Laser tech the next step for aircraft repairs

17 December 2018

0 Comments

2 / 3 free articles left.

Australian researchers and RUAG Australia are investigating the use of laser metal deposition (LMD) production technology for faster and more cost-effective aircraft repairs.

The collaborative project focuses on using LMD technology to manufacture spare parts from steel and titanium. The team includes experts from the Innovative Manufacturing Cooperative Research Centre (IMCRC) and the Royal Melbourne Institute of Technology (RMIT).

Laser metal deposition (LMD) is an additive manufacturing process akin to 3D production technology. Metal powder is fed into a laser beam which is scanned across a surface to deposit the powder material in a precise, web-like formation. The bond created by LMD is exceptionally strong, making the process a viable method for both manufacturing spare parts and repairing existing parts, where the repaired part is just as strong as, or in some cases even stronger than, the original.

" LMD is basically a very high-tech welding process where we make or rebuild metal parts layer by layer "

"LMD is basically a very high-tech welding process where we make or rebuild metal parts layer by layer," Professor Milan Brandt, research team lead at RMIT, said.

Professor Brandt said the concept is proven and that prospects for its successful development are positive.

The research team sees the technology being applied to existing military aircraft platforms as well as the newer systems, such as the F-35 fleet.

The team is evaluating expectations that LMD technology will effect cost savings in the areas of maintenance and spare parts purchasing, scrap metal management, and warehousing and shipping costs. The estimated total cost of replacing damaged aircraft parts for the RAAF is currently at more than $230 million a year.

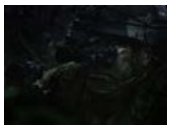
"Strategically speaking, a shift to LMD technology means less downtime for repairs and a dramatic increase in the availability and readiness of aircraft," Neil Matthews, Senior Manager of Advanced Technology and Engineering Solutions, RUAG Australia said. He is convinced that the technology has the potential to transform the concept of warehousing and transporting for the defence industry. Implementing LMD technology means that parts could be built or repaired on site.

"Instead of waiting for spare parts to arrive from a warehouse, an effective solution will now be available locally."

"This technology could be applied in any industry where metal degradation or remanufacture of parts is an issue. The current project focuses on military aircraft and it is potentially transferable to the civil aircraft, marine, rail, mining, and oil & gas industries," David Chuter, CEO and Managing Director IMCRC, said.

Related Articles

US Hornets poised for Australian repairs (/defence/air/us-hornets-poised-for-australian-repairs)



L3 expands Brisbane repair facilities (/business/l3-expands-brisbane-repair-facilities)

Local RUAG boffins prove wing repair technology (/news/local-ruag-boffins-prove-wing-repair-technology)

Newsletter Signup

Free registration to the ADM Headlines email newsletter:

Sign up

Latest Comments

Yesterday Good, maybe now we will a real idea of flying hour costs, and how ALIS really works, and how robust ...
Johnno on Local F-35s begin flying operations (http://www.australiandefence.com.au/news/loc f-35s-begin-flying-operations)

Last Sunday If you are going to be regularly boarding wooden fishing boats & the like, which may well mean getti...
DJ on Construction begins on first Arafura class OPV

The two-year project is the latest in a series of collaborations between RUAG Australia and RMIT.

RUAG Australia is a major industry research centre for the development and application of powder deposition technologies focusing on both SPD, sometimes referred to as cold spray, and laser assisted deposition (LAD), for defence applications.

Australian Defence Magazine Comment Policy

ADM welcomes respectful and relevant comments. Off-topic or abusive comments may be moderated or removed.

0 Comments Australian Defence Magazine 1 Login

Recommend t Tweet f Share Sort by Oldest

Start the discussion…

LOG IN WITH OR SIGN UP WITH DISQUS ?

Name

Be the first to comment.

ALSO ON AUSTRALIAN DEFENCE MAGAZINE

First supplier named for Land 400 Phase 2
7 comments • 3 months ago
Johnno — Plan Beersheba sees the 3 brigades assuming readiness in turns (1 brigade at readiness, 1 brigade training …

Senate concerned about precedent set by ANAO report on Hawkei
1 comment • 3 months ago
Adam Evans — Very interesting

Naval Shipbuilding College launched
19 comments • 3 months ago
Johnno — Aware of that. That doesn't mean that that they didn't have significant build issues.One example is that the …

Combat systems providers chosen for Hunter-class
3 comments • 2 months ago
Johnno — Here is the pic from the article: https://uploads.disquscdn.c... It looks like a matchbox installed sideways! The …

Subscribe Add Disqus to your siteAdd DisqusAdd

(http://www.australiandefence.com.au/8410E870-11E8-B41436D881CA1F93)

Last Sunday The Arrowhead 140 (A140 for short), is not just a rebadge. It is also a modernisation (standards & i...
DJ on Construction begins on first Arafura class OPV (http://www.australiandefence.com.au/8410E870-11E8-B41436D881CA1F93)

Last Friday Although the Venator is out of the race for the Type 31e, the Arrowhead 140 seems to me to be a reba...
Jono on Construction begins on first Arafura class OPV (http://www.australiandefence.com.au/8410BE870-11E8-B41436D881CA1F93)

Last Friday Army and Navy could make almost all medium caliber autocannons 30x173mm, but there'd still be 20mm f...
Jono on Construction begins on first Arafura class OPV (http://www.australiandefence.com.au/8410BE870-11E8-B41436D881CA1F93)

()

()

Subscribe

Subscribe to the monthly issue of ADM in print – delivered directly to your mailing address.

Subscribe (https://greatmagazines.com.au/magazine/DFM)

Learn

- Contact Us (/footer/contact-us)
- Advertise with Australian Defence Magazine (/page/australian-defence-magazine-adm-advertising-material)
- Advertise with Directory of Defence Suppliers (/page/directory-of-defence-suppliers)
- About Us (/footer/about-us)
- Privacy Policy (/footer/privacy-policy)
- Terms & Conditions (/footer/terms-and-conditions)
- Mobile Site

Connect

Facebook (https://www.facebook.com/AusDefMag)

Google Plus (https://plus.google.com/+AustraliandefenceA

Twitter (https://twitter.com/austdefence)

LinkedIn (https://www.linkedin.com/company/6601235

Youtube (https://www.youtube.com/channel/UCmQrfW

Sign up

(http://www.yaffa.com.au/) (http://www.daemon.cor