1. The authority citation for 48 CFR Part 241 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

PART 241—ACQUISITION OF UTILITY SERVICES

2. Section 241.103 is added to read as follows:

§ 241.103 Statutory and delegated authority.

The contracting office may enter into a utility service contract related to the conveyance of a utility system for a period not to exceed 50 years (10 U.S.C. 2688(c)(3)).

[FR Doc. 00–766 Filed 1–12–00; 8:45 am]

BILLING CODE 5000–04–M

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 572

Docket No. NHTSA–99–6714

RIN 2127–AG76

Anthropomorphic Test Dummy; Occupant Crash Protection

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Final rule.

SUMMARY: This document amends 49 CFR part 572 by adding a new, more advanced 6-year-old child dummy (H–III6C). The new dummy, part of the family of Hybrid III test dummies, is more representative of humans than the existing one, and allows the assessment of the potential for more types of injuries. The new dummy is especially needed to evaluate the risks of air bag deployment for children, particularly unrestrained children. It will also provide greater and more useful information in a variety of environments to better evaluate child safety.

Adding the dummy to part 572 is the first step toward using the dummy to evaluate the safety of air bags for children. The issue of amending the agency's safety standards, such as the one on frontal occupant crash protection or the ones on child restraints, to specify use of the dummy in determining compliance with performance test requirements will be addressed in other rulemaking proceedings.

DATES: Effective Date: This regulation becomes effective March 13, 2000. The incorporation by reference of the publications listed in the rule was approved by the Director of the Federal Register as of March 13, 2000.

Petitions: Petitions for reconsideration must be received by February 28, 2000.

ADDRESSES: Petitions for reconsideration should refer to the docket number of this rule and be submitted to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: For non-legal issues, you may call Stan Backaitis, Office of Crashworthiness Standards, at 202–366–4912.

For legal issues, you may call Rebecca MacPherson, Office of the Chief Counsel, at 202–366–2992.

You may send mail to both of these officials at National Highway Traffic Safety Administration, 400 Seventh St., SW., Washington, DC 20590.

SUPPLEMENTARY INFORMATION:

I. Summary of Decision

Based on NHTSA's use of the H–III6C 6-year-old dummy in calibration tests and in frontal impact tests involving restraints such as air bags and belts, we have concluded that this dummy is suitable for both research and compliance safety assessments. The dummy is not only considerably more biofidelic than its predecessor, the Part 572 Subpart I 6-year-old dummy, but it also has considerably more extensive instrumentation to measure impact responses such as forces, accelerations, moments, and deflections in conducting tests to evaluate vehicle occupant protection systems. Depending on the intended injury assessment needs, the dummy has the necessary instrumentation to measure the potential for injuries to the head, the upper and lower ends of the neck, the chest, the lumbar spine, the pelvis, and the femurs, as well as the forces on the iliac crests [1] caused by the lap belt. In extensive agency tests, the dummy exhibited excellent durability and robustness as a measuring test tool. Although other dummy users were invited to provide comments on their test experience with the H–III6C, their responses to the notice of proposed rulemaking (NPRM) were based primarily on data from calibration-type tests. Little of the data was from the dummy's response in systems tests. Accordingly, our judgment about adequacy of the dummy in system's tests is based on our own test data. However, we believe that our conclusion is consistent with the calibration data submitted in response to the NPRM by other dummy users, since those data provide a reasonably good match with the agency data.

We have decided to add the H–III6C to Part 572 as Subpart N, and designate it as the alpha version of the H–III6C dummy. Further changes to the dummy will be designated as beta, gamma, etc., to assure that modifications can be easily tracked and identified. The new dummy is defined by a drawing and specification package, a new procedures document for disassembly, assembly and inspection, and performance parameters including associated calibration procedures.

II. Background

The development of the dummy's initial concept and specifications was initiated by the Centers for Disease Control and Prevention (CDC) when it provided funds to Ohio State University to develop a design foundation for a Hybrid III type 6-year-old child dummy (H–III6C) in 1989. Ohio State University asked the Society of Automotive Engineers (SAE) to form an appropriate working group that could provide advice and guidance from the automotive perspective. The development of the H–III6C has continued since then under the guidance of the Hybrid III Dummy Family Task Force of SAE. NHTSA has also been involved in the development of the dummy, initially as an observer in meetings of the SAE Task Force, and later as a participant sharing relevant test data. As the development of the dummy approached maturity, we initiated a program in 1997 to evaluate the dummy to determine its readiness for use as a test device in agency compliance programs.

Upon completion of the evaluation program, which also involved a series of dummy modifications, we tentatively concluded that the upgraded dummy was suitable for potential incorporation into Part 572. On June 29, 1998, we published an NPRM in which we proposed to incorporate the Hybrid III type 6-year-old child dummy into Part 572 as Subpart N, and invited comments (63 FR 35170).

We received comments from 14 organizations: First Technology Safety Systems (FTSS), the American Academy of Pediatrics (AAP), Applied Safety Technology Corporation (ASTC), Robert A. Denton, Inc., Transportation Research Center, Inc. (TRC), International Electronic Engineering (IEE), TRW, Advocates for Highway and Auto Safety (Advocates), Entran, Mitsubishi, Volvo, SAE Dummy Test

[1] The ilium is the dorsal, upper and largest of the three bones composing the left or right half of the pelvis.

Equipment Subcommittee (DTES), National Transportation Safety Board (NTSB), and the American Automobile Manufacturers Association (AAMA). Several of the commenters expressly supported adding the H–III6C to Part 572, and others provided technical comments indicating overall support.

The comments tended to fall into two groups. Commenters either supported the rulemaking generally without being specific as to any particular aspect of the proposal, or they provided very specific, technical discussions on several portions of the proposal. Often, these technical comments dealt with procedures on how the dummy is set up and positioned for calibration test or concerns with the sufficiency and clarity of the dummy drawings. These highly technical comments are addressed in the ''Technical Analysis of Issues Report'' (TAIR–HIII6C) supporting this final rule. Where we have agreed with the comments, we have made appropriate changes in either the drawing package or the regulatory text. The TAIR–H–III6C is in the docket.

III. Dummy Drawings

Two of the commenters, primarily ASTC and to a lesser extent Denton, raised a number of questions about the specifications in the drawings, including missing and incomplete data, availability of molds and patterns, instrumentation, and whether several drawings cited in the drawings package replaced existing drawings already referenced in the CFR. To simplify analysis of the large number of detailed issues related to design specifications, we divided the comments into four categories: critical, performance, manufacturing, and other issues.

Critical Issues: This group of issues concerns those requested changes that, in our opinion, are essential to assure the dummy's structural consistency and its appropriate functioning. They involve a series of questions essential to dummy design, as well as missing or incomplete significant specifications. The issues deemed critical involve dummy drawings that need to be changed either by adjusting existing specifications or adding further specifications to assure a correct fit and interface between components and their appropriate functioning in the impact environment. While these changes are important, they must be addressed with a degree of technical specificity that will likely be appreciated only by the two dummy manufacturers who commented on the NPRM. Accordingly, they are fully discussed in the TAIR–H–III6C.

Performance Issues: This group of issues involves comments on drawings and specifications that we consider relate primarily to production decisions which dummy manufacturers need to address on their own. We believe the requested changes to the specifications falling in this category are of little consequence to the fit and function of the dummy. The performance issues primarily concern requests for the addition of new dimensions and specifications that have little, if any, functional significance for the part in question; expanding the specifications to include manufacturing processes and further details for material specifications; and assignment of dimensional and surface finish controls on parts that have no foreseeable effects to their fit and overall dummy performance. We have found no reason to include the requested information in the drawing set of the final rule. The inclusion of such information would be of little value, if any, and would not assure better quality of the manufactured dummy. Indeed, the addition of the specifications may reduce a dummy manufacturer's flexibility in selecting a superior production technique or process, and may preclude competition. The comments are fully discussed in the TAIR–H–III6C.

Manufacturing Issues: ASTC commented that the proposed drawing set does not allow another manufacturer to produce this dummy because it lacks surface contour information. ASTC stated that the surface contour information affects not only outside vinyl skin pieces, but also many internal structures such as skull, clavicle, clavicle link, and pelvic bone. ASTC argued this would create problems in interchangeability and equivalency between dummies produced by different manufacturers, and could also affect dummy performance. ASTC requested that the agency provide opportunities for commenters to review the dummy to answer their questions and provide patterns or parts for the surface contour information. Careful consideration was given to these comments. Several options were considered for resolving ASTC's concerns. The drawing review option was impracticable for this dummy, since drawings were already released as part of the NPRM package, and there was no way to assure that all parties would ever be satisfied with any contour definitions placed on the drawings. The availability of molds and patterns was also impracticable, since the agency does not own any molds and patterns for this dummy.[2] As a third option, the agency considered making a copy of the dummy available to interested manufacturers for non-destructive dimensional inspection and extraction of surface contour information. In order to provide all interested parties with the opportunity to inspect and measure the dummy, NHTSA decided it will make the dummy available to any interested party for a period of six months after the issuance of this final rule. Such access is subject to the following terms:

- All inspections are to take place at VRTC's convenience, although reasonable attempts will be made to accommodate the interested party's schedule.
- An individual or company that wishes to inspect the dummy will need to contract directly with TRC to make arrangements for an individual to oversee the measurement process. This oversight by TRC is necessary to ensure that the dummies are not damaged and are reassembled correctly without the undue expenditure of agency resources.

ASTC has already availed itself of this opportunity, although it was warned that prior to the issuance of this rule, the dummy was subject to changes.

Other Issues: Some issues were raised which do not fall into the above categories for this dummy. Discussion of those comments can be found in the TAIR–H–III6C.

IV. Calibration Procedures

The agency proposed calibration tests involving head drop tests, neck pendulum tests, thorax and knee impacts, and torso flexion tests. AAMA, TRC, TRW and Mitsubishi were the principal commenters on test procedures.

