

FED. SUP CLASS

2620

THE TIRE SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SPECIFICATION MIL-T-5041 EXCEPT AS SPECIFIED HEREIN

SIZE	PLY RATING	STATIC LOAD RATING LBS.	VERT. LOAD LBS.	INFL. PRESS PSI RATED	BURST PRESS PSI MIN.	BEAD WIDTH IN. MAX.	WEIGHT LBS. MAX.	STATIC UNBALANCE OZ. MAX.	TREAD	MOLD SKID DEPTH INCH	DEFLC + 3% - 4%
18X5.7-8.00	14TL 1/	6,200	45,000	215	970 2/	1.50	15.5	2.5	RIB 3/	0.21	32

1/ TL TUBELESS

2/ NEW TIRE

3/ AT LEAST FOUR, BUT NOT MORE THAN SEVEN RIBS. THE TREAD GROOVES SHALL BE SHAPED, INSOFAR AS PRACTICABLE TO PREVENT FOREIGN OBJECTS FROM BEING TRAPPED BETWEEN THE RIBS. FABRIC REINFORCED TREAD.

TIRE AND RIM DATA: SEE FIGURE 1

THE TIRE COVERED BY THIS DRAWING SHALL BE SUITABLE FOR USE AND PROVIDE REASONABLE SERVICE LIFE DURING ALL NORMAL OPERATIONS AT TAKEOFF AND LANDING SPEEDS INDICATED HEREIN ON ALL TYPES OF RUNWAYS AND ON AIRCRAFT CARRIERS.

A MINIMUM OF SEVEN TIRES SHALL BE USED FOR QUALIFICATION. ALL TIRES SHALL BE BUILT USING THE SAME COMPOUNDS AND PROCESSING TECHNIQUES. THE TIRES SHALL BE EXAMINED AS FOLLOWS:

**DIMENSIONS:** ALL TIRES SHALL BE INFLATED TO OPERATING PRESSURE AND ALLOWED TO STAND 4 HOURS MINIMUM AT ROOM TEMPERATURE AFTER WHICH THE PRESSURE LOSS DUE TO GROWTH SHALL BE REPLACED. THE TIRE DIMENSIONS AT 400 PSI SHALL BE WITHIN THE LIMITS OF FIGURE 1. IN ADDITION, DYNAMIC TEST TIRE NUMBER ONE SHALL BE MEASURED DURING THE ENVELOPE COMPLIANCE PORTION OF DYNAMIC TESTING TO DETERMINE GROWN AND THROWN COMPLIANCE (FIGURE 1).

**TIRES 1, 2 & 3:** TIRES SHALL BE INFLATED TO GIVE A RATED DEFLECTION AT RATED LOAD. ALL TIRES SHALL CONSECUTIVELY WITHSTAND 21 CYCLES OF TEST A, 2 CYCLES OF TEST B, 2 CYCLES OF TEST C, 25 CYCLES OF TEST D, 1 CYCLE OF TEST E AND 1 CYCLE OF TEST F IN THAT ORDER.

**PHOTOGRAPHIC PROOF OR PHOTOS OF AN ACCURATE MEASURING DEVICE SHOWING ENVELOPE COMPLIANCE (FIGURE 1) SHALL BE OBTAINED FOR TIRE NUMBER 1 AS FOLLOWS:**

- (a) PRIOR TO START OF TEST, BUT AFTER TIRE HAS BEEN INFLATED AND MAINTAINED AT SPECIFIED INFLATION PRESSURE FOR 24 HOURS.
- (b) AFTER 5 CYCLES OF TEST A.
- (c) AFTER EVERY 16 CYCLES THEREAFTER.
- (d) AFTER COMPLETION OF ENTIRE TEST SPECTRUM.

THE TIRE SHALL SHOW NO EVIDENCE OF SLIPPAGE THAT WOULD DAMAGE THE AIR SEAL BETWEEN THE TIRE AND RIM.

**NOTE:** FAILURE OF ANY TIRE AT ANY POINT OF THE ABOVE TEST SPECTRUM SHALL DISQUALIFY ALL PREVIOUSLY TESTED TIRES. THE TEST PROCEDURES SHALL BE FOLLOWED UNTIL 3 CONSECUTIVE TIRES PASS THE ABOVE TESTS.

