

## **EXTREME COLD (continued)**

- Extreme cold causes many problems:
  - \* Lubricants thicken or congeal
  - \* Batteries may freeze or lose electrical efficiency
  - \* Fuel may not readily vaporize for combustion
  - \* Various materials will become hard, brittle, and easily damaged

**-Cooling System.** Inspect for leaks and general condition. Make sure clamps are tight and there is enough fluid in expansion tank. If system needs service, notify unit maintenance.

- **Fuel Tank.** Do not allow fuel tank to remain partially empty for a long period in extremely cold weather. Fill to filler neck after each work period to help avoid water condensation in the fuel tank. Remove all ice and snow from around filler neck before refueling.

### **- Electrical System.**

- \* Inspect battery cables, wiring harnesses, and wiring. Notify unit maintenance if damaged.
- \* Use lights and other electrical equipment as little as possible when system is not charging.

- **Lubrication.** Lubricate in accordance with the TM.

## **Engine Operation.**

- In cold weather conditions, the IHMEE may be equipped with a cold weather kit capable of heating the engine block prior to starting the vehicle, assisting the starting procedure, and maintaining the batteries' charge in cold weather conditions. Refer to TM 5-2420-230-10 for cold weather kit operation.

## **Engine Operation(continued)**

- If it will be necessary to regularly operate the IHMEE in temperatures below 0 °F (-18 °C), and the vehicle does not have a cold weather kit, notify Unit maintenance.
- Before starting, make sure fuel and oil in engine are thin enough to flow. If oil drips from dipstick, it is thin enough for engine to be started. Failure to observe this caution could result in damage to equipment.

## **Engine Warm-Up (Above 0 °F (-18 °C)).**

**NOTE: The warm-up period depends on the ambient temperature. Care should be taken at lower temperatures to allow vehicle to warm up sufficiently.**

- Operate vehicle carefully, avoiding high loads and speeds until temperatures and pressures reach normal operating range.

## **Cold Weather Warm-Up (0 °F (-18 °C) and Below).**

- In addition to the normal warm-up procedures, the hydraulic systems will require additional warm-up procedures during very cold weather (0 °F (-18 °C) and below).

**NOTE: During cold weather operations, the hydraulic functions may operate slowly. Do not attempt Front-End Loader (FEL) or backhoe operations until the hydraulic oil has reached operating temperature.**

- To allow hydraulic oil to reach normal operating temperature:
  - (1) Run engine at half speed for 5 min.
  - (2) Move all controls slowly. Cycle boom and bucket functions until hydraulic oil has reached normal operating temperature and functions move at normal speed.

## **COLD TEMPERATURE OPERATION (continued).**

- For operating of equipment in expected continuous temperatures below 0 °F (-18 °C), remove lubricants prescribed in TM for temperatures above 0 °F (-18 °C). Re-lubricate with lubricants specified in TN for temperatures 0 °F to -50 °F (-18 °C to -46 °C). After changing to OEA, drain one pint of oil from oil sampling valve.
- Low idling speed during extremely cold temperatures can result in incomplete combustion and formation of heavy deposits on valves.
- Run engine at reduced speed only long enough to circulate oil through engine, then increase speed and warm up engine.
- Cover front of radiator, if necessary, to bring engine up to operating temperature. Remove cover after warm-up to avoid overheating engine.
- Test brakes and equipment controls carefully.

## **Parking and Non-Use.**

- Park vehicle in sheltered place, if possible. Cover to protect engine, accessories, and controls from ice and snow.
- Run vehicle onto planks to prevent tires from freezing to ground. Block up bucket on SEE.
- Clean wet snow or mud from tires and hydraulic cylinders before it freezes.

## **OPERATION IN SNOW**

- Keep fuel tank full at all times.
- Keep snow and ice away from fuel filler opening to avoid condensation in fuel tank.
- Clean snow and ice away from exterior controls and indicators.

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## **INTERIM HIGH MOBILITY ENGINEER EXCAVATOR (IHMEE) COLD WEATHER OPERATION**

*This abbreviated checklist is not to be used as a replacement for the -10 series Technical Manuals or any other PMCS guide.*

**FM 9-207 Operation and Maintenance of Ordnance Materiel in Cold Weather contains detailed instructions for operation and Maintenance of equipment in Cold Weather.**

**FM 31-70 BASIC COLD WEATHER MANUAL contains detailed instructions for living and working in cold weather conditions.**

**TM 5-2420-230-10 contains detailed PMCS instructions for proper maintenance and operation.**

**NOTE: A very high standard of maintenance is essential to long term operation under conditions of extreme cold. Cold temperature can cause early failure of systems. Constant checking is necessary to prevent failures.**

## **EXTREME COLD**

- If operating in extreme cold, make sure proper operator protection is worn. Extensive preparation of the vehicle is required for extremely cold weather.

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