

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

D101.113

TM 5-1095

TO 19-40AAD-9

SCRAPER, ROAD
TOWED TYPE
CABLE OPERATED
8 CU. YD.

SOUTHWEST MODEL S-90

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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
SEPTEMBER 1952

EQUIPMENT OWNERS AND OPERATORS

This instruction manual is furnished for the purpose of giving you as much information about your machine as possible. You are urged to read and study it. If ordinary care is exercised you will be assured of satisfactory service.

The first part of this manual pertains to the installation and operation of the machine. The second part gives you information which you will require when ordering repair parts. Always use this second part of the manual when ordering repair parts.

The terms "right" and "left" in this manual mean right and left as used by the operator sitting in the driver's seat and looking toward the radiator.

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

WASHINGTON 25, D. C., 15 September 1952

TM 5-1095/TO 19-40AAD-9 is published for the information and guidance of all concerned.

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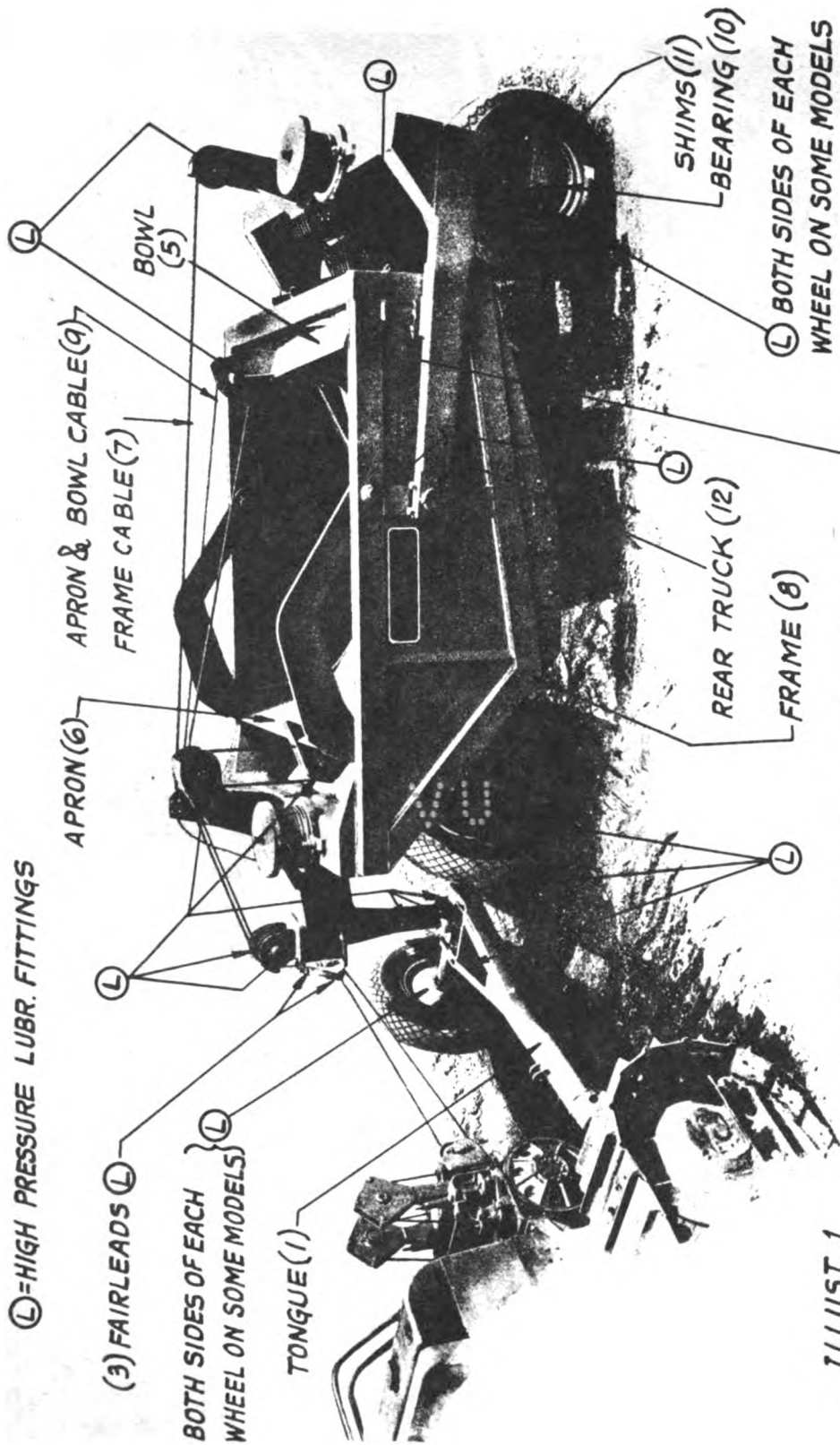
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For explanation of distribution formula, see SR 310-90-1.