Discussion of the vast majority of these comments is left to the TAIR–H–III6C because they raise very minor issues. Nevertheless, we are discussing a couple of the comments here because they raise concerns as to whether the proposed semi-static torso flexion test and the knee calibration test should be calibration tests or simply initial, as received, inspection tests. This distinction is important because inspection tests usually are performed at the time the dummy is received from the manufacturer and are not necessarily repeated during the life of the dummy. An additional concern, unrelated to the inspection test issue, was raised that the impact probes

[2] The NPRM incorrectly stated that dummy molds and digital patterns would be part of the dummy specifications in the final rule. This statement was corrected in a correction notice that was published on September 3, 1998 (63 FR 46979), where we noted that NHTSA does not have molds or patterns for the H–III6C dummy.

specified for the knee and thorax tests were unduly design restrictive.

The semi-static torso flexion test (upper torso half relative to the lower half) was proposed as a calibration specification for this dummy. AAMA, TRC and TRW objected to characterizing this procedure as a calibration test, claiming it is not critical to the dummy's performance. Rather, they suggested it be retained as an inspection test as shown in the SAE user's manual. Further, they claimed that the preflexion test is not needed and that the upper torso return angle upon release of the bending force should be eliminated.

The commenters have not provided any factual support for the claim that flexion stiffness of the torso is not critical to the dummy's performance, and that the measurement of stiffness during the dummy's inspection is sufficient. They have argued that the SAE user's manual lists this test as an ''inspection test'' which is supplemental to the calibration tests to ensure that a component meets its design intent. They note that inspection tests are performed by the dummy manufacturer on new parts, but that the dummy user may conduct inspection tests only after a part is damaged or replaced. The agency does not agree with the SAE assessment. The dummy's torso midsection provides an important coupling and transfer of loads between the upper and lower torso halves. The lumbar spine and the pelvis bone cavity control the confinement of the abdomen fit from the rear and the bottom of the torso. Thus, the bottom of the ribcage as it glides around and pushes on internal surfaces of the flesh has a substantial influence not only on the extent the torso will flex, but also on how the load transfer between the upper and lower torso halves will be distributed. By suggesting that we adopt the agency-developed, but SAE-interpreted test procedure contained in the SAE user's manual, the commenters have admitted its need and importance. We believe the flexion procedure is necessary as a calibration test to ensure that when the dummy is used, its torso flexion stiffness is consistent, provides consistent upper torso kinematics relative to the lower torso, and does not cause the variability of dummy response measurements in other body segments. A procedure relegated to an inspection category would be nearly useless for these purposes, since if the dummy was not tested prior to the compliance test, it would never be known if the dummy had the correct mid-section stiffness and if the responses of the other body segments were not affected by mid-section variability.

We also disagree with the suggestion that the return angle during the bending stiffness test of the lumbar spine/upper torso assembly is not needed. There will be a substantial difference in overall torso kinematics between a seated dummy that can and a seated dummy that cannot return its upper torso half from a flexed position to an upright posture, particularly after full flexion has occurred. Without return, the flexion is substantially plastic, while evidence of a specific return would be indicative of the torso mid-section having certain elastic properties. Also, evidence of consistent return would indicate that the forces of restitution are intact, while no or indefinite return would indicate a substantial change within the internal mechanisms of the mid-torso structure, such as failure of the lumbar spine, abdomen, or a substantial shift between interfacing body segments within the abdominal cavity. Analysis of all of the test results indicate that the upper torso returns consistently within 8 degrees of the starting position, indicating the necessity of specifying the return angle.

The commenters also suggested removal of the preflex provision, claiming such a provision is not needed and would interfere with the waiting time between tests recommended in the SAE user's manual. A preflex provision was proposed to provide an opportunity for the mating parts to inter-align between themselves, so that the internal structures within the dummy's mid-torso are not sprung or misaligned at the time of testing. Preflexing was performed in the agency tests, and it is working reasonably well in developing a stabilized set-up posture. We see no reason to remove a provision that helps to assure a stabilized posture and better and more consistent measurements, including the integrity of the interconnection between the upper and the lower torso halves. In response to FTSS' comments about excessive flexing angle of the torso for stabilization purposes, the proposed provision for flexing the torso 3 times by 40 degrees from its initial upright position is being reduced to a nominal 30 degrees. The agency found 30 degrees of flexion sufficient to achieve stabilized interalignment of parts within the dummy's abdominal area.

The agency proposed knee assembly impact tests using a ballistic test probe for impacts. AAMA and TRW recommended that the knee impact test should be an inspection test, instead of a calibration test. AAMA also argued that only an inspection test is needed since femur loads are almost never measured.

The NPRM proposed knee assembly calibration tests using a cylindrical probe for impacts. AAMA and TRW noted that the proposed knee impact calibration test is identical to the inspection test in the SAE H–III6C user's manual. AAMA stated that ''this test is included in the SAE user's manual as an inspection test since femur loads are almost never measured with the dummy. However, if femur loads are measured, the test should be run periodically as a calibration test.'' TRW noted that inspection tests are supplemental to the calibration tests, arguing they should be used only to ensure that a component meets the design intent. TRW stated that it believes that knee impact tests fall within the inspection description.

The agency proposed incorporating this dummy into Part 572 with the intent of it being used for all types of crash test and restraint conditions including those in which knee impact is involved. In most test conditions, it is not known ''a priori'' that knee impacts will or will not occur. Any test that is being conducted with this test dummy should consider the possibility of knee impact. Accordingly, knee calibration even by AAMA–TRW's criteria is necessary. Thus, we disagree with AAMA and TRW's support of the SAE position that a calibration test is not needed if a part in question is not impacted. Calibration tests are also needed to ensure that the knee linking the femur with the tibia is properly connected. Such tests assure that the connection is not a source of noise and spikes in other measurements within the dummy.

The impact probes specified by the NPRM for knee and thorax tests are meant to be ideally cylindrical in shape and of a certain diameter. TRC noted that this type of test probe description in the NPRM unnecessarily restricts the design of the probe and puts additional burden on test laboratories. TRC prefers the wording used in current drafts of the SAE user's manuals. That wording was chosen by committee consensus to allow a wide range of design options without affecting impact results. In the case of the SAE H–III6C manual, TRC claims, the wording for the knee probe is more correct and preferred.

Up to now, all of the agency-specified dummy impact probes have been defined as rigid body cylinders of a specified diameter. Similarly, most SAE user's manuals, which are patterned after the agency's test procedures, also specify cylindrical impact probes, although in practice such probes may not be perfectly cylindrical. The addition of several new dummies to 49 CFR Part 572 may make it necessary for some dummy calibration laboratories to equip the existing test facilities with a variety of new impact probes. Some of those probes may be difficult to design in a pure cylindrical form due to their low weight.

We agree that more latitude in the selection of impact probes will allow the various laboratories greater flexibility in the use of existing impactors and/or in developing new ones. At the same time, it is essential that alternate impact probes do not create problems such as imprecision in the geometry of the impact face which could lead to inappropriate interface with dummy components during impact, introduction of vibratory effects due to potential resonances, inter-mass impacts within the impactor, and kinematic differences due shape and mass moment of inertia differences. Similarly, the measurement of impact force must be sensed by an accelerometer in a location whose signal is not distorted by the rigidity and geometry of the structures on which it is mounted. It is also noted that while the current specification for impactors defines the general shape of the impactor that the agency intends to use, that specification does not prohibit any test facility to use an impactor of its choice, as long as the user is confident that the alternate impactor will generate the same results under identical test conditions.

While the agency believes that, for the sake of consistency and simplicity, it would be best if all impact probes for dummy testing were of cylindrical design as defined in the NPRM, we have redefined the impact probes in generic terms and will accept other impactor configurations for compliance purposes, as long as they have the same (1) mass, (2) impact surface configuration, (3) defined mass moment of inertia in yaw and pitch with respect to the principal axis, (4) structural integrity, (5) an identically aligned accelerometer on the rear face of the impactor, (6) free air resonant frequency of not less than 1000 Hz, and (7) functionality and freedom of interference with the dummy's other body segments during the impact.

V. Calibration Response Corridors

The agency proposed calibration corridors for the head, neck flexion/extension, thorax resistive force and deflection, knee load and torso-flexion. Mitsubishi was concerned about the mass effects of the load adapter bracket on the test results. Comments on the response corridors were received from the following organizations: TRC, AAMA, and TRW. AAMA, by endorsing the SAE/DTESC User's Manual of October 98, indirectly commented on the response corridors for the head. During the agency's data analysis process, we contacted AAMA and SAE DTESC for further details and clarification of the basis of their recommendation. All comments are discussed in the TAIR–H–III6C.

We proposed calibration corridors for the head, neck flexion/extension, thorax resistive force and deflection, knee load and torso-flexion.

None of the commenters objected to the proposed head response corridors of 245 G to 300 G. AAMA, by endorsing the SAE/DTESC User's Manual of October 1998, indirectly agreed with the proposed response corridors for the head. Accordingly, the 245 G's to 300 G's impact response corridor is retained in the Final Rule as proposed in the NPRM.

We proposed neck response corridors in flexion in terms of neck moments, maximum head flexion-rotation angle, and moment decay time. For flexion, we specified a head displacement-rotation range from 74–92 degrees, a peak moment of 27 N-m to 33 N-m (19.9–24.3 ft-lbf), and a positive moment decay for the first 5 N-m (3.7 ft-lbf) between 103 and 123 ms after time-zero. The SAE Engineering Aid 29 of October 1998, which is referenced in AAMA and TRW responses, shows agreement with all of the NPRM proposed neck flexion corridors. Accordingly, the final rule retains the calibration corridors as proposed in the NPRM.

