MIL-T-6053C(USAF)
20 July 1977
SUPERSEDING
MIL-T-6053B(USAF)
26 October 1967

# MILITARY SPECIFICATION

## TESTS, IMPACT, SHOCK ABSORBER LANDING GEAR, AIRCRAFT

This specification is approved for use by the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 This specification covers definition of landing impact tests which are to be conducted on landing gear assemblies including shock absorbers, suggested instrumentation for the tests and required data of the resulting test report. It is intended to standardize impact test procedures on landing gear shock absorbers and to provide sufficient data to allow evaluation of the design with respect to requirements of MIL-L-8552 and MIL-S-8959 as applicable.

## 2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following specifications, of the issue in effect on the date of invitations for bids, form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

| | |
|---|---|
| MIL-L-8552 | Landing Gear, Aircraft Shock Absorber (Air - Oil Type) |
| MIL-S-8698 | Structural Design Requirements, Helicopter |
| MIL-A-8860 | Airplane Strength and Rigidity, General Specification for |
| MIL-A-8862 | Airplane Strength and Rigidity, Landplane Landing and Ground Handling Loads |
| MIL-A-8868 | Airplane Strength and Rigidity, Data and Reports |
| MIL-S-8959 | Spring, Hydraulic, General Specification for |

STANDARDS

MILITARY

| | |
|---|---|
| MIL-STD-831 | Test Reports, Preparation of |

FSC 1620

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: ASD/ENESS, Wright-Patterson AFB, OH 45433 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. TEST REQUIREMENTS

3.1 Method of tests. The translational free drop method of impact testing is required with the wheels spun up in a reverse direction in order to simulate the effect of spin-up drag load for testing the landing gear shock absorber. Use of other methods of impact testing (rotating beam, incline platform, etc.) must be approved by the procuring activity.

3.2 General. The aircraft contractor shall furnish test specimen(s) and arrange for the performance of the tests specified herein, or as dictated by contract or supporting contract documentation.

3.3 Required tests. The following tests shall be conducted on the same complete landing gear assembly including shock absorber, wheels, tires, brakes (or inertia simulation, both rotational and translational, of the brakes) and other structural members, as used on the aircraft. There shall be no substitution of shock absorber parts except seals after the testing has started. Seal failures shall not be cause for rerun of drop test; however, any such failures must be investigated to assure that they are not chronic or that there is not an inherent deficiency in the design.

3.3.1 Design landing tests. In order to validate the metering characteristics and bottoming capability, conduct a minimum of one drop at each of the test conditions outlined in table I.

3.3.1.1 Weights. The weights outlined in table I are derived from the definitions presented in Section 6 of MIL-A-8860, or as defined by MIL-S-8698, Section 3.

3.3.1.2 Attitudes. The attitudes outlined in table I are derived from the definitions presented in MIL-A-8862. For testing main landing gears (of nose wheel type aircraft), use the two-point attitude with the nose tire just clear of the ground for the level landing condition. For testing nose landing gears of nose gear type aircraft, use the three-point attitude for the level landing condition. No tail down conditions are required for nose gears.

3.3.1.3 Wheel speeds at contact. The wheels shall be spinning in the reverse direction at the time of platform contact. The value of $V_{SL}$ listed in table I is defined in Section 6 of MIL-A-8860 or the $V_L$ for autorotative landing at design gross as required by MIL-S-8698, Section 3. The tire radius used for determining wheel rpm shall be the mean undeflected radius of the tire, as determined by allowable tolerances and dimensions of the tire, obtained from the tire performance specification.

TABLE I. Design landing tests.

