

NOTICE—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government hereby disclaims any liability, whether or not it is so stated on the drawing, specification, or other data. It is the policy of the Government to encourage the free use of its data by the public, and it is the policy of the Government to encourage the free use of its data by the public, and it is the policy of the Government to encourage the free use of its data by the public.

This standard has been approved by the Bureau of Naval Weapons, Department of the Navy, and is mandatory for use by that activity. All other military activities are required to employ this standard where suitable.

1. FOR THE PURPOSE OF THIS STANDARD, THE FOLLOWING TERM IS USED:

"JET STARTING POWER" (CONSTANT CURRENT) IS POWER SUPPLIED AT THE AIRCRAFT JET STARTING RECEPTACLE IN ACCORDANCE WITH THE FOLLOWING:

a. NAVY - (1) FOR 1,000 AMPERE STARTER:

INITIATED AT 0 TO 6 VOLTS DC. CONSTANT CURRENT OF 1,000 ± 100 - 0 AMPERES FROM THE INITIAL VOLTAGE UP TO 33 ± 2.8 - 0.8 VOLTS AND THEN MAINTAIN THAT VOLTAGE CONSTANT UNTIL A START HAS BEEN COMPLETED IN THE AIRCRAFT.

(2) FOR 650 AMPERE STARTER:

INITIATED AT A MINIMUM OF 13 VOLTS DC. REGULATED TO ATTAIN A CONSTANT CURRENT OF 650 ± 100 - 0 AMPERES WITHIN 100 MILLISECONDS WITH INITIAL TRANSIENT EXCURSIONS LIMITED BETWEEN 400 AND 1,000 AMPERES. MAINTAIN CONSTANT CURRENT UNTIL THE VOLTAGE HAS RISEN TO 28 ± 2.4 - 0.7 VOLTS AND THEN MAINTAIN THAT VOLTAGE UNTIL A START HAS BEEN COMPLETED IN THE AIRCRAFT.

b. USAF - INITIATED AT 28 VOLTS DC. AFTER INITIAL INRUSH AT INITIATION OF START, CURRENT CONSTANT AT 1000 ± 10 PERCENT - 0 PERCENT AMPERES AND BUILT UP TO 28 ± 1.5 VOLTS. THEN 28 ± 1.5 VOLTS FROM THAT CURRENT UNTIL A START HAS BEEN COMPLETED IN THE AIRCRAFT.

2.0 AIRCRAFT REQUIREMENTS.-

2.1 RECEPTACLE USED IN THE AIRCRAFT FOR JET STARTING POWER SHALL BE IN ACCORDANCE WITH STANDARD MS25018.

2.1.1 THIS RECEPTACLE SHALL BE IDENTIFIED ON THE EXTERIOR OF THE AIRCRAFT AS "JET STARTING RECEPTACLE".

2.2 THE SIGNAL FOR JET STARTING POWER SHALL BE SUPPLIED FROM THE AIRCRAFT BETWEEN THE CONTROL AND NEGATIVE PINS OF THE JET STARTING RECEPTACLE.

2.2.1 THE SIGNAL FOR JET STARTING SHALL BE SUPPLIED TO THE CONTROL PIN THROUGH A 20 OHM ± 10 PERCENT RESISTOR IN SERIES WITH THE CONTROL PIN.

2.2.2 FOR AIRCRAFT EQUIPPED WITH 1,000 AMPERE STARTERS THE SIGNAL SHALL BE POSITIVE 18.5 TO 29 VOLT DC ACROSS THE RESISTOR.

2.2.3 FOR AIRCRAFT EQUIPPED WITH 650 AMPERE STARTERS THE SIGNAL SHALL BE PROVIDED BY CONNECTING THE RESISTOR TO AIRCRAFT GROUND.

2.3 JET STARTING POWER DISCONTINUING PROVISIONS SHALL BE INCLUDED IN THE AIRCRAFT. THE SIGNAL SHALL BE REMOVED WHEN THE REQUIREMENT FOR JET STARTING POWER IS DISCONTINUED OR THE START HAS BEEN SATISFACTORILY COMPLETED.

2.3.1 THE JET START SHALL BE SATISFACTORILY COMPLETED WHEN THE ENGINE HAS REACHED A SELF-SUSTAINING RPM AND THE STARTING CURRENT HAS DECREASED TO BELOW THE FOLLOWING LIMITS:

(a) 250 AMPERES FOR 1,000 AMPERE STARTERS.

(b) 150 AMPERES FOR 650 AMPERE STARTERS.

2.4 THE AIRCRAFT SHALL INCLUDE DEVICES FOR MAKING AND BREAKING THE JET STARTING POWER.

2.5 WHEN MEASURED AT 2 VOLTS, THE RESISTANCE OF THE STARTING CIRCUIT, BETWEEN THE POSITIVE AND NEGATIVE PINS OF THE RECEPTACLE, SHALL NOT EXCEED:

(a) 0.040 OHMS FOR THE 1,000 AMPERE STARTER.

(b) 0.020 OHMS FOR THE 650 AMPERE STARTER.

3.0 GROUND ELECTRIC SUPPLY REQUIREMENTS.-

3.1 JET STARTING POWER SHALL BE SUPPLIED THROUGH ELECTRIC CABLE ASSEMBLY, STANDARD MS25019.

3.2 THE SIGNAL FOR JET STARTING SHALL BE SUPPLIED BY EITHER THE AIRCRAFT OR BY PLACING AN EMERGENCY "JET STARTING SWITCH" LOCATED ON THE PANEL OF THE GROUND ELECTRIC SUPPLY IN THE "EMERGENCY" POSITION.

3.3 UPON RECEIPT OF A JET STARTING SIGNAL, THE FOLLOWING SHALL OCCUR WITHIN THE GROUND ELECTRIC SUPPLY IN THE ORDER LISTED:

(a) THE MAIN POWER CABLE SHALL BE DISCONNECTED FROM THE STARTING CABLE.

(b) WHEN A START IS INITIATED, GROUND ELECTRIC SUPPLY CIRCUIT CONDITIONS SHALL BE ESTABLISHED TO PROVIDE JET START POWER IN ACCORDANCE WITH THE SIGNAL.

(c) IF, AT ANY TIME, THE SIGNAL IS REMOVED, THE MAIN POWER SOURCE SHALL BE DISCONNECTED FROM THE STARTING CABLE.

3.4 IT IS PERMITTED TO DISCONNECT THE MAIN POWER SOURCE FROM THE POWER CABLE WHEN THE VOLTAGE IS WITHIN FINAL STARTING VOLTAGE LIMITS AND THE CURRENT IS LESS THAN:

(a) 200 AMPERES FOR THE 1,000 AMPERES STARTER.

(b) 100 AMPERES FOR THE 650 AMPERES STARTER.

3.5 IF A SIGNAL IS MAINTAINED AFTER COMPLETION OF START, THERE SHALL BE NO RECYCLING OF THE JET STARTING POWER UNLESS THE SIGNAL IS REMOVED AND REAPPLIED.

THIS IS A DESIGN STANDARD. NOT TO BE USED AS A PART NUMBER.

P.A. Navy - BuWeps Other Cust	TITLE CRITERIA, JET ELECTRICAL STARTING SYSTEM, DC	MILITARY STANDARD
		MS17794(WEP)
PROCUREMENT SPECIFICATION	SUPERSEDES: MS33527(ASG) FOR BUWEP'S PURPOSES	SHEET 1 OF 1