The agency proposed neck response corridors in extension in terms of neck moments, maximum head extension-rotation angle, and moment decay time. For extension, we specified a head displacement rotation range from 94–106 degrees, a peak moment of −19 N-m to −24 N-m (−14.7 to −17 ft-lbf), and a negative moment decay for the first −5 N-m (−3.7 ft-lbf) between 127 and 143 ms after time-zero. TRC, TRW and AAMA recommended a corridor of 85–103 degrees for neck rotation, a corridor of −20 to −25 N-m for peak moment, and, for moment decay time, a corridor of 123–143 ms after time zero as a more reasonable fit to the existing data base, apparently based on the SAE Engineering Aid 29, October 1998. AAMA also noted that the method of defining neck moment and time corridors proposed in the NPRM is acceptable because it produces more consistent results.

Upon review of the substantial neck extension data submitted in comments, we reevaluated the proposed corridors and found a substantial degree of agreement with the commenters' recommendations for revising the head rotation and decay time, but not for the peak moment corridors. Accordingly, we have revised the neck extension corridor to a maximum head rotation of 85–103 degrees, and the decay time corridor to 123–147 ms value. We have retained the peak moment at −19 N-m to −24 N-m (−14 to −17 ft-lbf) as proposed in the NPRM.

The agency proposed thorax impact response corridors in terms of sternum to spine compression at 38–44 mm (1.5–1.77 in) and peak force at 1150 N to 1300 N (259–292 lbf). AAMA, TRC, and TRW urged the agency to accept the 38–46 mm compression corridor contained in SAE Engineering Aid 29, October 1998. AAMA and TRW urged the adoption of the peak force resistance corridor of 1,180 N to 1,380 N, while TRC argued for a peak force corridor of 1,200 N to 1,400 N. Additionally, AAMA preferred the wording contained in the agency Technical Report ''* * * to specify the maximum force within the compression corridor* * * ''.

Based on examination of NHTSA's and the SAE-furnished data bases, the agency concluded that the existing data supported the resetting of thorax compression corridor between 38–46 mm (1.5–1.8 in) and the force response between 1150 N –1380 N (259–310 lbf). We also decided to change the wording of the regulatory text in accordance with the AAMA's suggestion. Thus, we have changed the wording in S572.124(b)(1) from ''During the displacement interval* * * '' to ''Within the specified compression corridor* * * ''.

The AAMA expressed concern over the torso flexion test and the knee response. TRW expressed concern over the knee response as well. During the data analysis process, we contacted AAMA and SAE DTESC for further details and clarification of their recommendations for modifying the torso flexion and knee impact response corridors.

In the NPRM, the agency proposed a semi-static torso bending stiffness value of 147–200 N (33–45 lbf). While initial comments by AAMA noted that the SAE Engineering Aid 29 of August 1998 supported a torso bending stiffness value between 156 N (35 lbf) and 200 N (45 lbf), subsequent SAE User Manual versions agreed with the agency proposed value of 147–200 N (33–45 lbf). Accordingly, the torso flexion force values are retained in the regulatory text at 147–200 N (33–45 lbf). Similarly, since there was no disagreement on internal hysteresis of the ribcage, the proposed range of 65 percent to 85 percent is retained for the final rule.

The NPRM proposed a knee impact response corridor of 1,800–N to 2,800–N (405–629 lbf). AAMA and TRW recommended a corridor between 2,000–N and 3,000–N (450–674 lbf) as called for in the SAE Engineering Aid 29 of October 1998. Upon receipt of comments and supplemental data from the SAE DTESC, we recomputed the response corridor. The resultant average values were found to be very close to the proposed SAE mean of 2,500 N (2,469 ± 511 N (1 sigma limit) for the left knee and 2,480 ± 481 N (1 sigma limit) for the right knee). Accordingly, the knee impact response corridors have been adjusted to the 2,500 ± 500 N (562 ± 112 lbf) range, as recommended by AAMA and TRW.

VI. Instrumentation (Accelerometers and Loads Cells)

In the NPRM, the agency proposed for the first time ''generic'' specifications for dummy-based sensors. The generic specifications apply to the following sensors: (1) The accelerometer (SA572–S4), (2) force and moment transducers for upper neck (SA572–S11) and lower neck (SA572–S26), lumbar spine (SA572–S12), anterior-superior iliac spine load cell (SA572–S13), single axis femur load cell (SA572–S10), and (3) the thorax based chest deflection potentiometer (SA572–S50). Of the 19 comments received, only three addressed the generic specifications for transducers. They were: Robert A. Denton, Inc, Entran, Inc., and AAMA. A full discussion of comments can be found in the TAIR–H–III6C.

After analyzing the comments received, we have concluded that generic specifications for the transducers or sensors used in crash test dummies can be defined sufficiently and will provide a broader latitude for the user industry to select suitable sensors. The input from these comments is being incorporated into generic sensor specifications in the regulatory text.

VII. Biofidelity, Pressure Distribution and Occupant Sensing Capability

The agency noted in the NPRM preamble that the proposed H–III6C dummy incorporates improved biofidelity and extended measurement capability. Because of this capability, the dummy can be used to evaluate the safety of children in a much wider array of environments than the Subpart I 6-year-old dummy, including assessing the effects of air bag deployment on out-of-position children. Comments were received from American Academy of Pediatrics (AAP), Advocates for Auto Safety (AAS), and International Electronics Engineering (IEE). AAP, AAS and Volvo endorse the greater biofidelity of the H–III6C dummy without reservations. Only IEE said there was a need to improve the dummy's proximity sensing and the pressure profile of the seated dummy's buttocks.

Biofidelity is a desirable and useful feature of this dummy which, because of the extended measuring capability, is endorsed by the commenters, particularly for its usefulness in evaluating child safety in the air bag environment. However, the IEE request for redesign of the dummy buttocks and for proximity sensing are technically premature and beyond the scope of this rulemaking.

IEE's comment about proximity sensing and the pressure profile a seated dummy's buttocks would be relevant if the agency were to decide that occupant sensing is needed along the lines suggested by IEE. However, this dummy in its original design was not intended to have such sensing and pressure profile capabilities. The development of such capabilities are still in early stages of research and considerably more research, testing and evaluation will need to be done before such technologies mature and become acceptable for safety certification activities. Nevertheless, IEE's comment is acknowledged as grounds for possible future research and development.

VIII. User's Manual—Procedures for Assembly, Disassembly and Inspection (PADI)

The NPRM noted in sections 572.120(a)(2) and 572.121(b) that the final rule package will contain a ''User's Manual for the Hybrid III 6-year-old Dummy.'' Responding to the NPRM, Volvo recommended and DTES requested that the agency incorporate the SAE User's Manual by reference in the final rule. We acknowledge the DTES'' contribution toward clarifying several assembly and disassembly issues and in illustrating the importance of this document through their diligent development efforts. NHTSA commends the DTES for their participation and contribution, and encourages the manual's further development as the test data begins to surface in larger volumes from its application in the field. Nevertheless, we have decided against incorporating the manual into Part 572.

During initial dummy assessment stages, the agency had to establish methods for an initial dummy inspection. Additionally, part of the agency test protocol was based on a Draft SAE User's Manual of May 27, 1997. Subsequent to the issuance of the NPRM, the SAE provided several user manual draft revisions in August, October and December 1998. Each of them consisted basically of two parts: inspection and calibration. Each of the User Manuals varied to some extent in the way inspection and calibration procedures and norms were formulated.

The December 1998 SAE User's Manual draft shows it to be a reasonably well-developed document that is well suited for research use. However, because of redundancies, ambiguities, and in some areas a lack of objectivity, it is far less suitable for regulation and compliance purposes. If employed in its present form, it could become a source of different interpretations and misunderstandings, and as a result create difficulties for both the agency and dummy users in enforcement and compliance certification programs. Also, the SAE User's Manual is copyrighted by both SAE and FTSS. Until the copyright status of the document is resolved, its usefulness as a reference document would be highly limited, particularly for publication by the agency through the electronic media. Further, the recommended DTES User's Manual includes both inspection and calibration procedures, while the agency format provides only an inspection document involving the dummy's initial conformance to dimensional mass and fit-for-assembly specifications, as well as objective assembly and disassembly procedures.

For these reasons, NHTSA has decided against adopting the SAE user's manual and has developed a publication, ''Procedures for Assembly, Disassembly, and Inspection (PADI) of the Hybrid III 6-year-old Child Crash Test Dummy, Alpha version'' (August, 1999) [3] for the following reasons:

- The agency-developed procedure for disassembly, assembly and inspection provide unambiguous, direct and straightforward instructions;
- The document references only essential drawings based on the final rule parts list;
- Important and detailed photographic views are included to facilitate the assembly-disassembly process, including the mounting of generic instrumentation;
- It provides specific information for calibration laboratories, particularly useful for disassembly of any single

[3] NHTSA believes that the name ''user's manual'' for this document is a misnomer given its intended purpose. As the name implies, the user's manual should provide instructions on how to use the dummy, rather than how to inspect it and perform its assembly/disassembly.

major component, determination of instrumentation polarity, and the measurement of impactor moment of inertia;

- It uniquely provides recommendations for cable and connector routing and attachment based on lessons learned in the agency test program;
- It includes important torque specifications for all fasteners used in the dummy;
- It supports all elements of the final rule and will facilitate the dummy's use in agency required testing activities; and
- Its publication and copying are not hampered by copyright claims.

IX. Dummy Availability

At the issuance of the NPRM, the agency noted that only one manufacturer (FTSS) was producing the H–III6C dummy. Although the dummy has been available for several years, its use has been limited primarily to research applications. Mitsubishi commented that it did not have sufficient time to evaluate the proposed dummy and could not offer extensive comments.

