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INTERNATIONAL
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SURFACE VEHICLE STANDARD

SAE J958

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Superseding J958MAR81

Submitted for recognition as an American National Standard

NOMENCLATURE AND DIMENSIONS FOR CRANE SHOVELS

Foreword—This Reaffirmed Document has been changed only to reflect the new SAE Technical Standards Board Format.

1. Scope—This SAE Standard includes names of major components and parts peculiar to this type of equipment. The illustrations are not intended to show all existing commercial machines or to be exactly descriptive of any particular machine. They have been selected to depict principles used in identifying specific mechanisms and to identify useful dimensional relationships.

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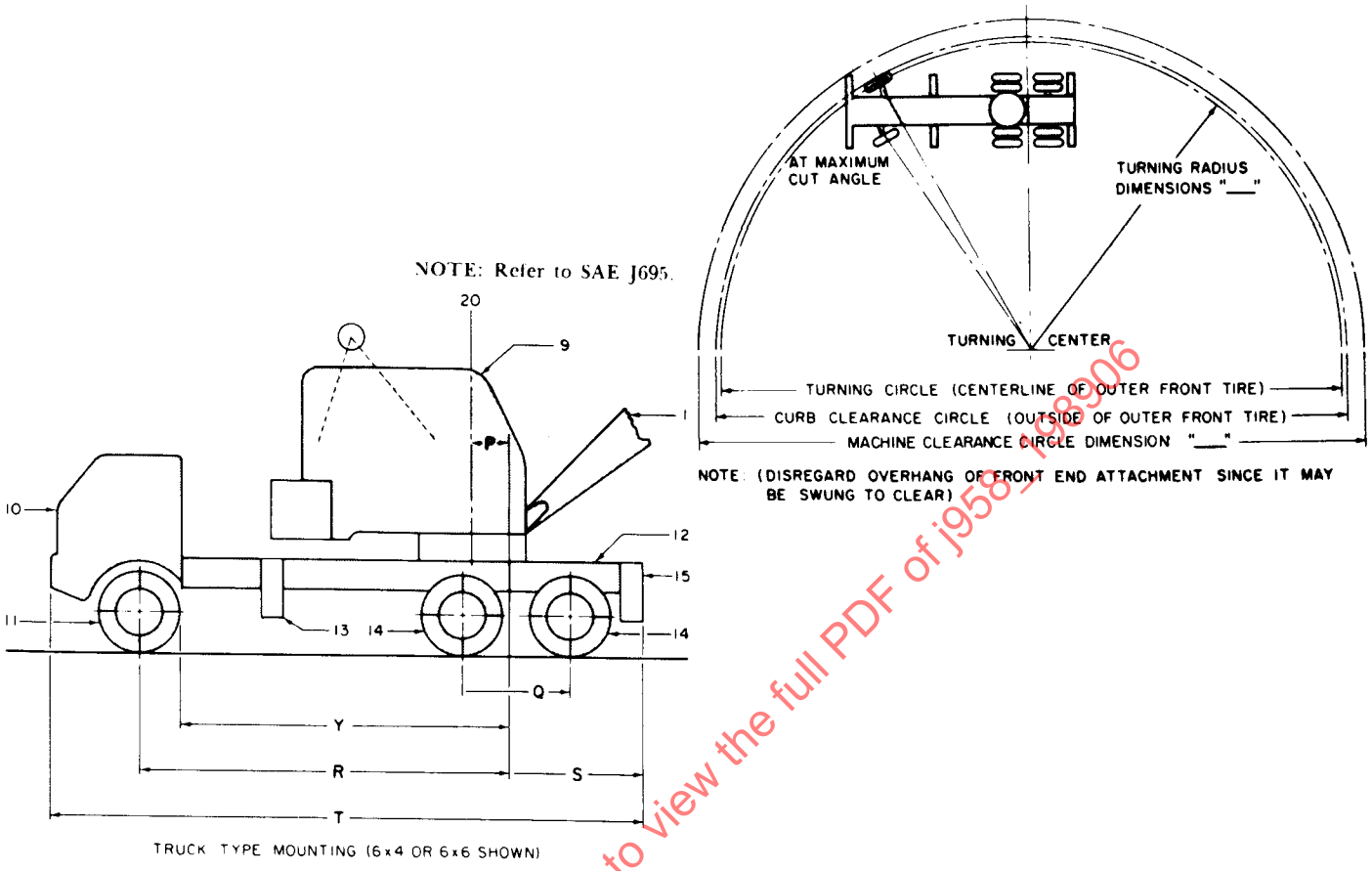

FIGURE 1—

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the lastest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J695 FEB84—Turning Ability and Off Tracking—Motor Vehicles
SAE J1234 JAN85—Specification Definitions—Off-Road Work Machines.

