List of Figures

	Page
Figure 1-1.	Cordage of rope construction l-2
Figure 1-2.	Uncoiling and coiling rope1-5
Figure 1-3.	Elements of wire-rope construction1-6
Figure 1-4.	Arrangement of strands in wire rope1-8
Figure 1-5.	Wire-rope lays
Figure 1-6.	Measuring wire rope1-9
Figure 1-7.	Kinking in wire rope1-12
Figure 1-8.	Unreeling wire rope1-13
Figure 1-9.	Uncoiling wire rope1-13
Figure 1-10.	Seizing wire rope1-14
Figure 1-11.	Wire-rope cutter
Figure 1-12.	Avoiding reverse bends in wire rope1-17
Figure 1-13.	Spooling wire rope from reel to drum1-18
Figure 1-14.	Determining starting flange of wire rope
Figure 1-15.	Winding wire-rope layers on a drum1-20
Figure 2-1.	Elements of knots, bends, and hitches2-1
Figure 2-2.	Whipping the end of a rope2-3
Figure 2-3.	Overhand knot
Figure 2-4.	Figure-eight knot
Figure 2-5.	Wall knot
Figure 2-6.	Crown on a wall knot
Figure 2-7.	Square knot2-7
Figure 2-8.	Single sheet bend2-7
Figure 2-9.	Double sheet bend2-8
Figure 2-10.	Carrick bend
Figure 2-11.	Bowline
Figure 2-12.	Double bowline

	Page
Figure 2-13. Running bowline	2-10
Figure 2-14. Bowline on a bight	2-11
Figure 2-15. Spanish bowline	2-12
Figure 2-16. French bowline	2-12
Figure 2-17. Speir knot	2-13
Figure 2-18. Cat's-paw	2-13
Figure 2-19. Figure eight with an extra turn.	2-14
Figure 2-20. Butterfly knot	2-14
Figure 2-21. Baker bowline	2-15
Figure 2-22. Half hitches	2-17
Figure 2-23. Round turn and two half hitches	2-18
Figure 2-24. Timber hitch	2-18
Figure 2-25. Timber hitch and half hitch	2-18
Figure 2-26. Clove hitch.	2-19
Figure 2-27. Rolling hitch	2-20
Figure 2-28. Telegraph hitch	2-20
Figure 2-29. Mooring hitch	2-21
Figure 2-30. Scaffold hitch	2-21
Figure 2-31. Blackwall hitch	2-22
Figure 2-32. Harness hitch	2-22
Figure 2-33. Girth hitch.	2-23
Figure 2-34. Sheepshank	2-23
Figure 2-35. Fisherman's bend	2-24
Figure 2-36. Square lashing	2-25
Figure 2-37. Shears lashing	2-25
Figure 2-38. Block lashing	2-26
Figure 2-39. Renewing rope strands	2-27
Figure 2-40. Short splice for fiber rope	2-27
Figure 2-41. Eye or side splice for fiber rope	2-28
Figure 2-42. Long splice for fiber rope	2-29
Figure 2-43. Crown or back splice for fiber rope	2-30
Figure 2-44. Tools for wire splicing	2-32
Figure 2-45. Tucking wire-rope strands	2-32
Figure 2-46. Eye splice with thimble for wire rope	2-33
Figure 2-47. Hasty eye splice for wire rope	2-33