Numerous organizations possessed the Hybrid III 6-year-old type dummy when the NPRM was published. Additionally, over a year has passed since the issuance of the NPRM. During this time, all interested parties have had ample time to procure and evaluate the dummy and provide additional comments. The agency expressly invites and routinely considers all comments submitted outside of the comment period, but prior to arriving at a final agency position. Also, during this period, considerable further discussions have taken place at the SAE DTES regarding adequacy of this dummy in calibration and test applications. Interested parties have had sufficient opportunity to avail themselves of the information that is contained in the minutes of those meetings. Inasmuch as no other comments were received regarding the availability of the dummy, it is assumed that Mitsubishi as well as others were satisfied with the dummy as proposed in the NPRM.

X. Other Issues

The NPRM proposed that conformance of the dummy's structural properties would be checked before and after any compliance testing. When we published the NPRM for the Hybrid III 5th percentile adult small female dummy on September 3, 1998, 63 FR 46981, we decided to specify that the dummy conform to this part in every respect before its use in any test, but not after. The NPRMs for the Hybrid III 3-year-old child test dummy (64 FR 4385, January 28, 1999) and the 12-month-old infant dummy (CRABI) (64 FR 10965, March 8, 1999) proposed the same specification as the one proposed for the small adult female dummy. A full explanation of the agency's rationale can be found in the NPRM for the small adult female dummy. The agency rationale for the change in when to check for structural conformance is as applicable for the H–III6C as it is for the other dummies. Accordingly, section 572.121(c) has been changed to adopt the language used in the NPRMs for the other pending dummy rulemakings.

Regulatory Analyses and Notices

Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, ''Regulatory Planning and Review'' (58 FR 51735, October 4, 1993), provides for making determinations whether a regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and to the requirements of the Executive Order. The Order defines a ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

We have considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. This rule is not considered a significant regulatory action under section 3(f) of the Executive Order 12866. Consequently, it was not reviewed by the Office of Management and Budget. This rulemaking document was not reviewed by the Office of Management and Budget under E.O. 12866, ''Regulatory Planning and Review.'' The rulemaking action is also not considered to be significant under the Department's Regulatory Policies and Procedures (44 FR 11034, February 26, 1979).

This document amends 49 CFR Part 572 by adding design and performance specifications for a new six-year-old child dummy which the agency may later separately propose for use in the Federal motor vehicle safety standards. This rule indirectly imposes requirements on only those businesses which choose to manufacture or test with the dummy, in that the agency will only use dummies for compliance testing that meet all of the criteria specified in this rule. It may indirectly affect vehicle and child seat manufacturers if it is incorporated by reference into the advanced air bag rulemaking or a future Child Seating Systems (FMVSS No. 213) rulemaking.

The cost of an uninstrumented H–III6C dummy is approximately $30,000. Instrumentation will add approximately $25,000 to $41,000 to the cost, depending on the number of data channels the user chooses to collect.

Because the economic impacts of this proposal are so minimal, no further regulatory evaluation is necessary.

Executive Order 13132

We have analyzed this rule in accordance with Executive Order 13132 (''Federalism''). We have determined that this rule does not have sufficient Federalism impacts to warrant the preparation of a federalism assessment.

Executive Order 13045

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental, health or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us.

This rule is not subject to the Executive Order because it is not economically significant as defined in E.O. 12866. It does indirectly involve decisions based on health risks that disproportionately affect children, namely, the risk of deploying air bags to children. However, this rulemaking serves to help vehicle and air bag manufacturers to take steps to reduce that risk.

Executive Order 12778

Pursuant to Executive Order 12778, ''Civil Justice Reform,'' we have considered whether this rule will have any retroactive effect. This rule does not have any retroactive effect. A petition for reconsideration or other administrative proceeding will not be a prerequisite to an action seeking judicial review of this rule. This rule does not preempt the states from adopting laws or regulations on the same subject, except that it does preempt a state regulation that is in actual conflict with the federal regulation or makes compliance with the Federal regulation impossible or interferes with the implementation of the federal statute.

Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

I have considered the effects of this rulemaking action under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) and certify that this proposal will not have a significant economic impact on a substantial number of small entities. The rule does not impose or rescind any requirements for anyone. The Regulatory Flexibility Act does not, therefore, require a regulatory flexibility analysis.

National Environmental Policy Act

We have analyzed this amendment for the purposes of the National Environmental Policy Act and determined that it will not have any significant impact on the quality of the human environment.

Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. This rule does not propose any new information collection requirements.

National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272) directs us to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as the Society of Automotive Engineers (SAE). The NTTAA directs us to provide Congress, through OMB, explanations when we decide not to use available and applicable voluntary consensus standards.

The H-III6C dummy that is the subject of this document was developed under the auspices of the SAE. All relevant SAE standards were reviewed as part of the development process. The following voluntary consensus standards have been used in developing the dummy:

- SAE Recommended Practice J211–1995 Instrumentation for Impact Tests—Parts 1 and 2, dated March, 1995; and
- SAE J1733 Information Report, titled ''Sign Convention for Vehicle Crash Testing'', dated December 1994.

Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than $100 million in any one year (adjusted for inflation with base year of 1995). Before promulgating a NHTSA rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if we publish with the final rule an explanation why that alternative was not adopted.

This rule does not impose any unfunded mandates under the Unfunded Mandates Reform Act of 1995. This rule does not meet the definition of a Federal mandate because it does not impose requirements on anyone. Further, it will not result in costs of $100 million or more to either State, local, or tribal governments, in the aggregate, or to the private sector. Thus, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

Regulation Identifier Number (RIN)

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

List of Subjects in 49 CFR Part 572

Incorporation by reference. Motor vehicle safety.

In consideration of the foregoing, NHTSA amends 49 CFR part 572 as follows:

PART 572—ANTHROPOMORPHIC TEST DEVICES

1. The authority citation for part 572 continues to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117 and 30166; delegation of authority at 49 CFR 1.50.

2. 49 CFR part 572 is amended by adding a new subpart N consisting of §§ 572.120–572.127 to read as follows:

Subpart N—Six-year-old Child Test Dummy, Alpha Version

Sec.

Subpart N—Six-year-old Child Test Dummy, Alpha Version

§ 572.120 Incorporation by reference.

(a) The following materials are hereby incorporated into this subpart by reference:

(1) A drawings and inspection package entitled ''Drawings and Specifications for the Hybrid III 6-year-

old Dummy (August 1999)'', consisting of:

(i) Drawing No. 127–1000, Head Assembly,

(ii) Drawing No. 127–1015, Neck Assembly,

(iii) Drawing No. 127–2000, Upper Torso Assembly,

(iv) Drawing No. 127–3000, Lower Torso Assembly,

(v) Drawing No. 127–4000, Leg Assembly,

(vi) Drawing No. 127–5000, Arm Assembly, and

(vii) The Hybrid III Six-year-old Parts List.

(2) A procedures manual entitled ''Procedures for Assembly, Disassembly, and Inspection (PADI) of the Hybrid III 6-year-old Child Crash Test Dummy, Alpha Version (August 1999)'';

(3) SAE Recommended Practice J211–1995 Instrumentation for Impact Tests—Parts 1 and 2, dated March, 1995'';

(4) SAE J1733 Information Report, titled ''Sign Convention for Vehicle Crash Testing'', dated December 1994.

(b) The Director of the Federal Register approved those materials incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the materials may be inspected at NHTSA's Technical Reference Library, 400 Seventh Street S.W., room 5109, Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

(c) The incorporated materials are available as follows:

(1) The Drawings and Specifications for the Hybrid III 6-year-old Dummy (August 1999) referred to in paragraph (a)(1) of this section and the Procedures for Assembly, Disassembly, and Inspection (PADI) of the Hybrid III 6-year-old Child Crash Test Dummy, Alpha Version (August 1999) referred to in paragraph (a)(2) of this section, are available from Reprographic Technologies, 9000 Virginia Manor Road, Beltsville, MD 20705 (301) 419–5070.

(2) The SAE materials referred to in paragraphs (a)(3) and (a)(4) of this section are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

§ 572.121 General description.

(a) The Hybrid III type 6-year-old dummy is defined by drawings and specifications containing the following materials:

(1) Technical drawings and specifications package P/N 127–0000, the titles of which are listed in Table A;

(2) Procedures for Assembly, Disassembly, and Inspection (PADI) of the Hybrid III 6-year-old test dummy, Alpha version (August 1999).

TABLE A

Component assembly	Drawing number
Head assembly	127–1000
Neck assembly	127–1015
Upper torso assembly	127–2000
Lower torso assembly	127–3000
Leg assembly	127–4000
Arm assembly	127–5000

(b) Adjacent segments are joined in a manner such that except for contacts existing under static conditions, there is no contact between metallic elements throughout the range of motion or under simulated crash impact conditions.

(c) The structural properties of the dummy are such that the dummy must conform to this Subpart in every respect before use in any test similar to those specified in Standard 208, ''Occupant Crash Protection'', and Standard 213, ''Child Restraint Systems''.

§ 572.122 Head assembly and test procedure

(a) The head assembly for this test consists of the complete head (drawing 127–1000), a six-axis neck transducer (drawing SA572–S11) or its structural replacement (drawing 78051–383X), a head to neck-to-pivot pin (drawing 78051–339), and 3 accelerometers (drawing SA572–S4).

(b) When the head assembly in paragraph (a) of this section is dropped from a height of 376.0 ± 1.0 mm (14.8 ± 0.04 in) in accordance with paragraph (c) of this section, the peak resultant acceleration at the location of the accelerometers at the head CG may not be less than 245 G or more than 300 G. The resultant acceleration vs. time history curve shall be unimodal; oscillations occurring after the main pulse must be less than 10 percent of the peak resultant acceleration. The lateral acceleration shall not exceed 15 g's (zero to peak).

(c) *Head test procedure.* The test procedure for the head is as follows:

(1) Soak the head assembly in a controlled environment at any temperature between 18.9 and 25.6 °C (66 and 78 °F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Prior to the test, clean the impact surface of the skin and the impact plate surface with isopropyl alcohol, trichloroethane, or an equivalent. The skin of the head must be clean and dry for testing.