3. Rubber Tire Carrier Mountings with Revolving Superstructure

3.1 Dimensions—For revolving superstructure dimensions, see Figure 3 (A-F_2).

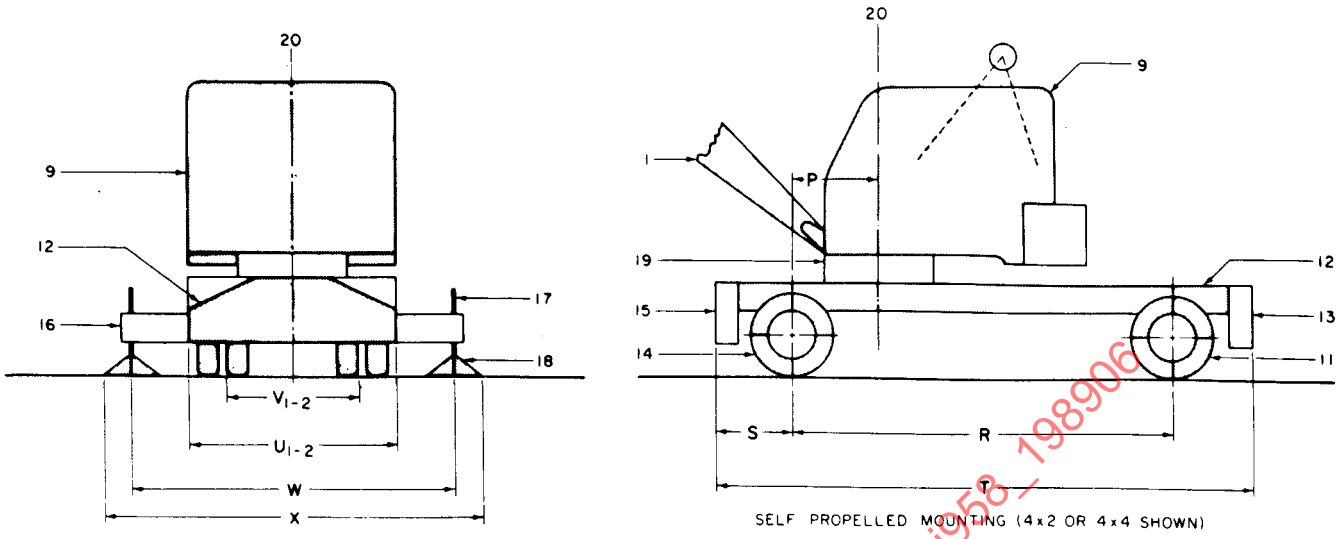

FIGURE 2—RUBBER TIRE CARRIER MOUNTINGS WITH REVOLVING SUPERSTRUCTURE

P Distance from center of rear axle or bogie to axis of rotation
Q Distance between centers of axles of tandem axle bogie
R Wheelbase (wheelbase for tandem front axle is measured to tandem center pivot point)
S Distance from center of rear axle or bogie to rear end of frame
T Overall length of carrier
U_1 Maximum overall width with retracted outriggers (floats removed)
U_2 Max. overall width with retracted outriggers (floats attached)
V_1 Track or tread width, rear axle
V_2 Track or tread width, front axle
W Effective length of extended outriggers
X Overall width over floats with outriggers extended
Y Distance from back of carrier cab to center of rear axle or bogie (known as CA distace in trucking industry)

3.2 Definitions—For revolving superstructure defintions, see Figure 3 (2-4).

1. Front end attachment
9. Revolving superstructure
10. Carrier cab
11. Front axle
12. Carrier frame
13. Front outrigger box
14. Rear axle or rear tandem bogie
15. Rear outrigger box
16. Outrigger beam
17. Outrigger jack
18. Outrigger float
19. Swing circle or roller path
20. Axis of rotation

NOTE—For ground clearance dimensions, see SAE J1234.

