



Langley Research Center Safety Alert

SA-16-90

Date: November 13, 1990

TO: All Facility Safety Heads
All Facility Coordinators
All Contractor Safety Representatives

FROM: 429/Safety Manager, Head, Safety Engineering Branch,
SSQRD

SUBJECT: GIDEP Safety Alert H9-A-90-02; Underwall Pipe Tees
GIDEP Safety Alert M6-A-90-03; Hex Head Bolts

Johnson Space Center had procured some 1/2 inch, schedule 40 pipe tees made of stainless steel which were under minimum design wall thickness due to a manufacturing deficiency. This problem was identified in GIDEP Alert H9-A-90-02. Since the manufacturer can not account for all the deficient tees produced in this manner, there is a potential that some of these fittings are installed here at Langley.

All Facility Safety Heads and Facility Coordinators should identify those systems under their cognizance which have 1/2 inch, schedule 40, butt welded, stainless steel pipe tees and contact Don Porter, Facility Systems Safety Engineer, Safety Engineering Branch, extension 43374. The 1/2 inch, schedule 40, butt welded, stainless, steel pipe tees are the only reported fitting to be deficient.

GIDEP Alert M6-A-90-03, from Ames Research Center rejected various fasteners for "not" meeting the material requirements of SAE J429. Langley Research Center has in stock only one of the rejected part numbers (FSN 5305-00-947-4360). This part is a 3/4-UNC-2A x 4 1/2", hex head bolt. The subject alert identified the bolt material as SAE 1541 (medium carbon steel) and also stated SAE J429 restricted the use of medium carbon steel to grade 8 fasteners, 7/16" in diameter and smaller. The specification actually reads, "Carbon steel may be used by agreement between producer and consumer, for sizes 1/4"-3/4" diameter products." Mechanical tests were performed here on the carbon steel bolts (allowed by SAE J429) and the results exceeded the minimum yield strength, tensile strength and reduction of area percentages specified for grade 8

fasteners. Surface hardness and core hardness tests were also performed and results were in the acceptable range stated in the specification. Therefore, the bolts are acceptable for use at Langley Research Center with regard to the problem noted in the subject GIDEP Alert.

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