(3) Suspend the head assembly as shown in Figure N1. The lowest point on the forehead must be 376.0 ± 1.0 mm (14.8 ± 0.04 in) from the impact surface and the head must be oriented to an incline of 62 ± 1 deg. between the ''D'' plane as shown in Figure N1 and the plane of the impact surface. The 1.57 mm (0.062 in) diameter holes located on either side of the dummy's head shall be used to ensure that the head is level with respect to the impact surface.

(4) Drop the head assembly from the specified height by means that ensure a smooth, instant release onto a rigidly supported flat horizontal steel plate which is 50.8 mm (2 in) thick and 610 mm (24 in) square. The impact surface shall be clean, dry and have a micro finish of not less than $203.2. \times 10^{-6}$ mm (8 micro inches) (RMS) and not more than 2032.0×10^{-6} mm (80 micro inches) (RMS).

(5) Allow at least 2 hours between successive tests on the same head.

§ 572.123 Neck assembly and test procedure.

(a) The neck assembly for the purposes of this test consists of the assembly of components shown in drawing 127–1015.

(b) When the head-neck assembly consisting of the head (drawing 127–1000), neck (drawing 127–1015), pivot pin (drawing 78051–339), bib simulator (drawing TE127–1025, neck bracket assembly (drawing 127–8221), six-axis neck transducer (drawing SA572–S11), neck mounting adaptor (drawing TE–2208–001), and three accelerometers (drawing SA572–S4) installed in the head assembly as specified in § 572.122, is tested according to the test procedure in paragraph (c) of this section, it shall have the following characteristics:

(1) *Flexion.* (i) Plane D, referenced in Figure N2, shall rotate in the direction of preimpact flight with respect to the pendulum's longitudinal centerline between 74 degrees and 92 degrees. Within this specified rotation corridor, the peak moment about the occipital condyles shall be not less than 27 N-m (19.9 ft-lbf) and not more than 33 N-m (24.3 ft-lbf).

(ii) The positive moment shall decay for the first time to 5 N-m (3.7 ft-lbf) between 103 ms and 123 ms.

(iii) The moment shall be calculated by the following formula: Moment (N-m) = $M_y - (0.01778m) \times (F_X)$.

(iv) M_y is the moment about the y-axis and F_X is the shear force measured by the neck transducer (drawing SA572–S11) and 0.01778m is the distance from force to occipital condyle.

(2) *Extension.* (i) Plane D, referenced in Figure N3, shall rotate in the direction of preimpact flight with respect to the pendulum's longitudinal

centerline between 85 degrees and 103 degrees. Within this specified rotation corridor, the peak moment about the occipital condyles shall be not more than −19 N-m (−14 ft-lbf) and not less than −24 N-m (−17.7ft-lbf).

(ii) The negative moment shall decay for the first time to −5 N-m (−3.7 ft-lbf) between 123 ms and 147 ms.

(iii) The moment shall be calculated by the following formula: Moment (N-m) = M_y—(0.01778m) x (F_X).

(iv) M_y is the moment about the y-axis and F_X is the shear force measured by the neck transducer (drawing SA572–S11) and 0.017778m is the distance from force to occipital condyle.

(3) Time-zero is defined as the time of initial contact between the pendulum striker plate and the honeycomb material.

(c) *Test procedure.* The test procedure for the neck assembly is as follows:

(1) Soak the neck assembly in a controlled environment at any temperature between 20.6 and 22.2 °C (69 and 72 °F) and a relative humidity between 10 and 70 percent for at least four hours prior to a test.

(2) Torque the jam nut (drawing 9000341) on the neck cable (drawing 127–1016) to 0.23 ± 0.02 N-m (2.0 ± 0.2 in-lbs).

(3) Mount the head-neck assembly, defined in paragraph (b) of this section, on the pendulum so the midsagittal plane of the head is vertical and coincides with the plane of motion of the pendulum as shown in Figure N2 for flexion tests and Figure N3 for extension tests.

(4) Release the pendulum and allow it to fall freely from a height to achieve an impact velocity of 4.95 ± 0.12 m/s (16.2 ± 0.4 ft/s) for flexion tests and 4.3 ± 0.12 m/s (14.10 ± 0.40 ft/s) for extension tests, measured by an accelerometer mounted on the pendulum as shown in Figure 22 of 49 CFR 572 at the instant of contact with the honey comb.

(i) Time-zero is defined as the time of initial contact between the pendulum striker plate and the honeycomb material. All data channels should be at the zero level at this time.

(ii) Stop the pendulum from the initial velocity with an acceleration vs. time pulse which meets the velocity change as specified below. Integrate the pendulum acceleration data channel to obtain the velocity vs. time curve:

TABLE B

Time	Pendulum pulse			
	Flexion		Extension	
ms	m/s	ft/s	m/s	ft/s
10	1.2–1.6	3.9–5.3	1.0–1.4	3.3–4.6
20	2.4–3.4	7.9–11.2	2.2–3.0	7.2–9.8
30	3.8–5.0	12.5–16.4	3.2–4.2	10.5–13.8

§ 572.124 Thorax assembly and test procedure.

(a) *Thorax (upper torso) assembly.* The thorax consists of the part of the torso assembly shown in drawing 127–2000.

(b) When the anterior surface of the thorax of a completely assembled dummy (drawing 127–0000) is impacted by a test probe conforming to section 572.127(a) at 6.71 ± 0.12 m/s (22.0 ± 0.4 ft/s) according to the test procedure in paragraph (c) of this section:

(1) The maximum sternum displacement (compression) relative to the spine, measured with chest deflection transducer (drawing SA572–S50), must be not less than 38.0 mm (1.50 in) and not more than 46.0 mm (1.80 in). Within this specified compression corridor, the peak force, measured by the probe in accordance with section 572.127, shall not be less than 1150 N (259 lbf) and not more than 1380 N (310 lbf). The peak force after 12.5 mm (0.5 in) of sternum displacement but before reaching the minimum required 38.0 mm (1.5 in) sternum displacement limit shall not exceed by more than 5% the value of the peak force measured within the required displacement limit.

(2) The internal hysteresis of the ribcage in each impact as determined by the plot of force vs. deflection in paragraph (b)(1) of this section shall be not less than 65 percent but not more than 85 percent.

(c) *Test procedure.* The test procedure for the thorax assembly is as follows:

(1) Soak the dummy in a controlled environment at any temperature between 20.6 and 22.2 °C (69 and 72 °F) and a relative humidity between 10 and 70 percent for at least four hours prior to a test.

(2) Seat and orient the dummy, wearing a light-weight cotton stretch short-sleeve shirt and above-the-knee pants, on a seating surface without back support as shown in Figure N4, with the limbs extended horizontally and forward, parallel to the midsagittal plane, the midsagittal plane vertical within ± 1 degree and the ribs level in the anterior-posterior and lateral directions within ± 0.5 degrees.

(3) Establish the impact point at the chest midsagittal plane so that the impact point of the longitudinal centerline of the probe coincides with the midsagittal plane of the dummy within ± 2.5 mm (0.1 in) and is 12.7 ± 1.1 mm (0.5 ± 0.04 in) below the horizontal-peripheral centerline of the No. 3 rib and is within 0.5 degrees of a horizontal line in the dummy's midsagittal plane.

(4) Impact the thorax with the test probe so that at the moment of contact the probe's longitudinal center line falls within 2 degrees of a horizontal line in the dummy's midsagittal plane.

(5) Guide the test probe during impact so that there is no significant lateral, vertical or rotational movement.

§ 572.125 Upper and lower torso assemblies and torso flexion test procedure.

(a) *Upper/lower torso assembly.* The test objective is to determine the stiffness effects of the lumbar spine (drawing 127–3002), including cable (drawing 127–8095), mounting plate insert (drawing 910420–048), nylon shoulder bushing (drawing 9001373), nut (drawing 9001336), and abdominal insert (drawing 127–8210), on resistance to articulation between upper torso assembly (drawing 127–2000) and lower torso assembly (drawing 127–3000).

(b)(1) When the upper torso assembly of a seated dummy is subjected to a force continuously applied at the head to neck pivot pin level through a rigidly attached adaptor bracket as shown in Figure N5 according to the test procedure set out in paragraph (c) of this section, the lumbar spine-abdomen assembly shall flex by an amount that permits the upper torso assembly to translate in angular motion until the machined rear surface of the instrument cavity at the back of the thoracic spine box is at 45 ± 0.5 degrees relative to the vertical transverse plane, at which time the force applied as shown in Figure N5 must be not less than 147 N (33 lbf) and not more than 200 N (45 lbf), and

(2) Upon removal of the force, the torso assembly must return to within 8 degrees of its initial position.

(c) *Test procedure.* The test procedure for the torso assemblies is as follows:

(1) Soak the dummy in a controlled environment at any temperature between 18.9 and 25.6 °C (66 and 78 °F) and a relative humidity between 10 and 70 percent for at least four hours prior to a test.

(2) Attach the dummy (with or without the legs below the femurs) to the fixture in a seated posture as shown in Figure N5.

(3) Secure the pelvis at the pelvis instrument cavity rear face by threading four ¼ in cap screws into the available threaded attachment holes. Tighten the mountings so that the test material is rigidly affixed to the test fixture and the pelvic-lumbar joining surface is horizontal.

(4) Flex the thorax forward three times between vertical and until the torso reference plane, as shown in figure N5, reaches 30 ± 2 degrees from vertical. Bring the torso to vertical orientation, remove all externally applied flexion forces, and wait 30 minutes before conducting the test. During the 30-minute waiting period, the dummy's upper torso shall be externally supported at or near its vertical orientation to prevent sagging.

(5) Remove the external support and wait two minutes. Measure the initial orientation of the torso reference plane of the seated, unsupported dummy as shown in Figure N5. This initial torso orientation angle may not exceed 22 degrees.