**TIRE 4:** TIRE SHALL WITHSTAND TEST G, 10 CYCLES OF TEST H, 10 CYCLES OF TEST D AND THEN BE SUBJECTED TO THE HYDROSTATIC BURST TEST (TEST J).

**TIRES 5, 6 & 7:** TIRES SHALL CONSECUTIVELY WITHSTAND 5 CYCLES OF TEST H, 20 CYCLES OF TEST I, AND 25 CYCLES OF TEST D. TIRE NUMBER 7 SHALL BE SUBJECTED TO THE HYDROSTATIC BURST TEST (TEST J).

**NOTE:** FAILURE OF 5, 6 OR 7 TIRE AT ANY POINT DURING THE ABOVE TEST SPECTRUM SHALL DISQUALIFY THOSE TIRES. THIS PROCEDURE SHALL BE FOLLOWED UNTIL 3 CONSECUTIVE TIRES SUCCESSFULLY COMPLETE THE TESTING FOR TIRES 5, 6 AND 7.

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This military standard is approved by NAVAL AIR SYSTEMS COMMAND, Department of the Navy and is mandatory for use by "A" activity. All other military activities are required to use this standard where suitable.

P.A. NAVY - AS Other Cost	TITLE TIRE, PNEUMATIC, AIRCRAFT, 18 X 5.7 - 8.00 (NAVY), FABRIC REINFORCED TREAD	MILITARY STANDARD MS14196(AS)
PROCUREMENT SPECIFICATION	SUPERSEDES	SHEET 1 OF 4

DD FORM 672-1 (limited coordination)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

