GENERAL DYNAMICS
Land Systems Division
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Inter-Office Memo

FO/dr:84-3
13 January 1984

To: J. J. McCuen

xc: D. E. Brown, N. W. Hammes, R. G. Hill, F. D. Luksik

Subject: Use of Personnel Heater for Pre-heating

1. It is suggested that the heat from the personnel heater be used to pre-heat the engine compartment during extreme cold weather. Detachable ducting from the heater exhaust port could be run into the power pack compartment. Tarpaulins would be used to cover the back deck, air intake, exhaust duct opening, and oil cooler openings to entrap the heated air. The advantages would be: a. Help in first start attempts. b. Reduced starting intervals in order to keep the power pack warm as prescribed in the Operator's Manual. This will result in fuel savings. c. Reduce the IR signature by directing the heat into the power pack compartment and the IR signature of the engine in that starts would not be needed as often. This would be especially true in a static position.

2. The heat could also be used to thaw out starters that are frozen by water. Experience shows that after water fording at the tank plants, some starters would freeze. The heat could be used to thaw the starter especially in a combat situation. This would save time in pulling a starter in emergency situations, until a more suitable place is found to pull the starter for maintenance.

3. The batteries could be warmed with the use of the heater. As temperatures drop, the specific gravity also drops. The heated air would warm the batteries and cause a rise in specific gravity enhancing a first start attempt in conjunction with a heated engine compartment.

4. Experience has shown when maneuvering in snow and snow-covered trees, snow is ingested into the air intake. The snow turns to water and will freeze the "V" packs in place after the power pack has been allowed to cold soak. The heated air from the heater exhaust could be used to melt the ice.

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5. Advantages are realized in saving maintenance time and using the heat source that is already available to all the vehicles. In addition, units might not have ready excess to an external heat source. This is especially true in a field environment

6. The ducting would be made part of the BII.

7. It is suggested this be brought to the attention of our design engineers to conduct a feasibility study with the possibility of testing at CRTC.

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