S-SCRAPERS -1



ILLUST. 1

S-SCRAPERS - 2



(L) HIGH PRESSURE LUBR. FITTINGS

FAIRLEADS (4)

APRON & BOWL CABLE (9)

FRAME CABLE (7)

FAIRLEADS (3)

TONGUE (1)

(L) BOTH SIDES OF MACHINE

ILLUST. 2

HITCH CLEVIS (2)

(L) BOTH SIDES OF EACH WHEEL ON SOME MODELS

Installation and Operating
Instructions for Southwest
Cable Operated S-Type 4-WHEEL SCRAPERS

CONNECTING SCRAPER TO TRACTOR

Remove draw bar pin from tractor draw bar. Place scraper hitch clevis (2) in opening of tractor draw bar and hold in place with tractor draw bar pin. Insert pin from top.

Be sure to lock draw bar pin by inserting cotter pin or similar device in hole in lower end of draw bar pin. Accidental dropping of draw bar pin may result in scraper tongue seriously damaging winch, tractor or scraper.

REEVING OF CABLES

Pass cables from fairleads (3) at front of scraper through fairleads (4) on winch and anchor ends of cables on winch drums by wedging them between cable anchors and drum barrels. Lock cable anchors by tightening cap screws holding cable anchors. With scraper wheels and cutting edge resting on level ground, and with bowl (5) and apron (6) closed, you should have about six to eight wraps of cable on each of the two drums.

Refer to illustration 3 when you have to reeve the cables on scraper.

LUBRICATION

High pressure lubrication fittings are used on this equipment. For their location refer to illustration in this booklet. The owner and operator should see to it that the equipment is properly lubricated at regular intervals. We would suggest that this be done when tractor is lubricated or about every ten hours of operation. Use pressure gun grease except on wheel fittings.

Wheel bearings are packed with grease at the factory; however, they should be checked approximately every 500 hours. We recommend the following types of grease or equal, for packing the wheel bearings.

GRADE AND TYPE GREASE

No. 70 - "Lubriplate"
Aerro-"Lubriplate"
No. 2 -"Marfak"
No. 2 -Regal "Starfak"
"Retinix A" Multipurpose

AIR TEMPERATURES

Above 32° F
Below 32° F
Above 32° F
Below 32° F
Above or below 32° F

See to it that all bolts, nuts, keeper pins and cotter pins are in place and tight.

OPERATION OF SCRAPER

Now that the scraper has been attached to the tractor, and the cables have been properly reeved and anchored to the drums of the winch, and the entire equipment has been properly lubricated, the task of moving material may be started.

The operation of the scraper is controlled by two cables:

- a. The frame cable(7) controls the raising and lowering of the bowl cutting edge and frame(8) and thereby the depth of cut during digging, also the ground clearance during traveling, and also the depth of spread material.
- b. The apron and bowl cable(9) controls the opening and closing of the apron(6), and the raising and lowering of the bowl(5) for dumping.

For successful operation, follow the instructions below:

- a. Do not raise scraper frame(8) to its maximum height while traveling. Keeping the frame somewhat below the maximum height will permit it to move up and down to compensate for irregularities in ground, and will consequently avoid excessive strain and possible breakage of hoist cable.
- b. Be sure to allow some slack in the apron and bowl cable(9) while traveling with loaded scraper to avoid spilling material when passing over uneven ground. After ejection of material, lower bowl(5) and apron(6) immediately. This will avoid excessive strain or breakage of cable when traveling over rough ground.

