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19. ABSTRACT (Continue on reverse if necessary and identify by block number) THIS REPORT DESCRIBES THE INVESTIGATION OF THE METAL ARC-SPRAY PROCESS FOR NONSKID SURFACING ON BRADLEY FIGHTING VEHICLES (BFV) AND FOR STRESS CORROSION CRACKING (SCC) PREVENTION IN 7039 ALUMINUM ARMOR PLATE. FACTORS SUCH AS QUALITY, DURABILITY, AND PRODUCIBILITY WERE USED AS CRITERIA IN EVALUATING ARC-SPRAY PERFORMANCE. THE METAL ARC-SPRAY PROCESS WAS AN ATTRACTIVE ALTERNATIVE FOR THE TIME-CONSUMING AND LABOR-INTENSIVE TASKS OF WELD BUTTERING TO PREVENT SCC AND APPLYING EPOXY COATINGS WITH GRIT FOR NONSKID SURFACES. STUDIES OF SCC HAVE SHOWN THAT SURFACE TREATMENT PRIOR TO ARC-SPRAYING PLAYS A LARGE PART IN ITS PREVENTION. FURTHER RESEARCH HAS SHOWN THAT PEENING BY SHOT OR BRUSH ON THE EDGES ALSO WAS EFFECTIVE IN SCC PREVENTION. (OVER)			
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STRESS CORROSION CRACKING (SCC)
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X-RAY DIFFRACTION
SHOT PEEN
BRUSH PEEN
ROLL SWAG
BRADLEY FIGHTING VEHICLE (BFV)

19. ABSTRACT (CONTINUED)

THE NONSKID SURFACES PREPARATION DONE BY ARC-SPRAY APPEARED TO BE ACCEPTABLE. HOWEVER, IT WAS EVIDENT THAT THE ARC-SPRAYED NONSKID SURFACES HAD AN UNACCEPTABLE RAPID RATE OF WEAR. THE ONLY POSSIBLE ALTERNATIVE TO THE PRESENT ADHESIVE EPOXY AND GRIT APPLICATION METHOD AND ARC-SPRAY METHOD WOULD BE A PREMIXED EPOXY/GRIT COMPOUND SPRAYED FROM A SPECIALLY DESIGNED SPRAY GUN. A SUITABLE SPRAY APPLICATOR HAS NOT BEEN FOUND.