4. Crawler Mounting with Revolving Superstructure—See Figure 3.

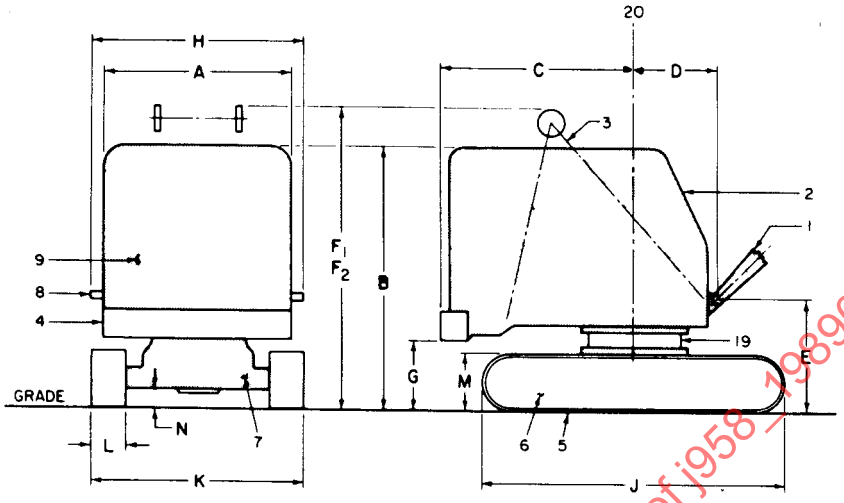

FIGURE 3—CRAWLER MOUNTING WITH REVOLVING SUPERSTRUCTURE

4.1 Dimensions

A Width of Cab
B Maximum height of cab above grade
C Swing clearance (radius of rear end from axis of rotation)
D Distance of boom foot pin to axis of rotation
E Height of boom foot pin above grade
F_1 Gantry height above grade when in lowered position
F_2 Gantry height above grade when in raised operating position
G Distance under counterweight to grade
H Overall width when running boards are used
J Overall length of crawler
K Overall width of crawler
L Width of crawler tread shoes
M Height of crawler tread belt at center of end tumblers
N Minimum clearance under crawler base to grade

4.2 Definitions

1. Front end attachment
2. Cab
3. Gantry or A-frame
4. Counterweight
5. Crawler tread belt
6. Crawler side frame
7. Carbody or crawler base
8. Running board
9. Revolving superstructure
19. Swing cicle or roller path
20. Axis of rotation

NOTE—For ground clearance dimensions, see SAE J1234.

5. ***Shovel Attachment—***See Figure 4.

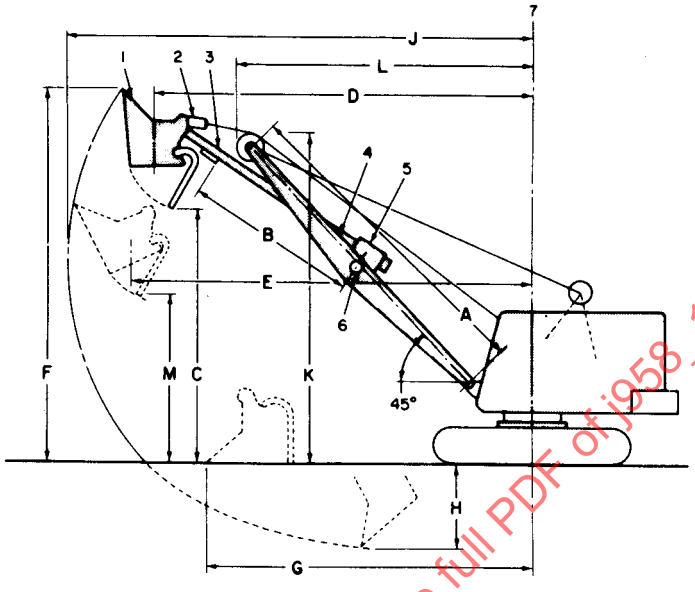

FIGURE 4—SHOVEL ATTACHMENT

5.1 Dimensions

A Boom length from boom foot pin to boom head sheave pin
B Effective travel length of dipper stick
C Maximum dumping height
D Dumping radius (center of flow from dipper) at maximum height
E Maximum dumping radius (center of flow from dipper)
F Maximum cutting height
G Maximum clean-up radius at floor level
H Maximum digging depth below floor level
J Maximum cutting radius
K Boom head clearance height
L Boom head clearance radius
M Dumping height at maximum dumping radius

5.2 Definitions

1. Dipper
2. Dipper bar
3. Dipper stick
4. Boom
5. Shipper shaft saddle
6. Shipper shaft
7. Axis of rotation

6. ***Hoe Attachment—***See Figure 5.