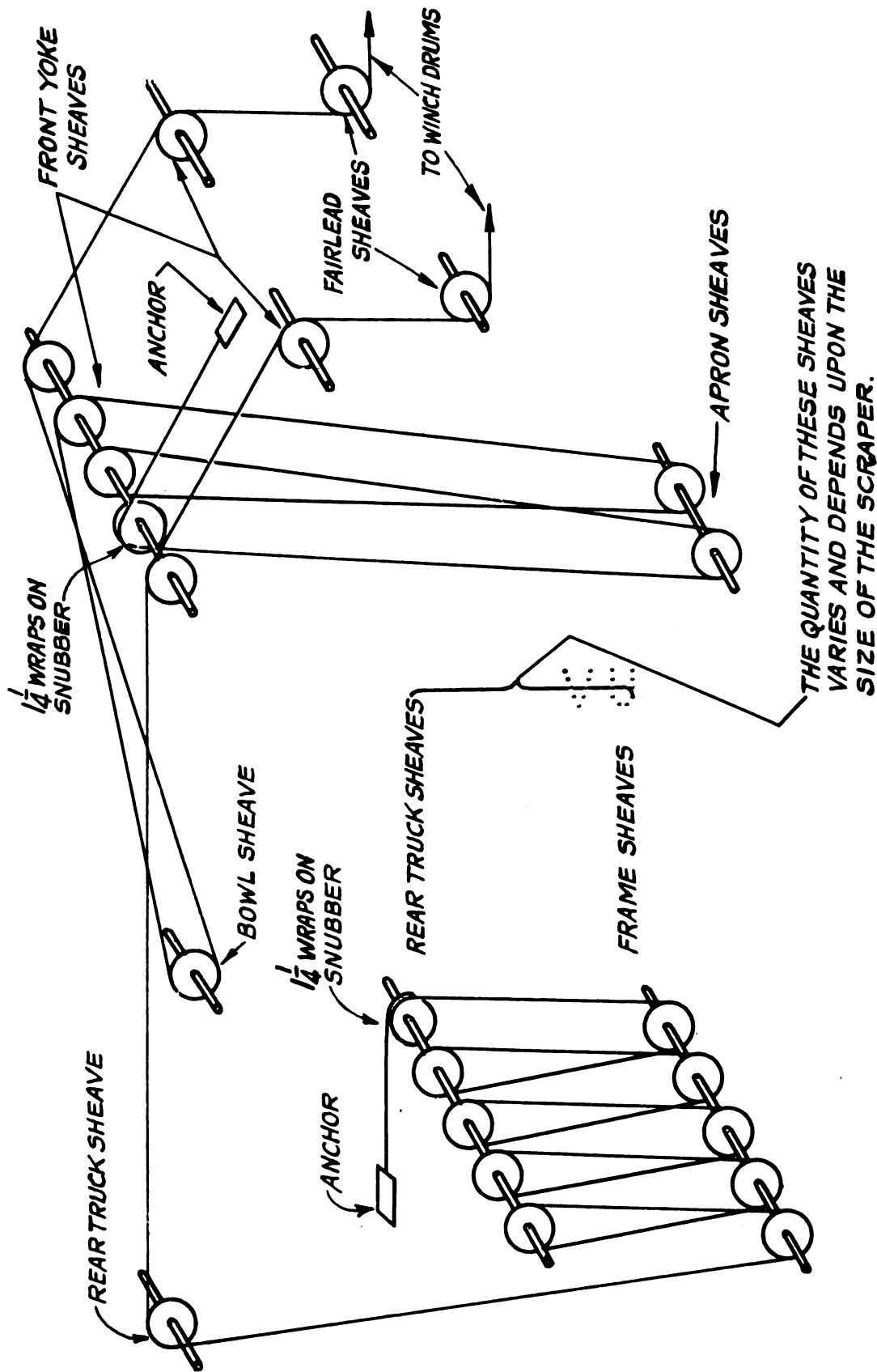
TIRES

Recommended tire pressure 60 pounds per square inch. Never inflate tires before locking ring is in place.

