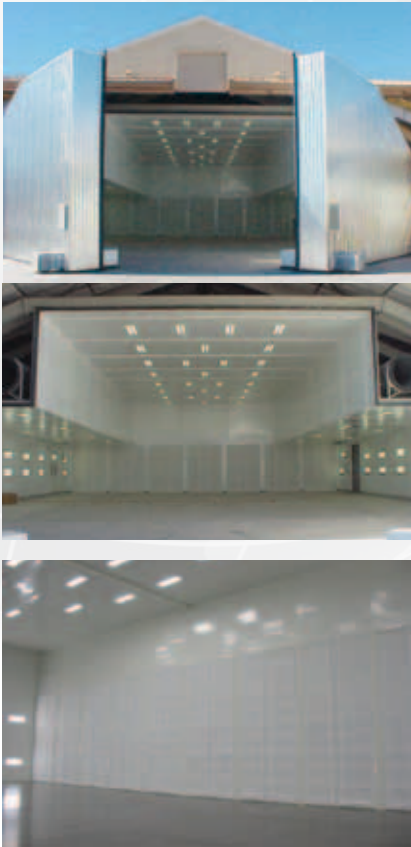
Filter media is supported by secondary grating enabling balanced air distribution and maximizing filter utilization.



Downdraft booths provide quality aircraft paint finishes. There's an advantage of allowing gravity to pull the overspray to a pit in the floor.

CROSSDRAFT PAINT BOOTHS

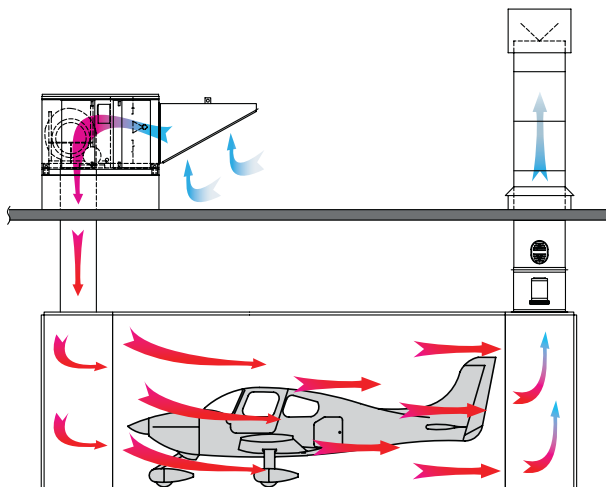
Crossdraft paint booths are the most common paint booth in use in aerospace applications. The use of conformal shaped crossdraft booths is a GFS signature and it aids in the reduction of energy consumption by reducing the amount of airflow required for the paint booth operation. Conformal shaped crossdraft booths also allow for closer placement of lighting for better lighting of under wing and under-fuselage areas.



Filtration for crossdraft booths is accessible from inside the paint booth. All three stages of filters are located at the rear filter wall and are removed to the paint booth side. This type of booth is often installed into an existing hangar where it is called an "insert". An insert is a free-standing self-supporting paint booth that is independent of the hangar into which it is installed.

It is also possible to integrate crossdraft paint booths into an architecture system that allows the use of building components in the paint booth system. This "hybrid" style of paint booth will save the owner money on structure, paneling and the like if used in new construction. Hybrid design requires that GFS and the architect work together to maximize savings and functionality.

Crossdraft booths are used in about 75% of all aircraft paint booths and find good application in prep booths, wash booths and stripping chambers. Crossdraft booths are the most flexible process design, allowing stripping, washing, preparation and painting. If painting several different sizes of planes is required, this design has many advantages. This design also allows use of booth division into more than one work area.



For years, nose-to-tail airflow has been used in painting aircraft. It seems natural to aircraft painters and provides excellent quality finishes. Control of overspray is optimum. Critical tail painting and numbering schemes behave well with crossdraft airflow since the tail is very close to the exhaust filters.



AEROSPACE BOOTH ACCESSORIES

Aerospace Filtration:

Aerospace National Emission Standards for Hazardous Air Pollutants, or NESHAP for short, requires the use of high efficiency filters to remove 95% of particles over 2 micron in size under certain conditions. The use of a 3-stage filtration system is mandatory and the filters must be in accordance with EPA Method 319. GFS uses a filtration system that provides 99% removal of most paint spray aerosols. This exceeds the requirements of both of these environmental protection agencies.



