CURTISS-WRIGHT

Fighting fatigue and wear and corrosion

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Ageing aircraft is a problem that has a high profile both within the industry and amongst the general public.

The severity of the problem will vary dependent upon the operating conditions and the operator's maintenance program, for example, obvious factors are coastal operation and the frequency of re-painting. Post manufacture engineered surface treatments play a major role in maintaining the safety and integrity of commercial, military, corporate and private aircraft fleets. Ultimately, the safety of operating aircraft depends on the quality of the maintenance performed. Metal Improvement Company, as part of Curtiss-Wright Surface Technologies, operating under appropriate industry and customer approvals such as ISO 9001:2008, AS9100 Rev C, NADCAP and FAA are a trusted part of the manufacturing supply chain and the maintenance of operating aircraft Worldwide.

Since operating aircraft can suffer from such a variety of potential failures, the means to rectify these require different or a combination of solutions and Metal Improvement Company offer a wide range of services and processes developed to address these:

Controlled Shot Peening and Laser Peening

Failures from metal fatigue, corrosion fatigue and stress corrosion cracking can be prevented or greatly retarded by the application of Controlled Shot Peening; this is a cold process where tiny spheres of steel, glass or ceramic are propelled onto the surfaces of metallic parts to induce a residual compressive stress. Laser Peening offers the ability to surgically place residual compressive stress into key areas to retard crack initiation and growth enabling increased fatigue strength ratings.

Controlled Shot Peening is also very effective in identifying and repairing damage

caused by exfoliation corrosion known as Search Peening. Peening is typically used after polishing following initial corrosion removal to compensate for the lower fatigue strength of the thinner section, the action of the peening will cause the surface to blister again where deeper exfoliation is present. If this occurs the surface can then be redressed and repeened until no further blistering occurs.

In the aerospace industry, Controlled Shot Peening and Laser Peening are also used to form the aerodynamic curvatures into wing skins and to correct the shape of distorted parts, permitting the use of much harder and lighter materials that are particularly applicable to ageing aircraft.

In many cases the work is performed by specialist on site field crews on the aircraft in situ, in others, notably engines, landing gear and brake parts, the components are dismantled at overhaul and sent to one of our approved service centres for treatment.

Thermal Spray Coatings

Thermal Spray Coatings, in addition to being used for newly engineered parts, are commonly used to repair components where the substrate material has been deteriorated by the effects of high temperatures, wear, corrosion and oxidation, as the resurfacing application restores the part to its original manufactured specification and condition.

Engineered Coatings

Many aerospace parts have dry film lubricant coatings applied during the original manufacture. It can be a challenge to replace these coatings during repair and overhaul, as many are cured at high temperatures, so cannot be applied onsite. To combat this, Everlube® Products has developed a wide range of air cured coatings, which offer the required level of performance but that can be applied on site, in the field, reducing aircraft downtime and logistical costs

On site Services

Curtiss-Wright Surface Technologies has developed specialised equipment for on-site work that varies from small portable machines that can be used anywhere on the aircraft to side firing nozzles and lances and these are used in conjunction with masking tooling to achieve the required intensities in holes, crevices and other areas of restricted access. Development continues in all these areas with the object of automating the process in as many instances as possible.

Curtiss-Wright Surface Technologies offers a range of surface treatments, for more.

CURTISS-WRIGHT

Surface Technologies

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Why should you choose Curtiss-Wright Surface Technologies (CWST) to deliver your surface treatments:

A worldwide supported network service of over 75 facilities, including on site field crews

We offer a diverse range of quality surface treatments including:

- Controlled shot peening
- Shot peen forming
- Laser peening
- Engineered coatings
- C.A.S.E.™ super finishing
- Surface texturing
- Material testing
- Repair and overhaul

Proud history of experience and innovation dating back to the Wright Brothers and Glen Curtiss who formed the Curtiss-Wright Corporation in 1929

As a single source for all your surface treatments we can improve your turnaround times and save you money

Customer's trust us to improve the performance, strength and life of their components, including the repair and overhaul of worn components

Long experience in protecting components from fatigue, corrosion, wear, galling, fretting and environmental attack in key industries

We maintain all appropriate customer and industry quality approvals including ISO 9001:2008, NADCAP, AS9100 Rev C and ISO 13485

Tailoring our services to meet your needs

The Dublin Spire – a stunning example of our surface texturing technique showing the versatility of controlled shot peening

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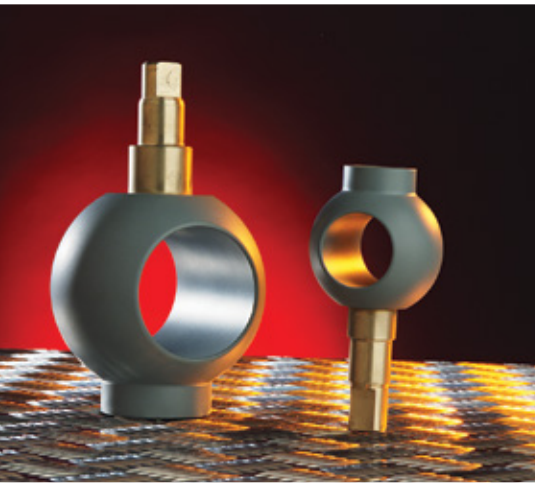

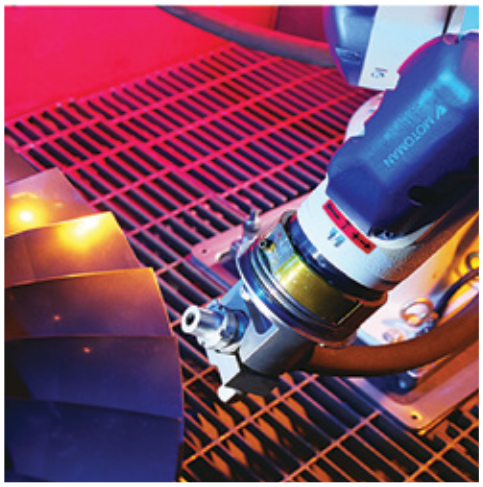

For more information on all our services and full worldwide contact details: www.cwst.co.uk