PROJECT NO. 2620-N208

PLATE NO. 14936

APPROVED 13 FEB 1981 REVISED

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- TEST A - NORMAL TAKEOFF** - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 9000 FEET WITH 6,200 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL, THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 11.88 FT/SEC/SEC FROM 0 MPH TO 230 MPH. THE TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL DISTANCE OF 4750 FEET HAS BEEN COVERED IN APPROXIMATELY 28 - 29 SECONDS. THE INITIAL TAKEOFF LOAD OF 6,200 POUNDS SHALL BE DECREASED LINEARLY WITH TIME TO 6,000 POUNDS AT 15 SECONDS AFTER START OF ROLL, THEN LINEARLY DECREASED TO 5,000 POUNDS AT POINT OF LIFT-OFF.
- TEST B - OVERLOAD TAKEOFF** - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 9,000 FEET WITH 9,350 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL, THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 11.98 FT/SEC/SEC FROM 0 TO 236 MPH. TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL DISTANCE OF 5,000 FEET HAS BEEN COVERED IN APPROXIMATELY 28 TO 29 SECONDS. THE INITIAL LOAD OF 9,350 POUNDS SHALL BE DECREASED LINEARLY WITH TIME TO 8,900 POUNDS AT 14 SECONDS AFTER THE START OF THE ROLL, THEN FURTHER DECREASED TO 7,200 POUNDS AT THE POINT OF LIFT OFF.
- TEST C - TAKEOFF AT 5,000 FEET ALTITUDE ON A HOT DAY** - THE TIRE SHALL BE TAXIED ON THE FLYWHEEL AT 40 MPH FOR 7,000 FEET WITH 6,200 POUNDS LOAD. UPON COMPLETION OF THE TAXI ROLL THE FLYWHEEL SHALL BE STOPPED AND THEN IMMEDIATELY ACCELERATED AT AN AVERAGE RATE OF 8.95 FT/SEC/SEC FROM 0 MPH TO 247 MPH. THE TIRE SHALL BE UNLANDED AFTER A TAKEOFF ROLL DISTANCE OF 7,300 FEET HAS BEEN COVERED IN APPROXIMATELY 40 TO 41 SECONDS, THE INITIAL LOAD (6,200 POUNDS) SHALL BE MAINTAINED FOR THE FIRST 7 SECONDS OF THE TAKEOFF ROLL THEN DECREASED LINEARLY WITH TIME TO 5,750 POUNDS AT 30 SECONDS AFTER THE START AND TO 5,000 POUNDS AT THE POINT OF LIFTOFF.
- TEST D - LANDING** - THE TIRE SHALL BE LANDED AGAINST A FLYWHEEL ROTATING AT A PERIPHERAL SPEED OF 196 MPH. THE FLYWHEEL SPEED SHALL BE DECREASED AT AN AVERAGE DECELERATION RATE OF 8.50 FT/SEC/SEC FROM 196 TO 40 MPH. THE LANDING ROLL DISTANCE OF 4,350 FT SHALL BE COVERED IN APPROXIMATELY 26 TO 27 SECONDS. THE INITIAL TIRE LOAD SHALL BE 10,000 POUNDS AT TOUCHDOWN LINEARLY DECREASED TO 3,600 POUNDS WITHIN 1 SECOND, THEN LINEARLY INCREASED TO 5,000 POUNDS AFTER 4,350 FT. THE TIRE SHALL THEN BE TAXIED ON THE FLYWHEEL FOR 9,000 FT AT 40 MPH WITH A 4,000 POUND LOAD. AFTER THE TAXI, THE 4,000 POUND LOAD SHALL BE MAINTAINED ON THE TIRE FOR A MINIMUM OF 15 MINUTES.
- TEST E - TAXI TO SIMULATE SIDE LOAD DURING TURNING** - ONE CYCLE OF TEST "E" SHALL CONSIST OF 25 CYCLES OF TEST "E<sub>1</sub>" AND 25 CYCLES OF "E<sub>2</sub>". THIS TEST SHALL CONSIST OF TAXI AT 35 MPH WITH THE TIRE LOADED IN A MANNER TO DUPLICATE THE LOADINGS OBTAINED DURING A .25G TURN. THE DISTANCE, VERTICAL AND SIDE LOADS SHALL BE AS SPECIFIED FOR EACH CONDITION. THE LOADING SHALL BE ACCOMPLISHED BY ROLLING THE WHEEL AT A YAW ANGLE RELATIVE TO THE DYNAMOMETER. VERIFICATION OF THE SPECIFIED LOADINGS IS REQUIRED. THE SIDE LOAD DEFLECTIONS SHALL BE RECORDED.

**"E<sub>1</sub>" - INBOARD YAW TEST (25 CYCLES)**

1. LAND TIRE ON FLYWHEEL WITH A PRESELECTED YAW ANGLE WHICH WILL GIVE THE REQUIRED LOADING.
2. INCREASE THE LOADING ON THE TIRE WITH A RADIAL LOAD (IN THE WHEEL PLANE) OF 4,680 POUNDS AND A SIDE LOAD (PERPENDICULAR TO THE WHEEL PLANE) OF 2,575 POUNDS ACTING INBOARD. MAINTAIN THIS LOAD FOR THE REMAINDER OF THE CYCLE
3. UNLAND THE TIRE WHEN A DISTANCE OF 300 FEET HAS BEEN COMPLETED WITH FULL LOAD.

**"E<sub>2</sub>" - OUTBOARD YAW TEST (25 CYCLES)**SAME AS "E<sub>1</sub>" EXCEPT WITH THE SIDE LOAD COMPONENT ACTING OUTBOARD.

ALTERNATE SIDE LOAD TEST - SAME AS "E<sub>1</sub>" AND "E<sub>2</sub>" EXCEPT IF UNABLE TO PERFORM CALIBRATION TESTS WITH AN INSTRUMENTED TEST AXLE TO VERIFY SIDE LOADS. THE YAW ANGLE USED FOR THE SIMULATED TURNING TESTS OUTLINED SHALL BE 9° WITH THE VERTICAL LOAD OF 4,680 POUNDS TO ALLOW FOR A DECREASE INSIDE LOAD DUE TO TREAD ABRASION.