Volatile Organic Compound Control:

GFS offers carbon beds and filters that are used to remove up to 96% of VOCs from the air stream. The equipment utilizes a very simple carbon filter. It requires the addition of filter racks and maintenance access to remove these carbon cells. The function of the cells is to adsorb hydrocarbons from the air and capture them on the surface of the activated carbon. NESHAP considers carbon filtration an acceptable means of controlling designation. GFS has earned the "Best Available Control Technology" for our implementation of carbon based cell filters.



Doors

Doors are a critical element of paint booth design and many options are available to suit the layout of an installation. These include:

- Bottom-rolling filter doors
- Plenum filter doors
- Solid bottom rolling doors
- Multi-fold doors



AEROSPACE BOOTH FEATURES

Weather-Tight Spray Booth Designs

If a hangar is not available, the steel frame of the paint booth can be used to construct a stand-alone booth that is weather-tight and self-contained. The exterior is clad in the same type of steel siding used in most common pre-engineered buildings.



Temperature Controls:

Aerospace paints are high-performance paints and require paint application environments that must often be temperature and humidity controlled. The addition or removal of humidity requires the use of specialized machinery. Thermal systems may require the addition of heat to cure the coating. Application of paint should be performed in a narrow temperature range to avoid issues with the paint.



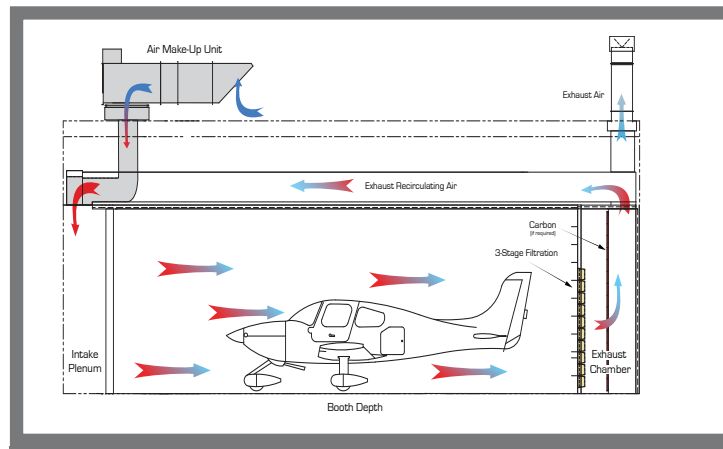
GFS is the leader in designing the most modern environments with specialized equipment and controls. These systems often have mechanical or evaporative cooling and steam or evaporative humidity generators. GFS has done more high-tech mechanical systems installations of paint booths than any other supplier. We work with your architect to incorporate these systems into the building design to achieve even greater economy.



Recirculation:

In today's aerospace finishing industry where energy is such a concern, it is becoming common to implement the use of an air conditioning and exhaust recirculation system for the paint booth. It is often a very cost effective measure to apply an exhaust recirculation system instead of the traditional 100% exhaust. Factors such as fire safety and personnel health must be considered before using an exhaust recirculation booth. This means the addition of monitors, controls, and alarms must be added to the booth so painters are aware of the current conditions at all times. The benefits of this type of operation are immediately evident since energy costs are one fourth of the cost of a full exhaust system.

GFS has done many recirculation systems installations and is an industry leader in the required technology. Generally recirculation rates are 80% circulated and 20% fresh air, however recirculation rates of up to 60/40 and as low as 90/10 have been accomplished. The major factors on determining the recirculation rate are climate conditions and personnel safety and the ability to heat/cool the space.





Engineering Support

GFS' attention to quality is unequalled. Every piece of equipment is meticulously engineered to meet or exceed quality and safety standards including those of OSHA and NFPA as well as all applicable building code regulations. GFS' engineering team works with you to design a booth specifically for the unique requirements of your finishing operation. Doors, roof design, special lighting, lifts, and many other custom options are available to meet the needs of specialty finishing applications.



Experience

When it comes to applying some of the most advanced coatings ever made, experience counts. GFS' vast knowledge of large-space airflow management comes from decades of experience as the world's premiere manufacturer of high-performance large equipment booths. Over the last 30 years, GFS has supplied more than 200 high-performance aircraft paint booths.



Service Contracts

GFS' extensive North American service network provides sales, service and installation support. Dedicated and knowledgeable personnel provide fast, efficient service to keep your finishing operation running smoothly and at peak performance.



Installation Capabilities

GFS aviation booths are available in several configurations, and can be custom designed for virtually any installation imaginable. Outdoor spray booths, insert-type booths for existing structures, and hangar retrofits are just a few of the possible installation options.



Helicopters

GFS provides Fifth Generation paint booths for the painting and refinishing of helicopters. These can be provided in any configuration but most often in downdraft and crossdraft designs. Aircraft parts can also be painted in GFS parts paint booths.



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