Interpretation: 22-1

Subject: ASME/ANSI B30.22-1987

Date Issued: December 7, 1989

Question (1): With regard to Section 22-1.1.1(a), what is the physical definition of a condition of tipping or balance in regards to a commercial truck vehicle-mounted crane with stabilizers extended and set? For example, does condition of tipping or balance mean when a tire or stabilizer first leaves the ground or does the entire truck have to tip over?

Reply (1): Section 22-1.1.1(a) requires that load ratings be made in accordance with test procedures covered in referenced SAE J765, Section 3.1, which contains the definition of tipping or balance. The condition of tipping or balance in regards to each commercial truck vehicle-mounted crane with stabilizers extended and set shall be analyzed by a qualified person in accordance with SAE J765.

Question (2): With regard to Section 22-1.2.1(a), does this imply that load checks are required on these boom supporting cylinders? In other words, if a load is left suspended by the boom system and the truck is shut off and left unattended, shall the boom system be required to support the load if a lever is displaced that would normally lower the load?

Reply (2): Section 22-1.2.1(a) does not require or imply any specific hydraulic components. It requires that the crane support rated load without any action of the operator.

Question (3): With regard to Section 22-1.2.2(c):
(a) What is the definition of uncontrolled movement?
(b) Would the movement that would occur in the telescopic function as the result of a hydraulic line failure in that circuit be considered uncontrolled?
(c) If hose failure protection is required in this function, then why is it not stated so as in Section 22-1.2.1(b)?

Reply (3):
(a) The definition of uncontrolled movement is any movement not initiated by the operator during crane operation.
(b) Yes. Uncontrolled movement would result in the telescoping function if there was a hydraulic line failure without a holding device.
(c) At the time this Standard was written, it was felt that hydraulic line failure was understood to be included in this Section.
**Interpretation: 22-2**

Subject: ASME/ANSI B30.22-1987, Articulating Boom Cranes

Date Issued: March 16, 1992

Question: Paragraph 22-1.8.5 of ASME/ANSI B30.22-1987 states that: Prototype models of production articulating boom cranes shall meet applicable requirements of ANSI/SAE J1063.

Does this mean that strain gage testing per J1063 is the only acceptable method of test or are other methods acceptable so long as they test to stress levels equivalent to the design factors given in J1063?

We think that there are other methods which are more appropriate for small cranes than the non-destructive strain gaging approach, but ASME/ANSI B30.22 seems to allow only this method unless the term “meet applicable requirements” can be interpreted to allow test by other methods such as overloading to the Design Factors specified in J1063. The application of the J1063 procedure may be more than necessary for the smaller cranes typically used for field service work. Building and testing to destruction, the cranes at the lower end of the range covered (cranes with capacities greater than one ton) is a more traditional approach and just as effective, but depending on the interpretations these cranes may be excluded from compliance with B30.22.

Reply: The intent of SAE J1063 is to identify the maximum loading conditions for structural members of cantilevered telescoping boom cranes. The crane must then be strain gage tested under those loading conditions. For cantilevered prototype booms of production models there is no deviation.
**Interpretation: 22-4**

Subject: ASME B30.22-1993, Articulating Boom Cranes

Date Issued: March 7, 1997

Question (1): Do paras. 22-1.2.1(a) and (b), 22-1.2.2(b) and (c), and 22-1.2.3(d)(2) require load-holding valves to be directly, integrally part of the cylinder, either pad mounted with valves bolted or screwed into the cylinder?

Reply (1): The B30.22 volume requires a holding device on cylinders to prevent uncontrolled lowering or movement of the boom or load in case of a hydraulic line failure. There are many concepts of design that can accomplish this requirement. The B30.22 volume is a safety standard that provides requirements for safe product design. The volume clearly defines the purpose of the device. It is beyond the scope of this B30 Standard to define or approve specific design methods or concepts to meet the Standard's requirements.

Question (2): Do paras. 22-1.2.1(a) and (b), 22-1.2.2(b) and (c), and 22-1.2.3(d)(2) allow the use of remote-mounted, pilot-operated, load-holding valves?

Reply (2): See Reply (1).
Interpretation: 22-5

Subject: ASME B30.22d-1998, Articulating Boom Cranes, Para. 22-1.2.1(b)

Date Issued: December 10, 1999

Question: Paragraph 22-1.2.1(b) states: "(b) An integrally mounted holding device (such as a load holding check valve) shall be provided on the cylinder(s) to prevent uncontrolled lowering of the boom(s) in the event of a hydraulic system failure (e.g., supply hose rupture)."

Does this holding device have to be mounted directly to the cylinder, or can it be attached to the cylinder port using hydraulic steel line tubing?

Reply: The holding device must be attached directly to the cylinder to meet the requirement to be integrally mounted.

There are many design concepts that could be used to integrally mount holding devices on the cylinder. The manufacturer or a qualified person is responsible to minimize the potential failure points between the holding device and the cylinder pressure chamber.