| Type Aircraft | Drop Nr | Weight Condition | Rate of Descent $V_V$ (fps) | Attitude* | Wheel Speed at Contact | Maximum Vertical Reaction (g's) |
|---|---|---|---|---|---|---|
| Trainer | 1 | Landplane Landing Design Gross Weight | 13.0 | Level | 1.2 $V_{SL}$ | * |
| | 2 | Landplane Landing Design Gross Weight | 13.0 | Tail Down | 1.0 $V_{SL}$ | * |
| | 3 | Maximum Landing Design Gross Weight | 8.5 | Level | 1.2 $V_{SL}$ | * |
| | 4 | Maximum Landing Design Gross Weight | 8.5 | Level | 1.2 $V_{SL}$ | ** |
| | 5 | Maximum Landing Design Gross Weight | 8.5 | Tail Down | 1.0 $V_{SL}$ | * |
| Other Classes | 1 | Landplane Landing Design Gross Weight | 10.0 | Level | 1.2 $V_{SL}$ | * |
| | 2 | Landplane Landing Design Gross Weight | 10.0 | Tail Down | 1.0 $V_{SL}$ | * |
| | 3 | Maximum Landing Design Gross Weight | 6.0 | Level | 1.2 $V_{SL}$ | * |
| | 4 | Maximum Landing Design Gross Weight | 6.0 | Level | 1.2 $V_{SL}$ | ** |
| | 5 | Maximum Landing Design Gross Weight | 6.0 | Tail Down | 1.0 $V_{SL}$ | * |
| Helicopter | 1 | Basic Design Gross Weight | 8.0 | Level | 1.0 $V_L$ | * |
| | 2 | Basic Design Gross Weight | 8.0 | Level | 0.0 $V_L$ | * |
| | 3 | Basic Design Gross Weight | 8.0 | Tail Down (Nose Down) | 1.0 $V_L$ | * |
| | 4 | Basic Design Gross Weight | 8.0 | Tail Down (Nose Down) | 0.0 $V_L$ | * |
| | 5 | Design Alternate Gross Weight | 6.0 | Level | 1.0 $V_L$ | * |
| | 6 | Design Alternate Gross Weight | 6.0 | Level | 1.0 $V_L$ | ** |
| | 7 | Design Alternate Gross Weight | 6.0 | Tail Down (Nose Down) | 1.0 $V_L$ | * |

*Data supplied by Airframe Contractor.
**Flat Strut Drop Test.

3.3.1.4 Equipment servicing. Except for the flat strut tests outlined in table I, the tire inflation pressure and shock strut servicing pressure shall be those prescribed in the recommended procedures for operation at aircraft maximum design gross weight. The shock absorber oil level shall be recommended design level. The inflation pressure for the flat strut test will be atmospheric with the strut extended. Plugs with valves will be in a service configuration.

3.3.2 Miscellaneous landing tests. After successful completion of the design tests (3.3.1) the miscellaneous landing tests of table II shall be performed. Upon completion of these tests, there should be no evidence of permanent set or functional impairment.

3.3.2.1 Weights. The weight required in table II is derived from the definition presented in Section 6 of MIL-A-8860 or MIL-S-8698, Section 3.

3.3.2.2 Attitude and wheel contact speeds. See explanation in 3.3.1.2 and 3.3.1.3 respectively, for level attitude.

3.3.2.3 Equipment servicing. For the tests outlined in table II, the tire inflation pressure shall be that recommended for operation at aircraft maximum design gross weight. The variations in strut servicing pressure of the two first drops of table II are designed to evaluate the capability of the shock absorbers as required by MIL-A-8862. The last two drops of table II satisfy the testing requirements of Section 3 of MIL-L-8552.

3.3.2.4 Strut stowage. If the shock absorber is normally stowed in such a position that the shock strut centerline has the lower end above a line 10° from horizontal or is stowed in other than the fully extended position, then drops 1, 2, and 3 of the miscellaneous landing tests of table II shall be conducted in the following manner:

a. Position strut with centerline of strut at retracted attitude* relative to horizontal or in the normal stowed extension

b. Allow strut to extend and position in landing attitude and hold 120 seconds ±20 seconds

c. Conduct drops as prescribed.

*If strut purging of dynamic chamber due to retract attitude can be demonstrated, then attitude placement may be eliminated.

3.3.3 Airplane growth tests. After successful completion of miscellaneous tests of 3.3.2, table II, the landing tests of table III shall be performed with the same gear assembly. Upon completion of these tests, there shall be no evidence of functional impairment.