(6) Attach the loading adapter bracket to the spine of the dummy, the pull cable, and the load cell as shown in Figure N5.

(7) Apply a tension force in the midsagittal plane to the pull cable as shown in Figure N5 at any upper torso deflection rate between 0.5 and 1.5 degrees per second, until the torso reference plane is at 45 ± 0.5 degrees of flexion relative to the vertical transverse plane as shown in Figure N5.

(8) Continue to apply a force sufficient to maintain 45 ± 0.5 degrees of flexion for 10 seconds, and record the highest applied force during the 10-second period.

(9) Release all force as rapidly as possible, and measure the return angle at 3 minutes or any time thereafter after the release.

§ 572.126 Knees and knee impact test procedure.

(a) *Knee assembly.* The knee assembly is part of the leg assembly (drawing 127–4000–1 and –2).

(b) When the knee assembly, consisting of knee machined (drawing 127–4013), knee flesh (drawing 127–4011), lower leg (drawing 127–4014), the foot assembly (drawing 127–4030–1 (left) and –2 (right)) and femur load transducer (drawing SA572–S10) or its structural replacement (drawing 127–4007) is tested according to the test procedure in section 572.127(c), the peak resistance force as measured with the test probe mounted accelerometer must be not less than 2.0 kN (450 lbf) and not more than 3.0 kN (625 lbf).

(c) *Test Procedure.* The test procedure for the knee assembly is as follows:

(1) Soak the knee assembly in a controlled environment at any temperature between 18.9 and 25.6 °C (66 and 78 °F) and a relative humidity from 10 to 70 percent for at least four hours prior to a test.

(2) Mount the test material and secure it to a rigid test fixture as shown in Figure N6. No contact is permitted between any part of the foot or tibia and any exterior surface.

(3) Align the test probe so that throughout its stroke and at contact with the knee it is within 2 degrees of horizontal and collinear with the longitudinal centerline of the femur.

(4) Guide the pendulum so that there is no significant lateral vertical or rotational movement at time-zero.

(5) The test probe velocity at the time of contact shall be 2.1 ± 0.03 m/s (6.9 # 0.1 ft/s).

§ 572.127 Test conditions and instrumentation.

(a) The test probe for thoracic impacts shall be of rigid metallic construction, concentric in shape, and symmetric about its longitudinal axis. It shall have a mass of 2.86 ± 0.02 kg (6.3 ± 0.05 lbs) and a minimum mass moment of inertia of 622 kg-cm^2 (0.55 lbs-in-sec^2) in yaw and pitch about the CG. ⅓ of the weight of the suspension cables and their attachments to the impact probe must be included in the calculation of mass, and such components may not exceed five percent of the total weight of the test probe. The impacting end of the probe, perpendicular to and concentric with the longitudinal axis, must be at least 12.7 mm (0.5 in) long, and have a flat, continuous, and non-deformable 101.6 ± 0.25 mm (4.00 ± 0.01 in) diameter face with a maximum edge radius of 12.7 mm (0.5 in). The probe's end opposite to the impact face must have provisions for mounting of an accelerometer with its sensitive axis collinear with the longitudinal axis of the probe. No concentric portions of the impact probe may exceed the diameter of the impact face. The impact probe shall have a free air resonant frequency of not less than 1000 Hz.

(b) The test probe for knee impacts shall be of rigid metallic construction, concentric in shape, and symmetric about its longitudinal axis. It shall have a mass of 0.82 ± 0.01 kg (1.8 ± 0.02 lbs) and a minimum mass moment of inertia of 34 kg-cm^2 (0.03 lbs-in-sec^2) in yaw and pitch about the CG. ⅓ of the weight of the suspension cables and their attachments to the impact probe must be included in the calculation of mass, and such components may not exceed five percent of the total weight of the test probe. The impacting end of the probe, perpendicular to and concentric with the longitudinal axis, must be at least 12.7 mm (0.5 in) long, and have a flat, continuous, and non-deformable 76.2 ± 0.2 mm (3.00 ± 0.01 in) diameter face with a maximum edge radius of 12.7 mm (0.5 in). The probe's end opposite to the impact face must have provisions for mounting an accelerometer with its sensitive axis collinear with the longitudinal axis of the probe. No concentric portions of the impact probe may exceed the diameter of the impact face. The impact probe must have a free air resonant frequency of not less than 1000 Hz.

(c) Head accelerometers shall have dimensions, response characteristics, and sensitive mass locations specified in drawing SA572–S4 and be mounted in the head as shown in drawing 127–0000 sheet 3.

(d) *Neck force/moment transducer.* (1) The upper neck force/moment transducer shall have the dimensions, response characteristics, and sensitive axis locations specified in drawing SA572–S11 and be mounted in the head-neck assembly as shown in drawing 127–0000 sheet 3.

(2) The optional lower neck force/moment transducer shall have the dimensions, response characteristics, and sensitive axis locations specified in drawing SA572–S26 and be mounted as shown in drawing 127–0000 sheet 3.

(e) The thorax accelerometers shall have the dimensions, response characteristics, and sensitive mass locations specified in drawing SA572–S4 and be mounted in the torso assembly in triaxial configuration at T4, and as optional instrumentation in uniaxial for- and-aft oriented configuration on the most anterior ends of ribs #1 and #6 and at the spine box at the levels of #1 and #6 ribs as shown in 127–0000 sheet 3.

(f) The chest deflection transducer shall have the dimensions and response characteristics specified in drawing SA572–S50 and be mounted in the upper torso assembly as shown in 127–0000 sheet 3.

(g) The optional lumbar spine force-moment transducer shall have the dimensions, response characteristics, and sensitive axis locations specified in drawing SA572–S12 and be mounted in the lower torso assembly as shown in drawing 127–0000 sheet 3 as a replacement for lumbar adaptor 127–3005.

(h) The optional iliac spine force transducers shall have the dimensions and response characteristics specified in drawing SA572–S13 and be mounted in the torso assembly as shown in drawing 127–0000 sheet 3 as a replacement for ASIS load cell 127–3015–1 (left) and −2 (right).

(i) The optional pelvis accelerometers shall have the dimensions, response characteristics, and sensitive mass locations specified in drawing SA572–S4 and be mounted in the torso assembly in triaxial configuration in the pelvis bone as shown in drawing 127–0000 sheet 3.

(j) The femur force transducer shall have the dimensions and response characteristics specified in drawing SA72–S10 and be mounted in the leg assembly as shown in drawing 127–0000 sheet 3.

(k) The outputs of acceleration and force-sensing devices installed in the dummy and in the test apparatus specified by this part must be recorded in individual data channels that conform to SAE Recommended Practice J211, Rev. Mar95 ''Instrumentation for lmpact Tests,'' except that the lumbar measurements are based on CFC 600, with channel classes as follows:

(1) Head acceleration—Class 1000

(2) Neck:

(i) Forces—Class 1000

(ii) Moments—Class 600

(iii) Pendulum acceleration—Class 180

(3) Thorax:

(i) Rib acceleration—Class 1000

(ii) Spine and pendulum accelerations—Class 180

(iii) Sternum deflection—Class 600

(4) Lumbar:

(i) Forces—Class 1000

(ii) Moments—Class 600

(iii) Flexion—Class 60 if data channel is used

(5) Pelvis accelerations—Class 1000

(6) Femur forces—Class 600

(l) Coordinate signs for instrumentation polarity shall conform to the Sign Convention For Vehicle Crash Testing, Surface Vehicle Information Report, SAE J1733, 1994–12.

(m) The mountings for sensing devices shall have no resonance frequency less than 3 times the frequency range of the applicable channel class.

(n) Limb joints must be set at one G, barely restraining the weight of the limb when it is extended horizontally. The force needed to move a limb segment shall not exceed 2G throughout the range of limb motion.

(o) Performance tests of the same component, segment, assembly, or fully assembled dummy shall be separated in time by period of not less than 30 minutes unless otherwise noted.

(p) Surfaces of dummy components may not be painted except as specified in this subpart or in drawings subtended by this subpart.