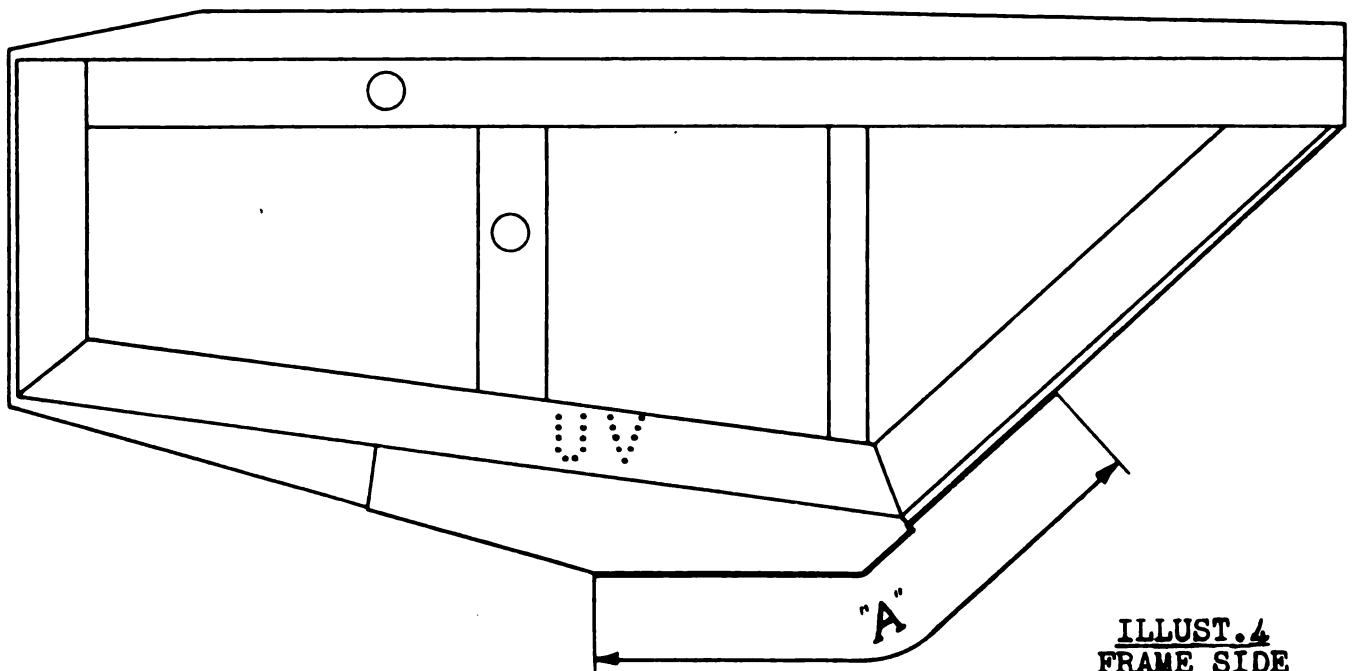
IF SCRAPER DOES NOT CUT LEVEL

If it is found that scraper digs deeper on one side than on the other, it may be that pressure in rear tires is not equal. However, if the tire pressure is equal, the rear axles will have to be adjusted in order to obtain a level cut.

Each of the two rear axles is mounted on two bearings(10), and each of the bearings has a number of shims(11). Put scraper on level floor and determine how much higher one end of bowl cutting edge is than the other. Remove from each of the two bearings holding axle on "high" side of scraper an amount of shims which equals half the mis-alignment of the cutting edge. This amount of shims should be added to shims on "low" side of scraper. For example, assume that right side of the cutting edge is 1" higher than left side. Remove shims amounting to 1/2" in thickness from each of the two bearings on the right axle and add them to the two bearings on the left axle.



ILLUST. 3
 REEVING DIAGRAM FOR SOUTHWEST S-TYPE SCRAPERS

HARD FACING OF FRAME EDGES

ILLUST. 4
FRAME SIDE

As the scraper digs and moves through the dirt, plate edges in above region "A" (Illust. 4) and welds along these edges are exposed to inevitable abrasion. In order to prevent wearing away of plate edges and welds in this region, these have been covered at the factory with a protective coating of self-hardening welding material.