TABLE II. Miscellaneous landing tests.

| Aircraft | Drop Nr | Weight Condition | Sink Speed (fps) | Attitude | Wheel Speed | Strut Inflation Pressure (% Rated) | Oil Volume (% Recommended) | Remarks |
|---|---|---|---|---|---|---|---|---|
| Trainer | 1 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 90 | 100 | |
| | 2 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 110 | 100 | |
| | 3 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 100 | 100 | |
| | 4 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 100 | 100 | Within 5 min of previous drop |
| | 5 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 100 | 100% minus equivalent 1/2 inch of oleo stroke | |
| | 6 | Landplane Landing | 13.0 | Level | $1.2V_{SL}$ | 100 | 100% minus equivalent 1/2 inch of oleo stroke | Within 5 min of previous drop |
| Other | 1 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 90 | 100 | |
| | 2 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 110 | 100 | |
| | 3 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 100 | 100 | |
| | 4 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 100 | 100 | Within 5 min of previous drop |
| | 5 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 100 | 100% minus equivalent 1/2 inch of oleo stroke | |
| | 6 | Landplane Landing | 10.0 | Level | $1.2V_{SL}$ | 100 | 100% minus equivalent 1/2 inch of oleo stroke | Within 5 min of previous drop |

TABLE II. Miscellaneous landing tests. - Continued

| Aircraft | Drop Nr | Weight Condition | Sink Speed (fps) | Attitude | Wheel Speed | Strut Inflation Pressure (% Rated) | Oil Volume (% Recommended) | Remarks |
|---|---|---|---|---|---|---|---|---|
| Helicopter | 1 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 90 | 100 | |
| | 2 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 110 | 100 | |
| | 3 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 100 | 100 | * |
| | 4 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 100 | 100 | Within 5 min of previous drop * |
| | 5 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 100 | 100% minus equivalent 1/2 inch of oleo stroke | * |
| | 6 | Basic Design Gross Weight | 8.0 | Level | $1.0V_L$ | 100 | 100% minus equivalent inch of oleo stroke | Within 5 min of previous drop * |

*These drops may be deleted if oil level above the orifice is equal to at least 125 percent of piston diameter or 5 inches, whichever is less. These drops may also be deleted if the air and oil are physically sepearted (i.e., inverted strut, etc.). These drops are only applicable to those shock struts designed in accordance with MIL-L-8552.

3.3.3.1 Weights. Minimum flying weight and landplane design gross weight outlined in table III are defined in Section 6 of MIL-A-8860 and MIL-S-8698, Section 3.

3.3.3.2 Equipment servicing. For the equivalent energy test outlined in table III, the tire and strut servicing pressures shall be a minimum of 100 percent rated values up to and including maximum design gross weights. When the test weight condition exceeds maximum design gross weight, the tire and strut pressures shall be adjusted accordingly in a manner prescribed by the specific component servicing instructions. For multiple-chambered gears requiring separate servicing, coordination with the design agency is required and it is normally assumed that the chamber which affects the normal landing conditions is the only one which may be serviced.

TABLE III. Landing tests.

| Type Aircraft | Drop Nr | Weight Condition | Sink Speed (fps) | Attitude | Wheel Speed | Strut Inflation Pressure (% Rated) | Oil Volume (% Recommended) | Remarks |
|---|---|---|---|---|---|---|---|---|
| Trainer | 1 | .75 x Landplane Landing | 15 | Level | $1.2V_{SL}$ | 100 | 100 | Equivalent Energy Test |
| | 2 | 1.174 x Landplane Landing | 12 | Level | $1.2V_{SL}$ | See Para. 3.3.3.2 | 100 | Equivalent Energy Test |
| | 3 | 1.397 x Landplane Landing | 11 | Level | $1.2V_{SL}$ | See Para. 3.3.3.2 | 100 | Equivalent Energy Test |
| | 4 | Minimum Flying Weight | 13.0 | Level | $1.2V_{SL}$ | 100 | 100 | Servicing Evaluation Test |
| | *5 | Minimum Flying Weight | 13.0 | Level | $1.2V_{SL}$ | See Para. 3.3.3.3 | 100 | Servicing Evaluation |
| Other Aircraft | 1 | .825 x Landplane Landing | 11 | Level | $1.2V_{SL}$ | 100 | 100 | Equivalent Energy Test |
| | 2 | 1.2346 x Landplane Landing | 9 | Level | $1.2V_{SL}$ | See Para. 3.3.3.2 | 100 | Equivalent Energy Test |
| | 3 | 1.5000 x Landplane Landing | 8.165 | Level | $1.2V_{SL}$ | See Para. 3.3.3.2 | 100 | Equivalent Energy Test |
| | 4 | Minimum Flying Weight | 10 | Level | $1.2V_{SL}$ | 100 | 100 | Servicing Evaluation Test |
| | *5 | Minimum Flying Weight | 10 | Level | $1.2V_{SL}$ | See Para. 3.3.3.3 | 100 | Servicing Evaluation Test |

