

OPERATIONAL EFFICIENCY OF AMV VEHs AND CREW IN KATHERINE/TINDAL AO

1. - Armoured Vehicle (M113) operations within the northern areas of Australia, particularly the Katherine/Tindal area, is reliant on the serviceability of the A vehicles.
2. The way in which these vehicles stand up to the operational environment and their maintenance by crews is relative to the operational environment, its effect on crews, equipment and the time restrictions encountered.
3. The environment into which these vehicles and their crews will operate during the period - April - October, is hot and dry, and in parts extremely rough. This environment with its close savannah type vegetation, place considerable stress on both men and machinery. These stresses can be placed in six main groups: dust, heat, lack of water, distances, type of terrain and associated vegetation.
4. The heat from both sun and vehicle engine leads to a dramatic increase in water usage, with a consumption rate, which we experienced on NORTHERN EXPLORER, of some 7 - 8 litres of water per man per day. This is on top of high water usage level for the vehicle as a result of continual engine temperatures, around 200°F, culminating in 5 - 10 litres of water lost from radiators through evaporation. This means that there needs to be an increase in water carried, or the use of local water sources. The latter being very scarce in the dry season.
5. This heat also places increased stress on oils and lubricants used, combined with wear and tear through dust contamination, will cause increased wear on engines, gears and bearings, so increasing the need for constant inspections and replacement when necessary of these areas within the restrictions of operational activities and requirements.
6. Contamination from dust and foreign objects will mean greater quantities of filters and replacement, oils and lubricants will be required to minimize wear to vehicles internal functions. Good quality water will be important, so as to promote longevity of radiators and cooling systems is concerned. Due to the high mineralization levels in bore water within the area, this will have an adverse on systems if such water has to be used.

7. Dust will also place tactical restrictions on vehicle use, due to dust plumes and diminishment of the level of visibility within areas of high vehicle activity.

8. -The terrain and the extent of operational distances, place high stress on the suspension and tracks of A vehicles. In our experience, the rubber track pads were under high levels of wear, due to the coarse gravels of the tracks, roads and extensive rocky areas. Damage to shock absorbers and torsion bars can be expected, due to the combination of operational speeds, the type of terrain and vegetation encountered.

9. Due to the type of close vegetation, external storage upon the vehicles will have to be minimized. Additional amounts of equipment being carried will reduce internal stowage/person space available. Damage to radio antennas and fixtures will occur unless crew remain alert and adopt a commonsense approach at all times. This closeness of vegetation also will reduce visibility and mobility of A vehicles to some extent. The average distance of visibility within these areas is around 100 - 200M. This also tends with the combination of heat and lengthy periods of continual operations to promote driver fatigue, thus slowing down movement and crew operating times to some extent.

10. Due to the strong sun, interior vehicle temperature increases quickly during the height of the day when stationary, and this places extra stress on both crew, passengers and the vehicle. Vehicle hides within shade will be important tactically, though due to the height and nature of vegetation, shade cover is at a minimum.

11. From the evidence we encountered, operations during "the wet" would be a problem, as all water courses flood. The Fergusson River fills to a level of some 40 - 60 feet. The dry dirt tracks would soon turn to mud under high traffic levels, if not flooded by rivers and creek already.

12. Vegetation growth increases and so movement would be greatly slowed. Some grasses of the area are known to grow up to 3 metres high soon after rain.

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