Eventually even this protective coating will wear away and it must therefore be inspected periodically. It is important that the owner keep this protective coating on the plate edges and on welds along these edges intact at all times. If wear has occurred the coating should be restored.

PARTS LIST

INSTRUCTIONS FOR ORDERING TRACTOR EQUIPMENT PARTS

The drawings in this catalog are of GENERAL APPLICATION TO MACHINES of this model and MAY NOT SHOW YOUR EQUIPMENT ACCURATELY IN ALL DETAILS. We will furnish parts to fit the machine of which you give the serial number even if some of the illustrations do not show them quite as they actually appear on the equipment.

The terms "RIGHT" and "LEFT" as used in this parts book mean right and left as viewed by the operator looking forward from the drivers seat towards the radiator.

Each item on the Parts List is given a number corresponding to that shown on the Drawing for easy identification.

When ordering parts WE MUST HAVE the following information:

1. THE SERIAL NUMBER found on the name plate attached to your equipment (NOT THE TRACTOR NUMBER).
2. The name of the part wanted.
3. The quantity wanted.
4. The destination and method of shipment. State whether shipment is to be made by freight, express or parcel post. Mention any special routine or invoicing instructions.

SOUTHWEST WELDING & MANUFACTURING CO.

BE SURE TO GIVE SERIAL NUMBER

P A R T S L I S T
SOUTHWEST MODEL S-90 FOUR-WHEEL SCRAPER

DRWG. NO. E-13011

ITEM NO.	PART NO.	TOTAL USED	DESCRIPTION
1	1-D11967	1	Main Frame
2	1-D11987	1	Bowl
3	1-D11986	1	Apron
4	1-D11984	1	Rear Truck
5	1-C11989	1	Tongue
6	1-226244	1	Front Axle
7	1-C12019	2	Front Wheel
7A	Goodyear	2	14.00 x 20 - 16 Ply All Weather Tire
8	7-C12019	2	Hub - Front Wheel
9	47620-47681	4	Front Wheel Bearings
10	1-286868	2	Bearing Closure - Front Wheel
11	1-A12053	2	Gasket - Hub Cap
12		8	Cap Screw 1/2-NC x 1 1/2" W/LW
13	1-A12054	2	Hub Cap - Front Wheel
14	1-A12076	4	Cap Screw 5/8-NF x 1 1/2"-Drilled Head
15	1-A12052	2	Lock Plate
16	618D	8	Side Ring - Goodyear
17	1125B	4	Rim - 11.25 x 20 - Goodyear
18	1125N	4	Lock Ring - Goodyear
19	1-C12036	2	Rear Wheel
19A	Goodyear	2	16.00 x 20-16 Ply All Weather Tire
20	1-B12065	2	Rear Axle
21	2-C12036	2	Hub - Rear Wheel
22	653-665	4	Rear Wheel Bearings
23	1-285683	2	Bearing Closure - Inner
24	1-286506	2	Bearing Closure - Outer
25	1-286508	2	Lock Plate - Rear Axle
26	1-286507	2	Lock Nut - Rear Axle
27	1-A12062	2	Key - Rear Axle
28	1823	4	Alemite 1/2" Giant Button Head - Front and Rear Wheels
29	1-B11994	1	Snubber
30	1 & 2-B11985	1 ea.	Fairlead Frame R.H. & L.H.
31	1-D12974	1	Push Bumper
32	15-D12974	1	Swivel Pusher Plate
33	18-D12974	1	Swivel Pin W/Retaining Bolt
34	11-D12974	1	Bushing - Swivel Pin
35		12	Machine Bolt 1/2" NC x 2 1/2" W/Hex Nut & LW
36	1-C12011	1	Tackle Block
37	1-B12028	1	Pin - Tackle Block
38		1	Blank Bolt 5/8 x 5
39	1-A11983	2	Reel Clamps
40	1-A11996	1	Rubber Block
41	1-A11997	2	Cover Plate - Hinge Bar
42		8	Cap Screw 1/2" NC x 1" W/ LW
43	1-A12013	2	Cable Clamp
44		8	Mach. Bolt 5/8-NC x 2 1/2" W/Hex Nut and Jam Nut
45	1-A12033	4	Axle Bearing Block
46	1-A12034	16	Axle Bearing Block Shim
47		8	Mach. Bolt 1" NC x 8 1/2" W/Hex Nut and Jam Nut
48	1-A12035	4	Dowel Pin - Rear Axle
49	1-B12037	1	King Pin

