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सभी पत्राचार महाप्रबंधक के नाम से किए जाए अन्य किसी अधिकारी के नाम से नहीं
All correspondence should be addressed to the General Manager and not to any officer by name.



भारत सरकार
GOVERNMENT OF INDIA
रक्षा मंत्रालय
MINISTRY OF DEFENCE
भारी वाहन निर्माणी
HEAVY VEHICLES FACTORY
आवडी/AVADI,
चेन्नै/CHENNAI-600 054
दिनांक/DATED : 11/01/2019

No. 65019/DDO/ALT.COMM/23rd ACM/18-19

The Director,
In Service Eqpt (AC),
Dte. Gen. Mechanized Forces
General Staff Branch,
IHQ of MoD (Army),
DHQ PO, New Delhi – 110 011.
Fax No. 011-23335094/96

(Kind Attn: Lt. Col. Surender Singh, GSO-1, Mod (AC))

Background (User requirement): There is no provision to check the health of the batteries of T-90 tank, while fitted on the tank and Provision of adapter with lead for maintenance of trickle charge of tank battery as part of 1:1 SPTA. The same would lead to avoidable extraction of Battery for charging/maintenance. To overcome the above issue, point was included in Alteration committee meeting.

Objective : To check whether the system offered by the firm fulfills the user requirement or otherwise. The live charge status of the battery to be monitored to check the health of the batteries with the provision of suitable digital voltmeter. The batteries can be trickle charged from the solar power source which is fitted on the tank with a provision of adapter with lead.

The demonstration was conducted by M/s Rugged solar products (Indian subsidiary- M/s Composite synergy solutions) Solar panel systems on 20.09.2018 and 21.09.2018 at HVF in T90 Tank in the presence HVF officials, representatives of CQA (HV), CQA (AVL), CQA (L) DGMF and MAG No. 6.

20.09.18 (Following were present)	12.11.18 (Following were present)
Shri	Shri
Dhanraj -SSO-1 CQA(HV)	Dhanraj -SSO-1 CQA(HV)
S.P.Rama Asst Controller CQA(L)	HMT Rajpal Singh CQA(AVL)
Ajit Kumar Nirala JE (QA)/AVL	Sub LK Baliar Singh MAG NO.6
Nk Sub Salavvar Ali MAG NO.6	LD L.N.Prabhu DGMF/PMT
LD L.N.Prabhu DGMF/PMT	Boopathi B JWM/HVF
S Shankar JWM/HVF	
Manpreet Singh (Firms rep)	Manpreet Singh (Firms rep)
Prabhjit Singh saran (Firms rep)	

To carry out the trials following items has been bought by the firm

1. Solar panel (1 PIECE)----for the charging of the batteries via powering the circuit box
2. Circuit box (SM24V) -2 PIECES – Maintenance device for the maintenance of the batteries
3. Digital Monitors 4 PIECES – Monitoring unit for monitoring the live charge of the batteries.
4. Wires

a) Solar panel and monitoring devices were fitted on T-90 Gun tank no.129 (solar panel exposed to the sunshine) and T-90 command tank no.115 (solar panel not exposed to the sunshine) in presence of above persons.

b) Observations were made by GA rep from 22.09.18 to 27.10.2018 (36 days) and the observations are enclosed.

Summary of observations :

Case no.1 : Solar panel exposed to the sunshine


Battery no.	Live charge percentage Max	Live charge percentage Min	Voltage	Voltage
			Max	Min
1	88	85	12.8	12.6
2	90	82	12.8	12.6
3	90	84	12.8	12.6
4	88	85	12.8	12.6

Case no.2 : Solar panel not exposed to the sunshine

Battery no.	Live charge percentage Max	Live charge percentage Min	Voltage	Voltage
			Max	Min
1	78	72	12.5	12.3
2	100	100	12.5	12.3
3	77	71	12.5	12.3

Conclusion : It is understood that in the unit, batteries of tanks are charged manually by extraction from tanks every Monday. Trial was conducted for 36 days. The battery was kept charged by the trickle charger automatically without any manual intervention. At the end of the trial, tank was started without replacing the batteries. With above observations it is found ^{As per U.S.} no need of extraction of batteries for charging purpose.

As such trickle chargers and monitoring system are found effective. In view of the above, Stakeholders are requested to forward the comments and suggestions latest by 05.02.2019. Later on, stowage arrangement to be decided by all stakeholders.


(PS UNNI RAJ)
WORKS MANAGER
FOR Sr.GENERAL MANAGER