Statement of Raymond G. Kammer, Director, NIST before the Senate Commerce Committee, Apr. 21, 1999:

Mr. Chairman I would now like to turn to a discussion of issues related to the Fastener Quality Act (FQA).

I will briefly describe the study on the FQA conducted by the Department of Commerce, our findings, and our recommendations.

Public Law 105-234 was signed by President Clinton on August 14, 1998. The law delayed implementation of the FQA until the later of June 1, 1999 or 120 days after the Department of Commerce submits a report to Congress on the FQA. The law directed that in the report the Department recommend changes in the Act that may be warranted based on changes in fastener manufacturing technology and the existence of other regulatory programs covering fasteners. The Department also considered (1) whether fastener problems may represent a current threat to public safety, (2) whether imported fasteners pose the same threat as they were perceived to 10 years ago, (3) how the military and other federal agencies have improved their procurement practices since 1990, and (4) concerns expressed by industry about the Act as written.

The Department published a Federal Register notice on October 7, 1998, requesting information from the public on all relevant issues. More than 600 pages of comments were received from 137 individuals and organizations.

The American Society of Mechanical Engineers (ASME) conducted a three-day workshop for the Department, November 9-11, 1998, in Chicago, Illinois, to document how fastener manufacturing technology has changed since 1990. Representatives from 63 industrial companies from the United States, Canada, and Europe, as well as 7 government agencies and 9 non-profit universities and associations attended the workshop.

Staff of the Defense Industrial Supply Center (DISC), the National Highway Traffic Safety Administration (NHTSA), the Federal Aviation Administration (FAA), and the National Aeronautics and Space Administration (NASA) supplied substantial information directly to the Department on either documented problems related to fasteners in programs that regulate public safety or improvements in fastener procurement practices made over the past decade.

In analyzing all available information, the Department concluded there have been a number of positive changes in the fastener industry since the FQA was passed. There are occasional problems but the number and magnitude of problems uncovered in this five-month study appear to be relatively small compared to a decade ago. In addition, there have been significant improvements in military and federal procurement of fasteners and significant advances in fastener manufacturing technology. I will cite a few examples from the DOC report, copies of which have been provided to the committee.

In analyzing 41,000 entries of airplane accidents and incidents in the National Transportation Safety Board's database dating back to 1983, less than 1% could be attributed to fasteners and

most of those appear to have been caused by problems other than fastener quality.

On the other hand, we found a mid-1990s report of a Norwegian commercial aircraft that crashed killing 55 people when its vertical stabilizer and attached rudder broke from the fuselage. A three-year investigation conducted by Norwegian authorities found that the bolts holding the stabilizer were only 50% of their specified hardness.

The U.S. Customs Service has been conducting spot checks of imported fasteners since 1991 to determine if the fasteners meet the specifications for the grade indicated. From 1991 through 1997, all spot checks have indicated no more than 1% fastener failures that Customs attributes to poor quality control by the manufacturers. However, they currently have an open investigation on a 5% nonconformance rate discovered in the January-April 1998, spot check.

During the period from just prior to enactment of the FQA through today, the automobile industry has been subject to fewer than 20 recalls where fastener quality was the problem. The percentage of all recalls involving fastener quality has been less than 1%. Very few accidents occurred in conjunction with these recalls and there were no fatalities for all the vehicles involved.

The fastener procurement practices of the Defense Industrial Supply Center (DISC) was a major focus of investigation during the 1980s leading up to the passage of the FQA. During the 1990s, DISC has instituted major new procurement practices including a Listing of Fastener Manufacturers Identification Symbols, 100% testing of lots of "flight safety critical fasteners," and the use of a Qualified Suppliers List Program for both fastener manufacturers and distributors. DISC has checked military inventories over the past four years and found no evidence of widespread problems with substandard or mismarked fasteners. Any instances of misconduct by fastener suppliers are quickly addressed.

The Department concludes that there have been a number of positive changes in the fastener industry since the FQA was passed. The number and magnitude of problems uncovered in this five-month study appear to be small compared to a decade ago. In addition, there have been significant improvements in military and federal procurement of fasteners and significant advances in fastener manufacturing technology. If Congress determines that it is appropriate to continue to regulate fasteners, the Department recommends Congress amend the Act as follows to limit its application to fasteners where public safety may remain a problem.

The Department recommends that coverage under the Act be limited to only high strength fasteners manufactured to consensus or government standards that require a grade mark. By this we mean fasteners having a minimum tensile strength of 120,000 psi, the level above which grade markings on fasteners are normally required. We recommend exclusion of fasteners whose specification merely reference consensus or government standards. For the most part, they are made for major end users like the automobile industry who are able to ensure they receive precisely the part they seek.

Additional recommendations include:

1. Encouraging the use of quality management systems like QS 9000 in fastener manufacturing by deeming fasteners from a facility registered to such a system to be FQA compliant,
2. Allowing required reports and certificates to be transmitted and stored electronically, and
3. Amending Title 18 of the United States Code to specifically address fraud in public and private commercial transactions involving fasteners.

In conclusion, the Department has completed the required study of the Fastener Quality Act. We are prepared to assist you in further deliberations on the future of the FQA if you so request. Thank you for your time and I would be happy to answer any questions.