

DRDO claims breakthrough in using solar energy for heating at night

By Vijay Mohan

Tech to make troops' shelters cosy

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- *It has a thermal trap area over the roof that utilises greenhouse concept for creating a tunnelling effect to trap solar heat in the shelters for the troops*

The Defence Research and Development Organisation (DRDO) has claimed to have made a breakthrough in developing technology for utilising solar heat harnessed during the day for heating rooms during the night at extreme altitude.

The Defence Institute of High Altitude Research (DIHAR), a DRDO laboratory based at Leh, has developed a shelter for troops that uses non-conventional energy for heating, instead of fossil fuel. The shelter, costing about Rs 60 lakh, was tested through the winter at Chang La, located at 17,600 feet in Ladakh, with temperature as low as minus 40°C. The DRDO established the world's highest research station there last year.

Scientists at DIHAR said while solar energy could be harnessed and stored in batteries for later use, the same is not applicable for solar heat and conventionally solar heat can be used only while the sun is shining. Claimed to be the only kind of shelter, it utilises phase change materials (converting solid to liquid and liquid to solid on change of temperature, thereby releasing heat) to store thermal energy collected from evacuated tube solar collectors. It has a greenhouse based thermal trap area over the roof and utilises greenhouse concept for creating a tunnelling effect to trap solar heat in the shelter.

“The shelter maintained a temperature of 7-10°C when the ambient temperature stood around minus 30°C. Other shelters in similar conditions have temperature of minus 10-15°C,” a DIHAR scientist said. “However, there is a need to operate a diesel generator for six hours during the peak winter months (January and February) when the temperature falls below minus 30°C,” he said.

At present, the Army uses “bhukaris” and generator-run electrical appliance to heat spaces like barracks and bunkers in Ladakh as well as the North-East, consuming lakhs of litres of kerosene and diesel every year. The non-conventional energy shelter would be environmentally beneficial in ecologically sensitive areas, besides generating carbon credits.

Indo-French aircraft deal may benefit TAAL, says company CEO

The company is associated with the DRDO's unmanned combat vehicle project Rustom 2
By Gireesh Babu

Taneja Aerospace Aviation Ltd (TAAL) expects to benefit if India and France strike the proposed deal to bring in Dassault Rafale aircraft to the country, as the company has been successfully evaluated by the aircraft manufacturer, a senior management official of TAAL said.

Speaking to reporters on the sidelines of a conference on defence manufacturing technologies, organised by the Tamil Nadu Technology Development & Promotion Centre of CII, Sudhir Kumar, CEO, TAAL said, "If the French aircraft Dassault Rafale comes we are likely to get some business because Dassault Aviation may give some work. They have already evaluated us and they have finding that we can work for them."

According to reports, both the countries are in talks for a proposed \$8.9 billion contract for purchase of fourth-generation Dassault Rafale fighter jets for the Indian Air Force.

At present, TAAL is indirectly handling some works for Rafale, through an Israel-based armament company, under which it supplies certain structural assemblies and pressurised containers to the company in Israel.

TAAL, started with manufacturing of aircraft and the structural assemblies for Vikram Sarabhai Space Centre(VSSC) and Indian Space Research Organisation (Isro) for its space launch vehicles, also works projects for Hindustan Aeronautics Ltd and Defence Research and Development Organization (DRDO).

It is also associated with Rustom-2, an unmanned combat air vehicle developed by DRDO, which is likely to fly shortly. It has been working in two Base Repair Depots (BRDs) of Indian Air Force, where the overhauling of aircraft takes place. Currently, it is working in two such Depots -- in Kanpur and Nasik.

Last year, the company posted a turnover of around Rs 56-57 crore. He said that the company see opportunity in offset activities by overseas firms in India and continuously engage with the foreign players for such activities.