BILLING CODE 4910–59–P

Figures to Subpart N

Figure N 1

HEAD DROP TEST SET-UP SPECIFICATIONS

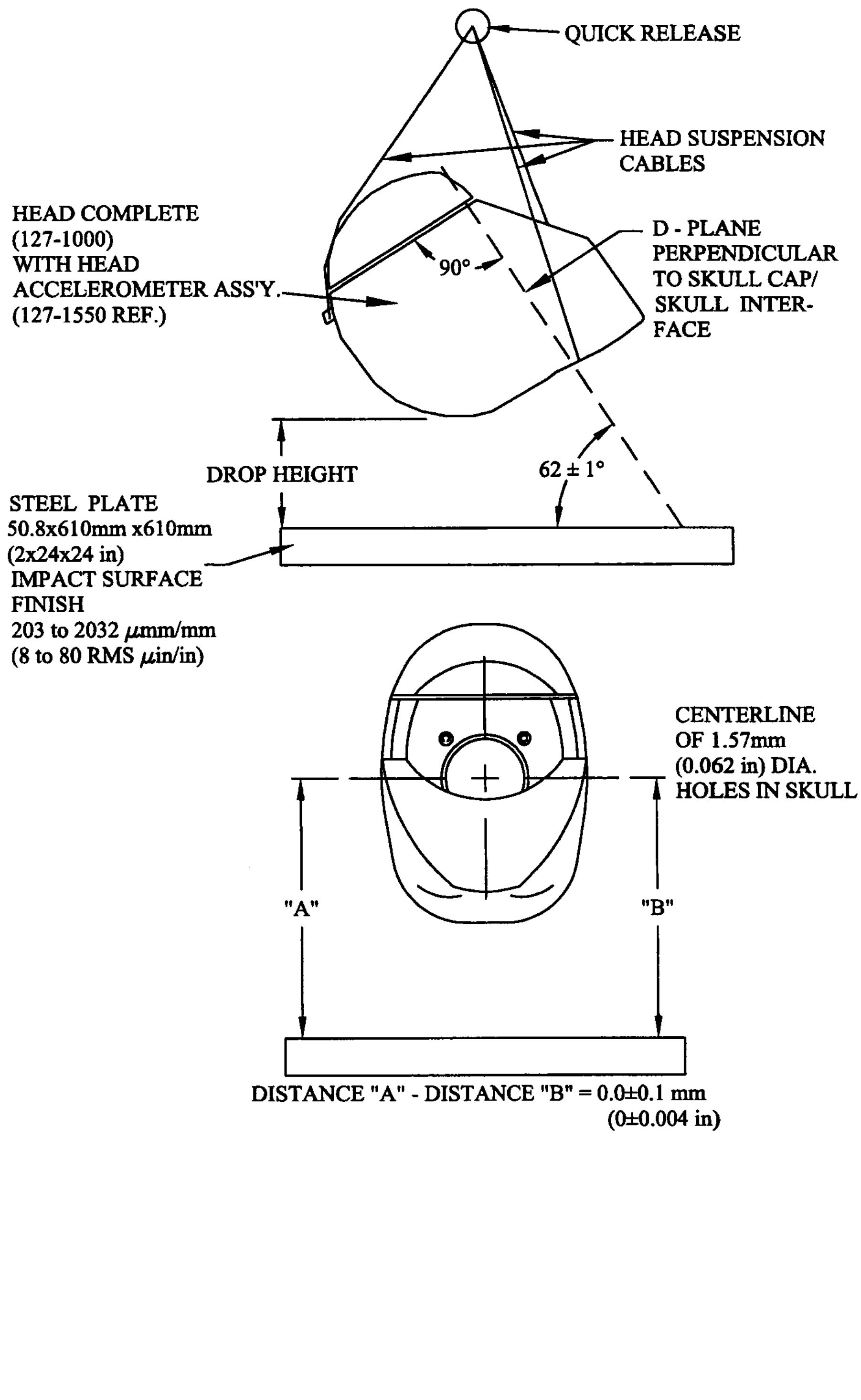
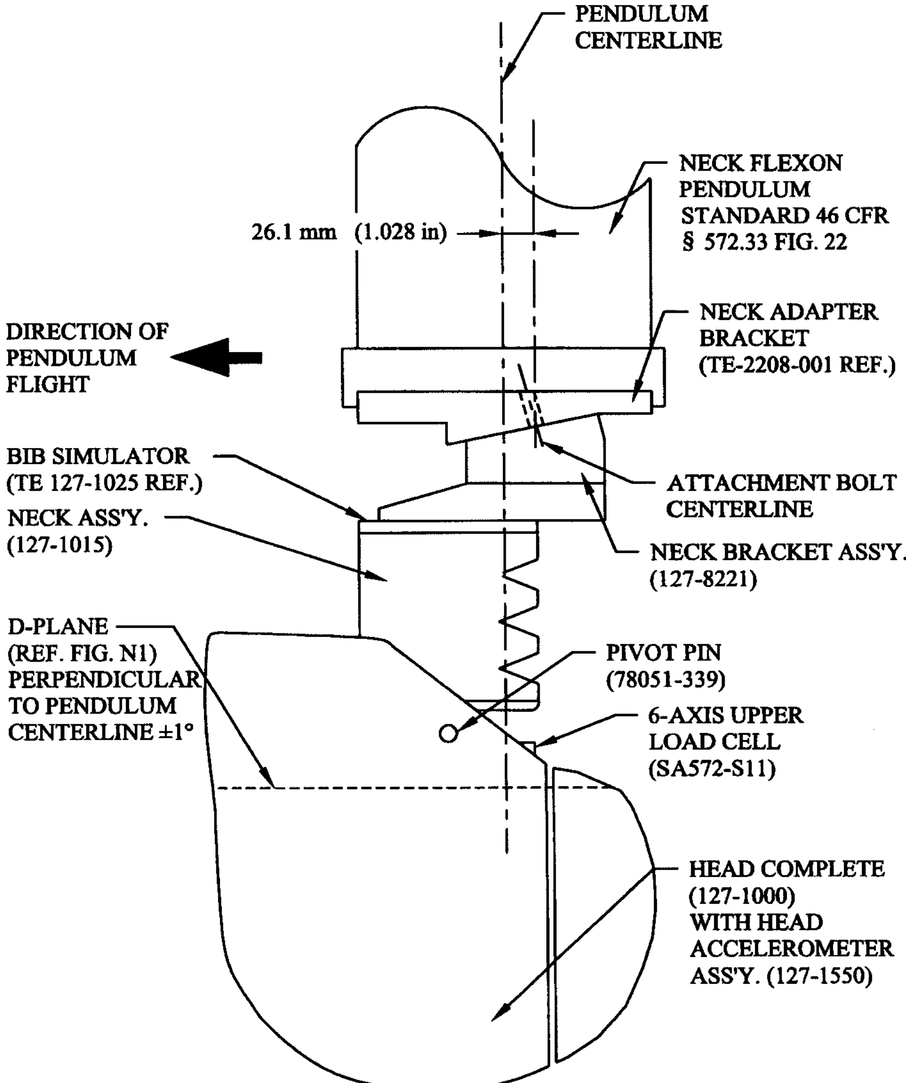