TABLE III. Landing tests. - Continued

| Type Aircraft | Drop Nr | Weight Condition | Sink Speed (fps) | Attitude | Wheel Speed | Strut Inflation Pressure (% Rated) | Oil Volume (% Recommended) | Remarks |
|---|---|---|---|---|---|---|---|---|
| Helicopter | 1 | .827 Basic Design Gross Weight | 8.8 | Level | $1.0V_L$ | 100 | 100 | Equivalent Energy |
| | 2 | 1.30 x Basic Design Gross Weight | 7.0 | Level | $1.0V_L$ | Adjusted for G.W. (100% min) | | Equivalent Energy |
| | 3 | 1.50 x Basic Design Gross Weight | 6.5 | Level | $1.0V_L$ | Adjusted for G.W. | 100 | Equivalent Energy |
| | 4 | Minimum Weight | 8.0 | Level | $1.0V_L$ | 100 | 100 | Servicing Evaluation Test |
| | 5 | Minimum Weight | 8.0 | Level | $1.0V_L$ | 150 | 100 | Servicing Evaluation Test |
| | 6 | Minimum Weight | 8.0 | Level | $1.0V_L$ | 200 | 100 | Servicing Evaluation Test |
| | 7 | Minimum Weight | 8.0 | Level | $1.0V_L$ | 250 | 100 | Servicing Evaluation Test |
| Continue until design vertical platform load is reached. | | | | | | | | |

*Continue with noted increased servicing until design vertical reaction is reached or maximum service condition is attained

3.3.3.3 For the servicing evaluation test, the tire inflation pressure shall be that recommended for 100 percent usage at maximum design gross weight. The strut servicing pressure shall be increased in increments of 50 percent or less of rated pressure until a maximum static inflation pressure of 2500 psi or design vertical reaction is reached. If a deviation to the 2500 psi servicing pressure limit defined in Section 3 of MIL-L-8552 has been granted, this limit is extended to that permitted in the deviation.

3.3.3.4 Attitude and wheel contact. See explanation in 3.3.1.2 and 3.3.1.3, respectively.

3.3.3.5 Design vertical reaction. Design vertical reaction is defined as the load at the wheel associated with a drop at landplane landing weight, level attitude and design sink speed, or basic gross weight.

3.3.4 Reserve energy tests. After completion of the tests outlined in 3.3.1, 3.3.2 and 3.3.3, conduct the tests outlined in table IV with the same gear assembly.

TABLE IV. Reserve energy tests.

| Type Aircraft | Drop Nr | Weight Condition | Sink Speed (fps) | Attitude | Wheel Speed | Strut Inflation Pressure (% Rated) | Oil Volume (% Recommended | Remarks |
|---|---|---|---|---|---|---|---|---|
| Trainer | 1 | Landplane Landing | 13.5 | Level | $1.2V_{SL}$ | 100 | 100 | No Functional Impairment |
| | 2 | Landplane Landing | 14.5 | Level | $1.2V_{SL}$ | 100 | 100 | No Functional Impairment |
| | 3 | Landplane Landing | 16.0 | Level | $1.2V_{SL}$ | 100 | 100 | Permanent Set - No Failure |
| Other Aircraft | 1 | Landplane Landing | 10.5 | Level | $1.2V_{SL}$ | 100 | 100 | No Functional Impairment |
| | 2 | Landplane Landing | 11.5 | Level | $1.2V_{SL}$ | 100 | 100 | No Functional Impairment |
| | 3 | Landplane Landing | 12.5 | Level | $1.2V_{SL}$ | 100 | 100 | Permanent Set - No Failure |
| Helicopter | 1 | Basic Design Gross Weight | 8.5 | Level | $1.0V_L$ | 100 | 100 | No Functional Impairment |
| | 2 | Basic Design Gross Weight | 9.0 | Level | $1.0V_L$ | 100 | 100 | No Functional Impairment |
| | 3 | Basic Design Gross Weight | 9.8 | Level | $1.0V_L$ | 100 | 100 | Permanent Set - No Failure |

3.3.4.1 Weights. All of the reserve energy tests will be conducted with land-plane landing design gross weights, as defined in Section 6 of MIL-A-8860 or MIL-S-8698, Section 3 as applicable.