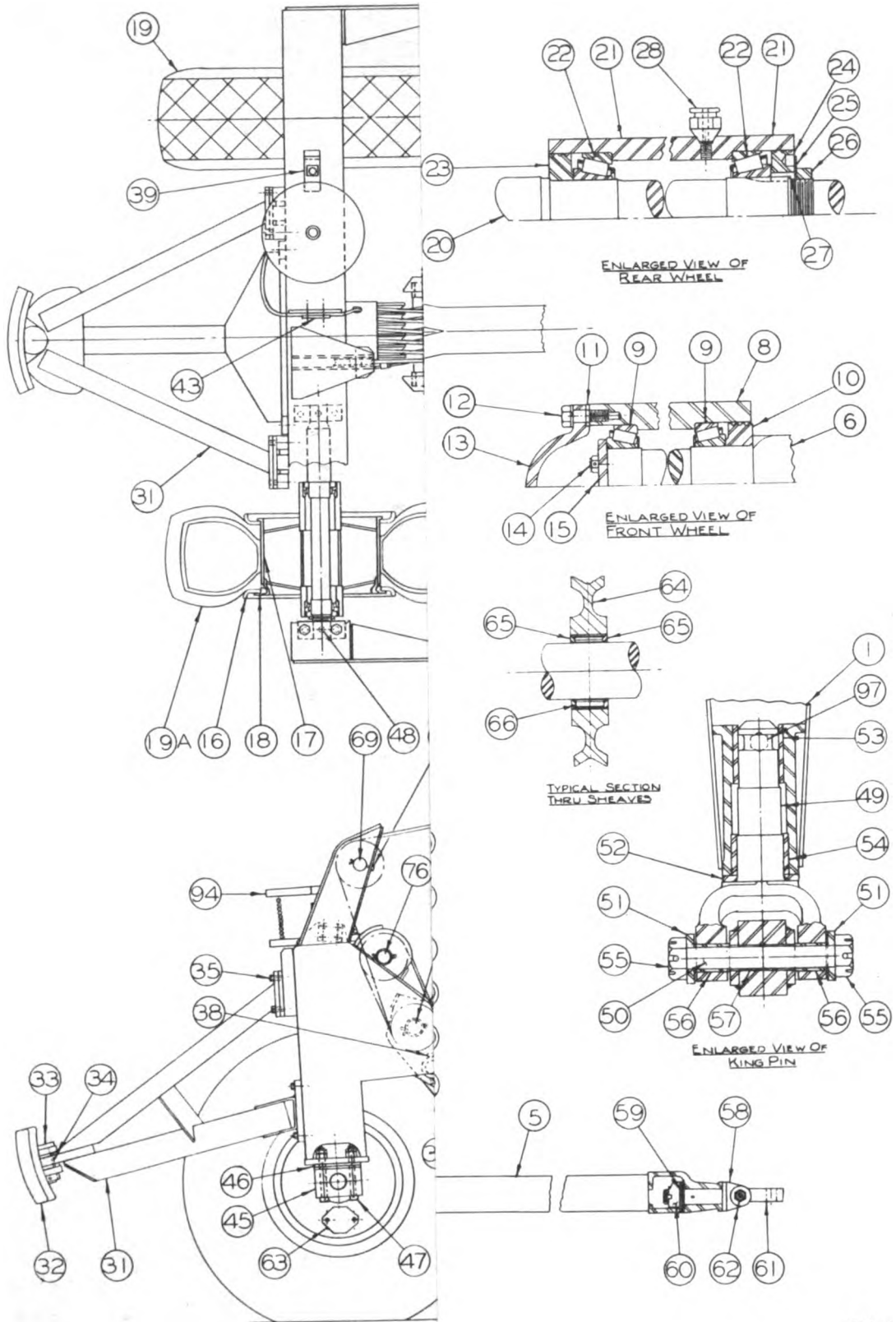
*When Ordering Parts Always Give Southwest Model and Serial Number,
Part Number and Item Number of Part.*