**TEST F - TAXI OUT, REJECT AND RETURN TO STATION** - THIS TEST SHALL CONSIST OF 3 PHASES:

- PHASE 1: TAXI THE TIRE ON THE FLYWHEEL FOR 4,000 FEET AT 6,200 POUNDS LOAD AT 46 MPH. STOP THE FLYWHEEL UNDER FULL LOAD. REPEAT THIS THREE (3) TIMES SUCH THAT A TOTAL DISTANCE OF 12,000 FEET IS COVERED IN NO MORE THAN 210 SECONDS.
- PHASE 2: (A) WHILE UNDER THE 6,200 POUND LOAD, IMMEDIATELY ACCELERATE THE FLYWHEEL AT A MINIMUM RATE OF 12 FT/SEC/SEC TO 98 MPH. MAINTAIN THE 98 MPH SPEED FOR 3 TO 4 SECONDS.
- (B) DECELERATE AT AN AVERAGE RATE OF 7.9 FT/SEC/SEC TO ZERO (0) SPEED IN 18 TO 19 SECONDS.
- (C) DURING (A) AND (B), THE LOAD SHALL BE INCREASED LINEARLY FROM 6,200 POUNDS TO 7,100 POUNDS WITHIN 17 SECONDS, MAINTAINED AT 7,100 POUNDS FOR 11 TO 12 SECONDS AND THEN IMMEDIATELY UNLOADED TO 6,200 POUNDS.
- PHASE 3: MAINTAIN THE 6,200 POUND LOAD AND TAXI THE TIRE FOR 12,000 FEET AT 46 MPH. THIS PHASE SHALL NOT EXCEED 190 SECONDS.

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P.A. NAVY - AS Other Code	TITLE TIRE, PNEUMATIC, AIRCRAFT, 18 X 5.7 - 8.00 (NAVY) FABRIC REINFORCED TREAD	MILITARY STANDARD MS14196(AS)
PROCUREMENT	SUPERSEDES:	SHEET 2 OF 4

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- TEST G - CABLE BRUISE TEST - A NEW TIRE INFLATED TO 350 - 400 PSI (CARRIER LANDING PRESSURE) SHALL BE LOADED AGAINST A 1.375 INCH DIAMETER STEEL CABLE OR PLAIN ROUND BAR STOCK RESTING ON A FLAT PLATE DIRECTLY UNDER THE AXLE. A VERTICAL LOAD OF 45,000 POUNDS SHALL BE APPLIED, RELEASED AND RE-APPLIED AT A LOCATION 180° FROM THE INITIAL POINT OF LOADING.
- TEST H - CATAPULT CONDITION #1 - TIRE INFLATION PRESSURE SHALL BE 350 - 400 PSI, CORRECTED FOR FLYWHEEL DIAMETER. THE FLYWHEEL SHALL BE ACCELERATED AT AN AVERAGE RATE OF 14.0 FT/SEC/SEC FROM 0 TO 57 MPH. THE TIRE SHALL BE UNLANDED AFTER A ROLL DISTANCE OF 250 FEET HAS BEEN COVERED IN APPROXIMATELY 6 SECONDS. THE INITIAL LOAD OF 18,000 POUNDS SHALL BE INCREASED LINEARLY TO 36,400 POUNDS WITHIN 1.42 SECONDS, DECREASED LINEARLY TO 27,000 POUNDS AT 2.60 SECONDS, THEN DECREASED LINEARLY TO 18,000 POUNDS AFTER 6 SECONDS AT WHICH TIME THE TIRE IS UNLANDED.
- TEST I - CATAPULT CONDITION #2. TIRE INFLATION PRESSURE SHALL BE 350 - 400 PSI CORRECTED FOR FLYWHEEL DIAMETER. THE FLYWHEEL SHALL BE ACCELERATED AT AN AVERAGE RATE OF 14.0 FT/SEC/SEC FROM 0 TO 57 MPH. THE TIRE SHALL BE UNLANDED AFTER A ROLL DISTANCE OF 250 FEET HAS BEEN COVERED IN APPROXIMATELY 6 SECONDS. THE INITIAL LOAD OF 22,800 POUNDS SHALL BE INCREASED LINEARLY TO 31,800 POUNDS, WITHIN 1.42 SECONDS, DECREASED LINEARLY TO 23,600 POUND AT 2.60 SECONDS, THEN DECREASED TO 15,800 POUNDS AT 6 SECONDS AT WHICH TIME THE TIRE IS UNLANDED.
- TEST J - BURST TEST - THE TIRE SHALL BE SUBJECTED TO A HYDROSTATIC BURST TEST. THE PRESSURE SHALL BE INCREASED UNTIL THE TIRE FAILS. THE FAILING PRESSURE, DESCRIPTION OF FAILURE AND LOCATION SHALL BE REPORTED IN THE QUALIFICATION TEST REPORT.