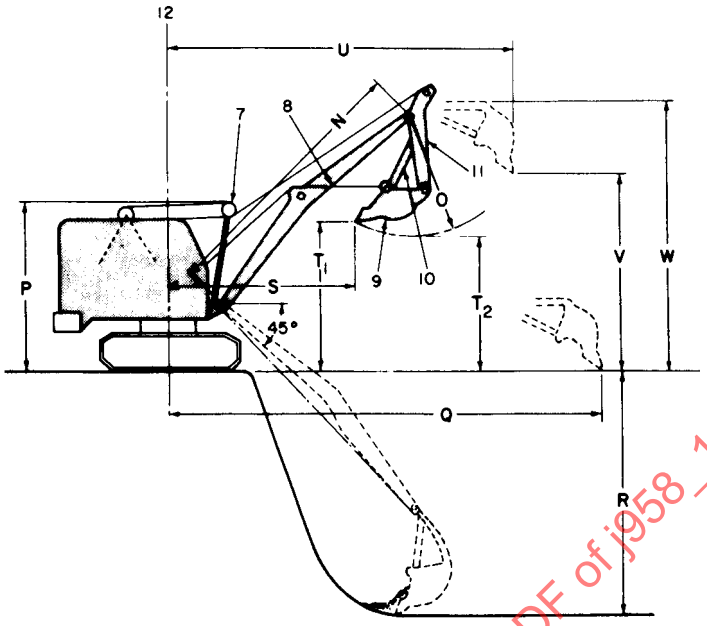

FIGURE 5—HOE ATTACHMENT

6.1 Dimensions

N Boom length from boom foot pin to dipper arm hinge pin
O Sweep radius from dipper arm hinge pin to dipper tooth point
P Height of hoe mast in working position
Q Maximum reach at grade level
R Digging depth rating (45 deg boom angle for rating purposes)
S Radius of dipper teeth at beginning of dump
T_1 Clearance of dipper from ground at beginning of dump
T_2 Clearance of dipper from ground at the low point of the dipper dump clearance
U Clearance radius at end of dump
V Clearance from grade at end of dump
W Overall height at end of dump

6.2 Defintions

7. Hoe mast
8. Boom
9. Dipper
10. Dipper brace bar
11. Dipper arm
12. Axis of rotation

7. Common Crane Boom Equipment—See Figure 6.

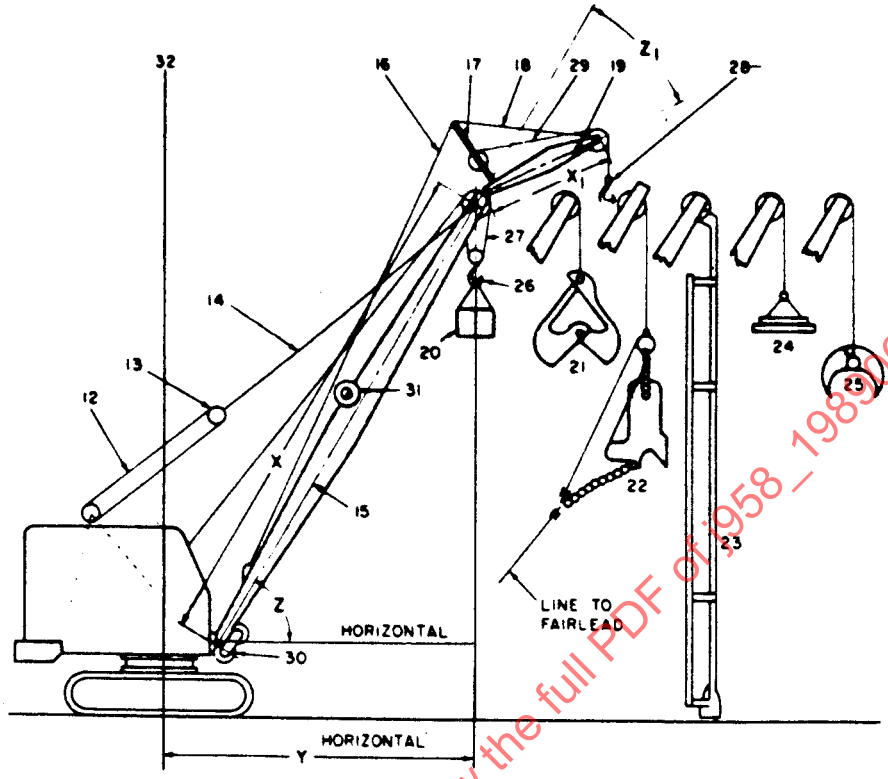

FIGURE 6—COMMON CRANE BOOM EQUIPMENT

7.1 Dimensions

X Boom length from boom foot pin to boom head sheave pin
X_1 Jib length from jib foot pin to jib head sheave pin
Y Radius of load (also applied to jib hook load)
Z Boom angle
Z_1 Offset angle of jib (also can be given as an offset dimension)

7.2 Definitions

12. Derricking or live boom hoist rope
13. Floating harness or bridle
14. Pendants, guys or boom backstays
15. Crane boom
16. Jib backstay lines
17. Jib mast
18. Jib front stay lines
19. Jib
20. Concrete bucket
21. Clamshell bucket
22. Dragline bucket
23. Pile drive leads
24. Magnet
25. Grapple
26. Main lift hook block