REPORT #3

ÅKERS KRUTBRUK®
Since 1552

Part of the IBD-group

A briefing on Åkers Krutbruk's current affairs

INTRODUCING THE FUTURE: NANO-CERAMICS

Our dedication to saving lives means that we are always looking for new and innovative ways to provide stronger protection at the lightest possible weight.

The IBD Group has made incredible progress in the development of nano-ceramics and nanometric steel. Already, IBD has been able to reduce the weight of protection kits by 40%. We present to you this report where you´ll be able to read all about how we are introducing the technologies of the future today – and much more.

Åkers Krutbruk continues to be the vanguard for delivering advanced protection for the armed forces. We are excited to continue our work, and welcome the challenges of creating even lighter and stronger protection at lower costs.

Niclas Sahlgren, CEO



SAAB ORDERS PROTECTIVE SHELTER FOR RADAR SYSTEM

Saab has placed an order for our protective shelter system for their Giraffe AMB Multi-Mission Radar System. The protective shelter offers crews state-of-the-art ballistic protection, which can be rapidly deployed as needed.

"The order is an excellent recognition of our long-term challenge to design sophisticated survivability systems and engineer high quality protection for personnel operating in various threat scenarios."
Niclas Sahlgren, CEO

End user: Australian Defence Materiel Organisation (DMO).



SCANIA 4G PROTECTION SYSTEM – AN INSTANT SUCCESS

Åkers Krutbruk and Scania have signed an agreement to supply 4G Protected trucks to a European nation.

The Forth generation of Scania Protection System – which has been in development by Åkers Krutbruk in co-operation with Scania over a decade – is now ready for production and, as this first order proves, is highly desirable. First deliveries will take place in 2011.

The 4G Protection System provides superior, low visibility protection against mines, IEDs, and ballistics.

LIFE ON THE FRONTLINE: SURVIVABILITY TECHNOLOGIES

An exclusive interview with Kari-Petter Sjösvärd, one of the key players taking Åkers Krutbruk to the "big leagues".

In early 2010 Sjösvärd was named Head of Technologies at Åkers Krutbruk; he leads a group of expert engineers focused entirely on the development and testing of new protection technologies.


Photo: Per Ockert

Looking back, what are the major changes you have experienced since you joined Åkers Krutbruk?

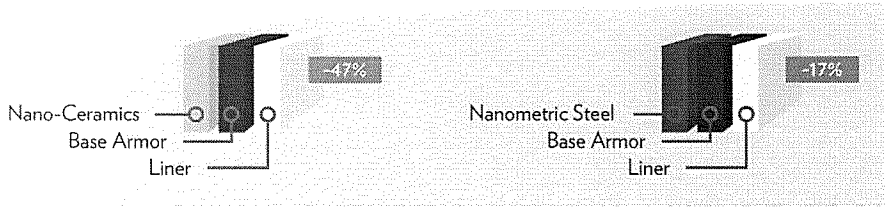
– When I joined the Research & Development department in 2004 it had eight multi-tasking generic engineers, working mainly with integration and design. Today the same department has 16 engineers, six of which are working together with me in research and testing. I foresee that in the future we will need about 30 engineers, of which at least ten will be highly specialized in ballistics. Another major change is the introduction of the IED-threat, which has had a huge impact on everything concerning survivability. In 2004 no one mentioned IEDs and today they have their own NATO test standard, just like mines and kinetic energy threats.

What do you think is the best armour technology?

– When people ask me for a high performance, low weight and low cost armour solution I suggest "1000 meters of air". There is no such thing as "the best armour technology". The protection solution must be individually tailored to every platform and scenario. That includes the threat scenario, hull design, payload restrictions, mobility aspects and cost-effective modularity concepts. The winner is the supplier that can incorporate all the needs and requirements of the customer, bring out the best of the materials and contribute to increased survivability for the end-user.

PARTNERS IN REVOLUTIONARY BALLISTIC PROTECTION

IBD NANOTech
4th Generation Armor Technologies
high protection – low weight



During Eurosatory 2010 the IBD Group presented new nano-ceramic and nanometric steel technologies that had both improved ballistic properties and weight savings of up to 30%.

Just one year later IBD has developed a protection kit, with STANAG 4569 Level 3 capabilities, which weighs just 32 kg/m² and has improved performance against IEDs. A standard kit weighs 60kg/m² and offers only normal protection.

These important weight savings help balance the needs for higher protection and the requirements for higher mobility, payload and reduced life cycle costs.