AIR RETENTION - THE TIRE SHALL BE INFLATED TO A PRESSURE OF 350 PSI AND ALLOWED TO STAND FOR A PERIOD OF 24 HOURS AT WHICH TIME THE PRESSURE DROP DUE TO GROWTH SHALL BE REPLACED. THE TIRE SHALL THEN STAND AN ADDITIONAL 24 HOURS AT WHICH TIME THE PRESSURE SHALL BE MEASURED AND THE TIRE INSPECTED. THE AIR PRESSURE LOSS SHALL NOT EXCEED 5 PERCENT. THERE SHALL BE NO SIDEWALL BLISTERS, TREAD SEPARATION OR OTHER APPEARANCE OR PERFORMANCE DEFECTS.

INFLATED PROFILE - A SKETCH OF THE TIRE PROFILE AT THE RATED INFLATION PRESSURE AND 400 PSI SHALL BE PREPARED AND INCLUDED AS PART OF THE QUALIFICATION TEST REPORT.

QUALIFICATION TEST REPORT - THE QUALIFICATION TEST REPORT SHALL LIST THE RESULTS OF ALL QUALIFICATION TESTS AND CONSTRUCTION DETAILS OF THE QUALIFICATION TEST SAMPLE IN THE GENERAL FORM SHOWN IN FIGURE 6 OF MIL-T-5041 WITH DIMENSIONS LISTED AT RATED INFLATION AND 350 PSI. THE REPORT SHALL LIST THE MANUFACTURER'S TEST NUMBER. TWO COPIES OF THE QUALIFICATION TEST REPORT, TOGETHER WITH THE DATA AND MATERIAL SPECIFIED ABOVE AND IN MIL-T-5041 SHALL BE FORWARDED TO THE NAVAL AIR SYSTEMS COMMAND, WASHINGTON, DC 20361, ATTENTION: AIR-53032.