Figure N 2

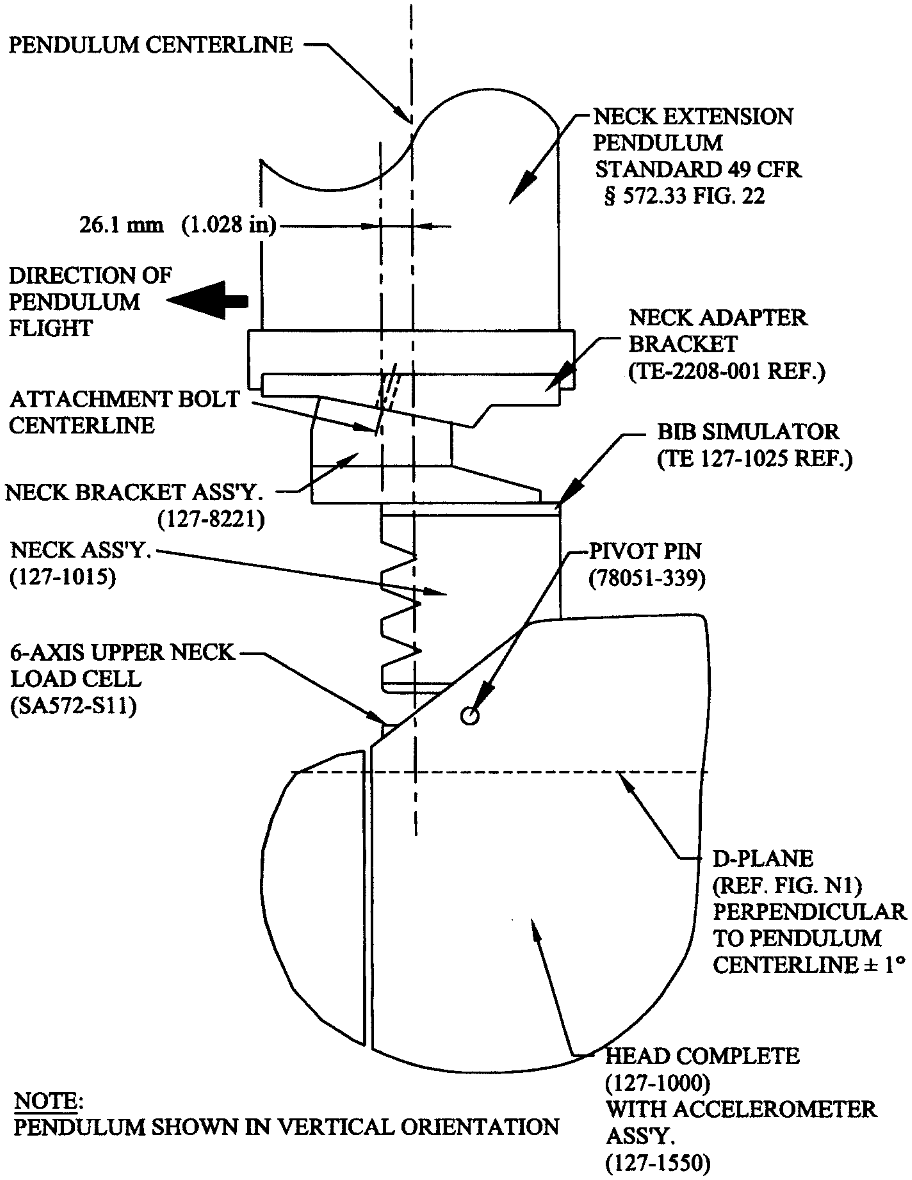
NECK FLEXION TEST SET-UP SPECIFICATIONS



NOTE:
PENDULUM SHOWN IN VERTICAL ORIENTATION

Figure N 3

NECK EXTENSION TEST SET-UP SPECIFICATIONS



NOTE:
PENDULUM SHOWN IN VERTICAL ORIENTATION

FIGURE N 4

THORAX IMPACT TEST SET-UP SPECIFICATIONS

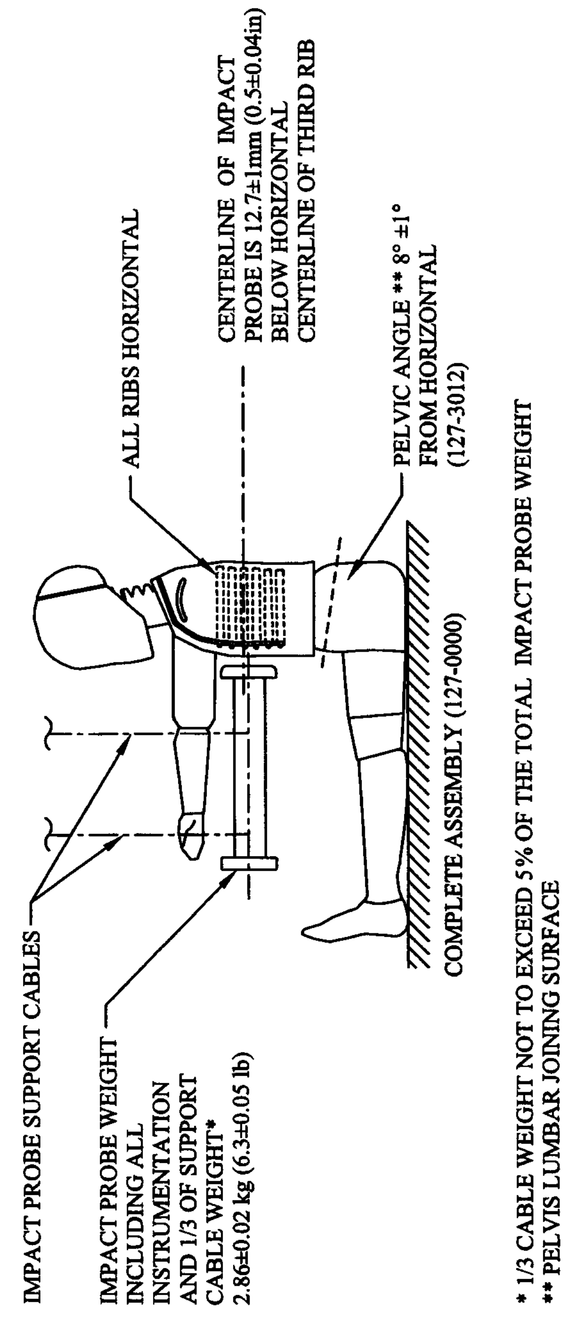


FIGURE N 5

TORSO FLEXION TEST SET-UP SPECIFICATIONS

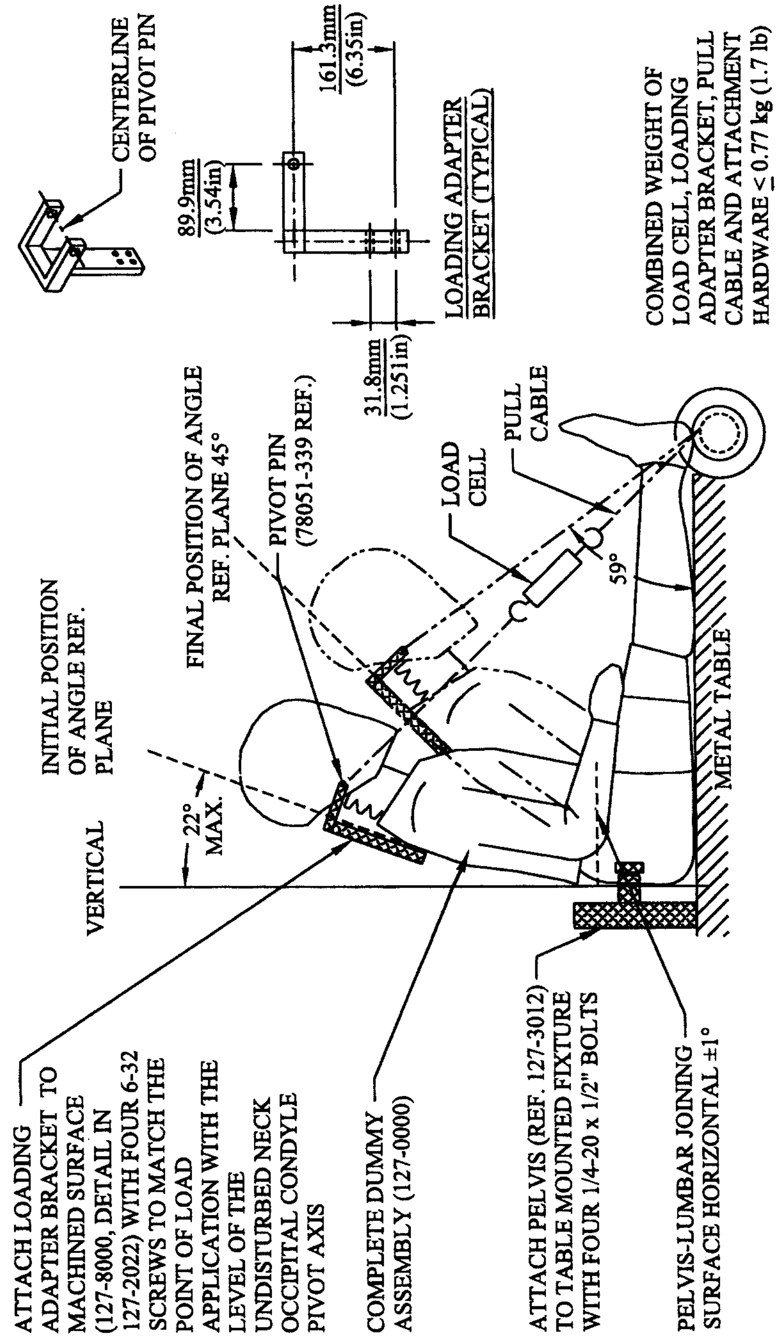
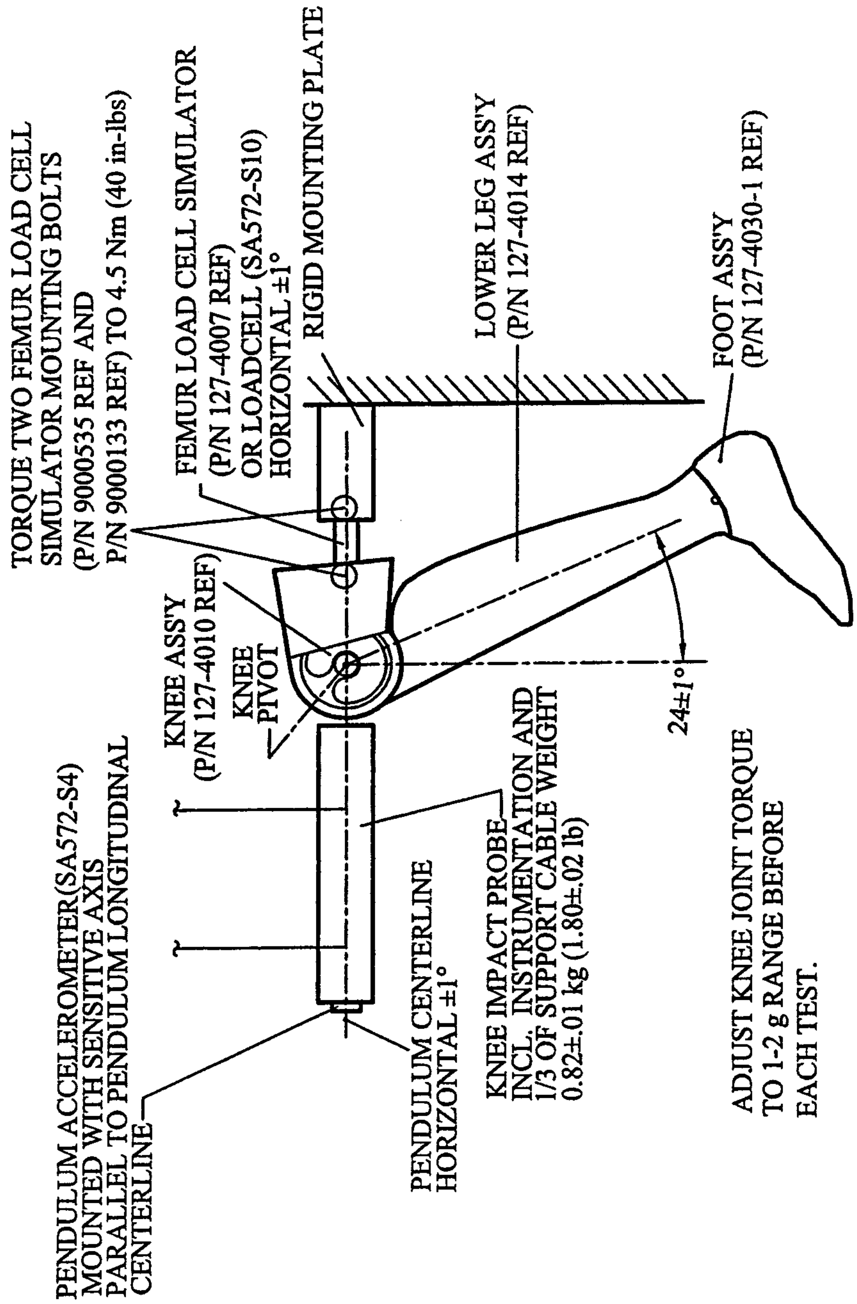


Figure N 6

KNEE IMPACT TEST SET-UP SPECIFICATIONS



Issued: December 29, 1999.

Rosalyn G. Millman,

Acting Administrator.

[FR Doc. 00–705 Filed 1–12–00; 8:45 am]

BILLING CODE 4910–59–C

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[I.D. 010600A]

Atlantic Highly Migratory Species Fisheries; Atlantic Bluefin Tuna

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Closure.

SUMMARY: NMFS closes for the 1999 fishing year (June 1, 1999, through May 31, 2000) the Angling category fishery for large medium and giant Atlantic bluefin tuna (BFT) in the southern area (the waters off Delaware and states south). Fishing for, retaining, possessing, or landing large medium and giant BFT (measuring 73 inches (185 cm) curved fork length or greater) under the Angling category quota is prohibited effective at 11:30 p.m., January 8, 2000. This action is being taken to prevent overharvest of the Angling category southern area subquota for large medium and giant (trophy) BFT.