Åkers Krutbruk has now started up production of vehicles equipped with NANO material at competitive costs. NANO materials are examples of the close cooperation between IBD and Åkers Krutbruk.



ÅKERS KRUTBRUK ARMOURS ENGINEERING VEHICLES

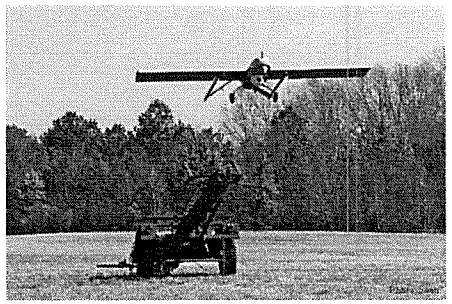
Åkers Krutbruk has entered into cooperation with Pon Equipment to protect Caterpillar Bulldozers for the Swedish Armed Forces.

From the onset of the project Åkers Krutbruk took the initiative and designed a solution with a non-aggressive appearance. Thus meeting the requirements for survivability, visibility and operational performance as well as easy access to maintenance points.

The driver's compartment is protected by transparent armour, or armoured glass, with special protected frames. The large and overlapping ballistic non-transparent armour panels provide a high coverage rate.

The most vital aspect of this design is that it has been specially crafted to provide exceptionally high protection while maintaining the look and feel of an unprotected bulldozer. The integrated protection is not visible inside or outside. The benefit being that a civilian looking vehicle is less likely to draw fire in a hot zone.

The armour package adds relatively little weight to the bulldozer due to the use of a combination of sophisticated materials. The protection level (classified) can be upgraded to meet various threats in combat. The outcome is a worldwide unique protection system for Caterpillar Bulldozers.



PROTECTING UNMANNED AERIAL VEHICLE SYSTEMS

Åkers Krutbruk is working with SAAB to provide protection for the Tactical Unmanned Aerial Vehicle System (TUAV) to the Swedish Armed Forces. To date SAAB has delivered two complete TUAVs, including the aircrafts, ground stations, intelligence units and ancillary equipment.

Åkers Krutbruk has supported SAAB with both technology and know-how regarding engineered survivability. The systems were completed and delivered during 2011.

EXTREME WELDING – KEEPING IT TOGETHER!



One of the most important components in the design and production of mine and IED protection systems is high quality welding that can handle extreme pressure.

Jarmo Meriläinen has solid experience in welding qualification. He has been recruited to ensure that welding techniques and technology develops at the same pace as protective materials. Here he tells us a little bit about how he has made that happen:

"The first thing we had to do was make sure that all the welders we already had were qualified. We also had to make sure everyone we employed to maintain our increased production levels had proper qualifications. Secondly we had to assure the quality of the welding process, in accordance with ISO 15614. My focus is totally on obtaining the best welding – extreme materials require extreme welds to survive extreme situations."



Photo: Per Oscarsson

The Newest Members of Our Dream Team

DYNAMIC TEAM - INNOVATIVE WORKPLACE

Åkers Krutbruk is passionate about creating new opportunities for employees while growing through responsible development and recruitment.

The work environment at Åkers Krutbruk is characterized by an entrepreneurial spirit and 'can do' atmosphere. To a large extent new personnel choose Åkers Krutbruk for its professionalism and ability to transform new opportunities into attractive missions with long-term social responsibility.

Our success is due to a corporate culture created by our highly motivated, dedicated and focused employees. We work with devotion and enthusiasm to serve customers, to develop productive assets, and to improve our customers' satisfaction. We are as much about commitment, values and passion as we are about the services and products we offer.

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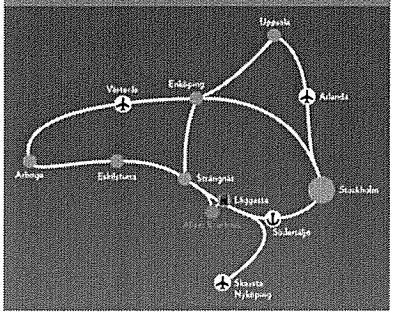
Highest creditworthiness

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Åkers Krutbruk has been certified with a triple-A by Soliditet in Sweden – A symbol of highest creditworthiness.

ÅKERS KRUTBRUK PROTECTION AB - BASIC FACTS

- Founded in 1552 by King Gustav Vasa
- Produced gun powder for over 450 years
- Part of the IBD Deisenroth Engineering family - World leader in advanced protection solutions for military vehicles
- Cutting edge R&D department
- State of the art development facility
- Own testing grounds
- ISO-certified (9001:2008 and 14001:2004)



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