



DEFENSE LOGISTICS AGENCY

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DLA LAND AND MARITIME-VAT

March 8, 2019

MEMORANDUM FOR RECORD

SUBJECT: Engineering Practice Study: "LEAKAGE INDUCTANCE TEST FOR MIL-PRF-21038".
Project Number: 5950-2018-073.

Findings and recommendations on Engineering Practice Study, dated 8 March 2019, are enclosed.

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Michael Radecki
Chief
Electronic Components Branch

ENGINEERING PRACTICES STUDY

TITLE: LEAKAGE INDUCTANCE TEST FOR MIL-PRF-21038

8 March 2019

FINAL REPORT

Study Conducted by DLA LAND AND MARITIME

Prepared by:

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ENGINEERING PRACTICE STUDY

LEAKAGE INDUCTANCE TEST FOR MIL-PRF-21038

8 MARCH 2019

PROJECT NUMBER: 5950-2018-073

- I. OBJECTIVES. The objective of this study was to determine whether Leakage Inductance testing should be added to MIL-PRF-21038 or MIL-PRF-21038/27 and how the testing would be performed.
- II. BACKGROUND. Users of MIL-PRF-21038 transformers have been having issues with excessive ringing on the primary side of the transformer which resulted in MIL-STD-1553 non-compliance and caused occasional bit errors communicating with other controls. The root cause has been determined to be high leakage primary inductance to center-tap. Since transformer designs vary, a leakage inductance test needs to be added for the total primary and each half of the primary (with secondary shorted) in lieu of additional waveform tests.
- III. RESULTS. The EP study project was opened and an initial draft was posted on the DLA Land and Maritime website. Inputs were solicited from all interested parties using our entire 5950 stock class email distribution list, which included military services, manufacturers, original equipment manufacturers, and user communities. Zero comments were received from distribution list. No specific direction was given to be able to achieve the leakage inductance test/requirement.
- IV. CONCLUSIONS. The results of this EP study were insufficient to support the addition of a Leakage Inductance test/requirement within MIL-PRF-21038 at this time. However, a G11 steering committee has an open item on the same Leakage Inductance concerns. If the steering committee, G11, has a positive direction to go with this then a project will be opened.
- V. RECOMMENDATIONS. Continue to monitor the user community and readdress this subject at a future date if any users express interest in the subject.