P A R T S L I S T
SOUTHWEST MODEL S-90 FOUR-WHEEL SCRAPER

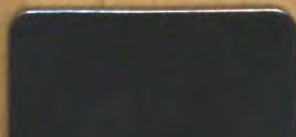
DRWG. NO. E-13011

ITEM NO.	PART NO.	TOTAL USED	DESCRIPTION
50	1-A12039	1	Axle Bolt - King Pin
51	1-A12040	2	Axle Bolt Washer
52	1-A12041	1	Washer - King Pin
53	1-A11992	1	Upper Yoke Bushing
54	1-A11993	1	Lower Yoke Bushing
55		2	Slotted Hex Nut 1 1/4 NC - Axle Bolt
56	1-A12073	2	Bushing - King Pin
57	1-A12038	1	Bushing - Axle Bolt
58	1-B12044	1	Hitch Shaft w/Bushing
59	1-A12990	1	Hitch Washer
60	1-A12046	1	Hitch Nut w/Bolt
61	1-A12048	1	Hitch Clevis
62	1-A12047	1	Hitch Clevis Bolt w/Nut
63	1-A12057	4	Hand Hole Cover - Wheel
64	1-A12016	21	Sheave
65	1-A12017	42	Sheave Bearing Washer
66	RA-99210	21	Sheave Bearing
67	1-A12021	2	Pin - Deflecting Sheave
68	1-A12022	1	Pin - Apron Sheave
69	1-A12023	1	Pin - Rear Truck Upper Sheave
70	1-A12153	2	Pin - Fairlead Sheave
71	1-A12001	2	Bushing - Lower Fairlead
72	1-A12000	2	Bushing - Upper Fairlead
73	1-A13000	1	Fairlead Bracket
74	1-A12998	4	Fairlead Shims
75		4	Cap Screw 1"-NC x 2 1/4 w/LW
76	1-B12025	1	Pin - Rear Truck Sheave
77	1-B12026	1	Pin - Frame Apron Sheave
78	1-A12029	1	Pin - Bowl Sheave
79	1-B12027	1	Pin - Tackle Block Sheave
80	1-A12004	2	Apron Hinge Pin
81		2	Blank Bolt 5/8 x 8
82	1-A12043	2	Tongue Hinge Pin
83	1-A12074	2	Bushing - Tongue Hinge Pin
84	1-B12003	1	Cutting Edge
85	2-B12003	2	End Bit
86		16	Plow Bolt 3/4 x 3 HD w/ Hex Nut and LW
87		1	Cap Screw 5/8-NC x 2 1/4 w/Hex Nut and LW
88	5-B11972	1	Clamp - Bowl Bumper
89		4	Mach. Bolt 1"-NC x 9/4 w/Hex Nut and Jam Nut
90	2-A12032	2	Trunnion Cap - Rear Truck
91	1-A12075	2	Bushing - Rear Truck Side Arm
92	1-A11998	2	Collar - Rear Truck Pin
93		2	Blank Bolt - 5/8 x 7
94		2	Wire Rope 1/2" x 200'0" 6 x 19 Preformed
95		1	Blank Bolt 5/8 x 3 1/4
96		11	Cotter Pin 1/2 x 4 1/4 (Sheave Pins)
97	1-A11999	2	Dowel Bolt - Lubrication
98		2	Blank Bolt 5/8 x 4 1/4
99	1-A11980	2	Rear Truck Hinge Pin
	1612	2	Alemite 1/8" x 6 7/8 (Tongue Pin)
	1610	45	Alemite 1/8" (Sheave Pin and etc.)

*When Ordering Parts Always Give Southwest Model and Serial Number,
Part Number and Item Number of Part.*



GHS 2:20:31
E-13011



TM 5-1095 / TO 19-40AAD-9. SCRAPER, ROAD, TOWED TYPE, CABLE OPERATED, 8 CU. YD., SOUTHWEST MODEL S-90-1952