3.3.4.2 Attitude and wheel speed. See explanation of 3.3.1.2 and 3.3.1.3, respectively.

3.3.4.3 Equipment servicing. Tire and shock absorber inflation pressures shall be required pressures for maximum design gross weight.

3.4 Test witnesses. The procuring activity representative shall be notified in sufficient time so that he or his representative may witness the tests and certify results and observations contained in the test report.

3.5 Test equipment. Unless specifically approved by the procuring activity, the tests shall be performed on a stationary drop tower incorporating a carriage dropping mass which will support the test article. A steel grating or other suitable surface shall be installed on the reaction platform or test floor in the contact area, which will produce a minimum of .55 coefficient of friction between the tire and simulated landing surface. If analysis shows that a lower coefficient utilized during spin-up produces a more critical loading, this shall be used. Approval of this variation shall be obtained from the procuring activity. This coefficient of friction shall not vary more than ±30 percent throughout the test program. Wing-life may be simulated by mechanical means or compensated for by adjusted mass method and is subject for review and approval by the procuring activity. If mechanical means are used, the wing-life simulation device shall be capable of exerting an average constant ±10 percent lifting force down to 2 fps $V_v$ throughout each test.

3.6 Test report data. Test report data shall be prepared in accordance with the general guidance furnished in MIL-A-8868 and MIL-STD-831.

3.6.1 Instrumentation. Record the following minimum information or equivalent data as a function of time* for each drop test required in 3.3 of this specification:

a. Carriage mass displacement normal to contact surface

b. Vertical or platform reaction

c. Horizontal (drag) reaction at contact surface

d. Shock absorber axial stroke

* e. Wheel rotational speed at time of release.

f. Wing lift force (if mechanical)

g. For multiple-axle gears, vertical load on each axle or multiple platform

h. Gear side load (when required)

i. Strut axial load.

*Except as noted.

3.6.2 Data presentation. The following information shall be presented in the test report:

a. Labeled oscillograph traces of each item listed in 3.6.1 for each test condition. Drops from table III, 5 and on, need only show the maximum condition tested

b. Suitable calibration data

c. A plot of vertical reaction versus stroke for the tests outlined in table I and the highest sink speed drop of table IV

d. A plot of calculated and actual static load versus stroke

e. An identification by part number of all the landing gear or shock strut components

f. A sketch or drawing showing the full details of the final metering arrangement

g. A measured recording of strut and tire inflation pressures just prior to each drop

h. Drawing or sketch showing attitude of gear with respect to ground and test jig for level landing and tail-down attitude drops

i. All pertinent calculations made in performance of tests

j. The design air volume for fully compressed, static and fully extended positions shall be noted in the report

k. An inspection analysis of the condition of the gear assembly after the completion of the prescribed tests

l. A plot of calculated tire deflection versus time.

3.7 Wing lift. The required wing lift may be compensated for by any appropriate means.

3.7.1 Adjusted mass method. This method of simulating wing lift may be used in a drop test jig without a mechanical device for producing the vertical lift force.