I	Page
Figure 2-48. Long splice for wire rope 2^{-1}	-34
Figure 2-49. Attachments used with eye splice	-35
Figure 2-50. Wire-rope clips	-36
Figure 2-51. Wire-rope clamps	-37
Figure 2-52. Wedge socket	-38
Figure 2-53. Basket-socket end fittings	-38
Figure 2-54. Attaching basket sockets by pouring2	-39
Figure 2-55. Attaching basket sockets by the dry method	-40
Figure 2-56. Iron-pipe stanchions	-41
Figure 2-57. Pipe rungs	-42
Figure 2-58. Wire-rope rungs	-43
Figure 2-59. Fiber-rope rungs	-44
Figure 2-60. Wood rungs	-45
Figure 3-1. Link thickness	3-1
Figure 3-2. Types of hooks	3-3
Figure 3-3. Hook thickness (diameter)	3-5
Figure 3-4. Mousing hooks	3-5
Figure 3-5. Endless slings	3-6
Figure 3-6. Single slings	3-7
Figure 3-7. Use of spreaders in slings	3-8
Figure 3-8. Computing tension in a sling	3-13
Figure 3-9. Sling angles	3-13
Figure 3-10. Double block and tackle system	3-15
Figure 3-11. Types of blocks	3-15
Figure 3-12. Use of leading block	3-16
Figure 3-13. Reeving single and double blocks	3-17
Figure 3-14. Reeving triple blocks	3-17
Figure 3-15. Antitwisting rod or pipe	3-18
Figure 3-16. Simple tackle systems	3-19
Figure 3-17. Determining ratio of a simple tackle	3-19
Figure 3-18. Compound tackle systems	3-20
Figure 3-19. Determining ratio of a compound tackle system	3-21
Figure 3-20. Chain hoists	3-23
Figure 3-21. Ratched-handle chain hoist	3-23
Figure 3-22. Using a vehicular winch for hoisting	3-24

		Page
Figure 3-23.	. Fleet angle	3-25
Figure 3-24.	Spanish windlass	3-26
Figure 4-1.	Natural anchorage (tree)	. 4-1
Figure 4-2.	Natural anchorage (trees and transom)	. 4-2
Figure 4-3.	Natural anchorage (rock)	. 4-2
Figure 4-4.	Rock anchor	. 4-2
Figure 4-5.	Picket holdfasts (loamy soil).	4-3
Figure 4-6.	Preparing a picket holdfast	4-4
Figure 4-7.	Boarded picket holdfast	4-5
Figure 4-8.	Standard steel-picket holdfast	4-6
Figure 4-9.	Lashed steel-picket holdfast.	4-6
Figure 4-10.	Rock holdfast	4-7
Figure 4-11.	Combination log and picket holdfast	4-7
Figure 4-12.	Combination steel-picket holdfast	4-8
Figure 4-13.	Log deadman	4-8
Figure 4-14.	Designing a deadman	4-11
Figure 4-15.	Using a nomograph	4-12
Figure 4-16.	Designing a flat bearing plate for a regular deadman	4-14
Figure 4-17.	Designing a formed bearing plate	4-15
Figure 4-18.	Typical guy-line installations	4-16
Figure 4-19.	Gin pole and shears4	1-18
Figure 5-1.	Lashing for a gin pole	5-3
Figure 5-2.	Erecting a gin pole	5-3
Figure 5-3.	Hoisting with a gin pole	5-5
Figure 5-4.	Lashing for a tripod	5-6
Figure 5-5.	Assembled tripod	5-7
Figure 5-6.	Lashing for shears	5-9
Figure 5-7.	Erecting shears	5-10
Figure 5-8.	Hoisting with shears	-11
Figure 5-9.	Rigging a boom on a gin pole 5	-12
Figure 5-10.	Four-ton stiff-leg derrick 5	-14
Figure 5-11.	Light hoisting equipment5	-15
Figure 5-12.	Timber cribbing	-17
Figure 5-13.	Using skids and rollers	-17
Figure 5-14.	Metal conveyors	-18

Page

Figure 5-15.	Jacking loads by stages
Figure 5-16.	Mechanical and hydraulic jacks
Figure 6-1.	Scaffold planks in place
Figure 6-2.	Single plank swinging scaffold6-2
Figure 6-3.	Swinging platform scaffold6-3
Figure 6-4.	Needle-beam scaffold6-4
Figure 6-5.	Independent scaffolding
Figure 6-6.	Boatswain's chair
Figure 6-7.	Boatswain's chair with seat
Figure 6-8.	Boatswain's chair with tackle
Figure A-1.	Simple block and tackle rigging for manila rope (FS 3) $\ldots \ldots A-1$
Figure A-2.	Safe loads on screw-pin shackles
Figure A-3.	Stresses in guys and spars of gin poles
Figure A-4.	Stresses in guys and mast of guy derrickA-6