



FOR IMMEDIATE RELEASE

MAINSTREAM DEMONSTRATES WORLD'S FIRST HYDROCARBON-BASED ENVIRONMENTAL CONTROL UNIT

DATELINE: ROCKLEDGE, FL; October 26, 2005... Mainstream Engineering Corporation, a leading research and development company specializing in advanced thermal control and energy conversion, has successfully demonstrated the world's first hydrocarbon-based environmental control unit (HECU) for military shelters. The 60,000-Btu/hr (5-ton_R) HECU uses propane as the working fluid. Why use Propane? - Europe has already banned HCFC refrigerants and will also be banning the use of HFC refrigerants in the near future because of their very large Global Warming Potential (GWP). While the new "environmentally-safe" R-410A has no ozone depletion potential, it has a GWP of 1890. Alternatively, Propane, which is used in this HECU unit (and also has no Ozone depletion potential), has an extremely low GWP of only 11. Europe is currently taking steps to meet the Kyoto Protocol, which calls for quantitative reduction of greenhouse gases (including HFCs) for the period 2008-2012. This includes restricting the use of any refrigerant with a Global Warming Potential (GWP) in excess of 150. This means that even new HFC-410A ECU's will be banned from use in these NATO nations. Mainstream has a demonstrated history of leadership in this area, being the only ECU manufacturer offering an environmentally-safe R-410 ECU, known as the MECU. They are once again anticipating future trends and have developed the next step in reduced environmental impact with their HECU. According to Dr. Scaringe of Mainstream, "It is a system with outstanding environmental qualities and unbeatable efficiency and performance." Mainstream's HECU is smaller, lighter and more efficient than existing military ECUs, including the HCFC22-based A/E32C-39, the HFC134a-based field deployable ECU (FDECU), and the HFC134a-based lightweight ECU (LECU). The Coefficient of Performance in Cooling (COP_c) of the HECU has been demonstrated to be 13% better than a comparable HFC-410a ECU at some operating points and on average 5.7% better over extended operating ranges. The measured data was also compared to published test data for the field-deployable environmental control unit (FDECU), revealing that the COP_c of the HECU is on average 25% better than the FDECU.

The HECU will expand Mainstream's existing military product line that includes a 60,000-Btu/hr (5-ton_R) modular environmental control unit (MECU). Mainstream's HFC-410A-based MECU is currently the smallest, lightest, and most efficient ECU available. The HECU, when completed, will surpass the MECU. Both units will be available with or without nuclear, biological, and chemical (NBC) protection and are compatible with all military shelters including TEMPER, MGPTS, and CP EMEDS.

About Mainstream Engineering Corporation

www.mainstream-engr.com

Mainstream Engineering Corporation is a solutions-oriented research, development and manufacturing small business founded in 1986. Our primary mission is to transition advanced thermal control and energy conversion technology into high-quality and cost-effective commercial products. Military products include lightweight diesel/JP8-fueled electric generators and environmental control units. Commercial products include the QwikProduct™ line for heating, ventilation, air conditioning, and refrigeration (HVAC/R) technicians, details of which can be found at www.qwik.com. Areas of expertise include heat transfer, fluids, thermodynamics, mechanics, chemistry, nano-technology, and power.

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