3.7.1.1 Terminology

A - Piston area in square inches

AL - Air load at end of strut stroke in pounds

BF - Distance between strut bearings at full extension in inches

BS - Distance between strut bearings in inches when under static load

BV - Vertical load on bearings caused by friction in pound force

CR - Compression ratio at full design stroke

d - Vertical travel of drop test mass after contact in inches

$d_1$ - Initial piston travel in inches

$d_2$ - Final possible piston travel in inches

D - Tire deflection in inches

DT - Dynamic tire deflection in inches

h - Effective gear drop height in inches

hj - Jig drop height above platform in inches (equivalent free fall)

L - Lift ratio

LF - Load factor as defined in MIL-A-8862

MS - Maximum strut stroke possible in inches

n - Polytrophic exponent

$P_1$ - Air pressure at beginning of strut stroke in pounds per square inch

$P_2$ - Air pressure at end of strut stroke in pounds per square inch

PD - Piston diameter in inches

PT - Piston travel from static to fully compressed position in inches

SL - Final load when strut becomes static

SP - Strut pressure in pounds per square inch

SS - Strut stroke for the specified conditions in inches

UR - Resistance of the upper strut bearings in pound force

$V_v$ - Design limit sink speed in feet per second

VR - Maximum allowable vertical reaction

ΔV - Area under the acceleration versus time curve from the time of contact to the time when the load factor equals one (ft/sec)

Wj - Jig weight in pound force

Wg - Effective weight over the gear in pound force

Y - Strut compression distance in inches

μ - Friction coefficient

3.7.1.2 Method of calculation

a. VR = Wg x LF

Where LF is specified in the aircraft specifications of design criteria (usually $1.3 \leq LF \leq 1.5$)

b. SL = .90 x VR

Assuming the gear will stop 90 percent of the allowable load.

c. BF = BS + PT - MS

d. $UR = \frac{SL \times PD}{BF+SS}$

Initially assume that SS = .85 x MS

e. BV = 2 x μ x UR assuming no drag when gear stops

μ = 0.13 for piston seals 10 inches or larger in diameter

μ = 0.11 for piston seals with a diameter of less than 10 inches.

f. AL = SL - BV

g. $Y = \frac{PT}{CR-1}$

h. $P_2 = \frac{AL}{A}$

i. $P_1 = SP + 14.7$

j. $d_1 = MS + Y$

$$d_2 = \text{Antilog}\left[\text{Log}\,(d_1) - \frac{\text{Log}\left(\frac{P_2}{P_1}\right)}{n}\right]$$

Where n = 1.1 unless otherwise specified

k. $SS = MS + Y - d_2$

If this value does not agree within ±10 percent of the value assumed in d, adjust the stroke accordingly and repeat calculations.

l. DT = 0.95 x D

m. d = SS + DT

n. $L = \frac{\text{Wing Lift or Rotor Lift}}{\text{Gross weight}}$

o. $W = \frac{6(V_V)^2}{g}$

p. $Wj = Wg\left[\frac{h+(1-L)d}{hj + d}\right]$

For the initial drop, assume hj = h. After the acceleration versus time plot is found, let:

$$hj = \frac{6(V_V - \Delta V)^2}{g}$$

Note: To conduct a test for a particular aircraft gross weight and a specified rate of descent and wing lift, it will be necessary to conduct trial tests with varying values of Wj and hj either until the equalities are satisfied within ±3 percent, or the test energy and maximum velocity are conservative with respect to design requirements.

3.8 Load factors. The load factors associated with the test program are defined and calculated in the following manner:

$$ng - \text{Gear Load Factor} = n_a - L$$

$$= nj \frac{Wj}{Wg}$$

Where nj = Jig load factor

and na = Aircraft load factor at the center of gravity. (3)

4. QUALITY ASSURANCE PROVISIONS

4.1 The quality assurance provisions shall be as specified in the performance specifications, as applicable.

5. PACKAGING

5.1 Packaging shall be in accordance with the instructions of the procuring activity.

6. NOTES

6.1 Intended use. The requirements of this specifications shall be used to evolve a production metering arrangement and to determine compliance with applicable design requirements.

6.2 Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodian:
Air Force - 11

Review activity
Air Force - 99

Preparing activity:
Air Force - 11

Project No. 1620-F118

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

*(See Instructions – Reverse Side)*

1. DOCUMENT NUMBER

2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION

b. ADDRESS *(Street, City, State, ZIP Code)*

4. TYPE OF ORGANIZATION *(Mark one)*

☐ VENDOR

☐ USER

☐ MANUFACTURER

☐ OTHER *(Specify)*: ______

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional

b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional

c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional

8. DATE OF SUBMISSION *(YYMMDD)*

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)

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PREVIOUS EDITION IS OBSOLETE.