## NOTES:

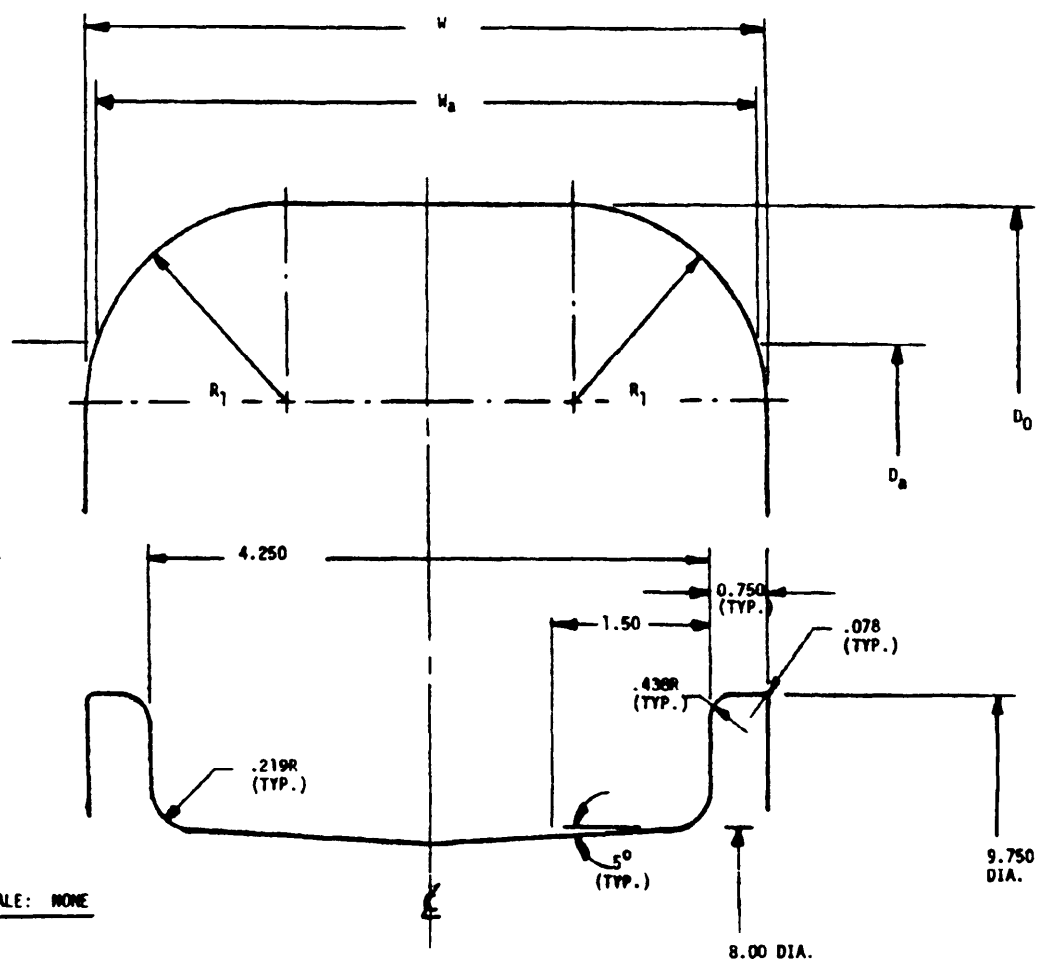
1. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL EXCEPT THAT REFERENCE ADOPTED INDUSTRY STANDARDS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
2. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.

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P.A. NAVY - AS Other Cost	TITLE TIRE, PNEUMATIC, AIRCRAFT, 18 X 5.7 - 8.00 (NAVY), FABRIC REINFORCED TREAD	MILITARY STANDARD <b>MS14196 (AS)</b>
MIL. SPECIFICATION	SUPERSEDES:	
		SHEET 3 OF 4

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SCALE: NONE

TIRE DIMENSIONS (INCH)	RATED INFLATION PRESSURE MIN.	MAX.	350 PSI INFLATION PRESSURE MIN.	MAX.	GROWN @ 350 PSI MAX.	GROWN & THROWN @ 350 PSI, 230 MPH MAX.
OUTSIDE DIA. ( $D_0$ )	17.3	17.90	17.45	18.00	18.50	18.90
SECTION WIDTH ( $W$ )	5.35	5.70	5.45	5.80	6.10	6.10
SHOULDER DIA. ( $D_s$ )	--	16.20				
SHOULDER WIDTH ( $W_s$ )	--	5.00				
RADIUS ( $R_1$ )	1.50	--				

THE CONTOUR OF THE AIRCRAFT TIRE SHALL NOT EXCEED THE ENVELOPE SHOWN ABOVE. THIS CONDITION MUST BE MET BEFORE, DURING, AND AFTER THE DYNAMIC TESTING PORTION OF QUALIFICATION TESTING AND WHILE THE TIRE IS ROTATING EQUIVALENT TO GROUND SPEEDS RANGING FROM 0 TO 230 MPH WITH THE TIRE INFLATED TO THE REQUIRED RATED PRESSURES. THE TIRE SHALL FIT A WHEEL OF SUITABLE MATERIAL WITH A CONTOUR PER THE DIMENSIONS AND OUTLINE SHOWN ABOVE WITHOUT CHAFING OF THE SIDEWALL WHEN TESTED TO THE DYNAMIC PORTION OF THIS DRAWING.

FIGURE 1

P.A. NAVY - AS Other Cont	TITLE TIRE, PNEUMATIC, AIRCRAFT, 18 X 5.7 - 8.00 (NAVY), FABRIC REINFORCED TREAD	MILITARY STANDARD	
		MS14196 (AS)	
PROCUR	IFICATION	SUPERSEDES:	SHEET 4 OF 4