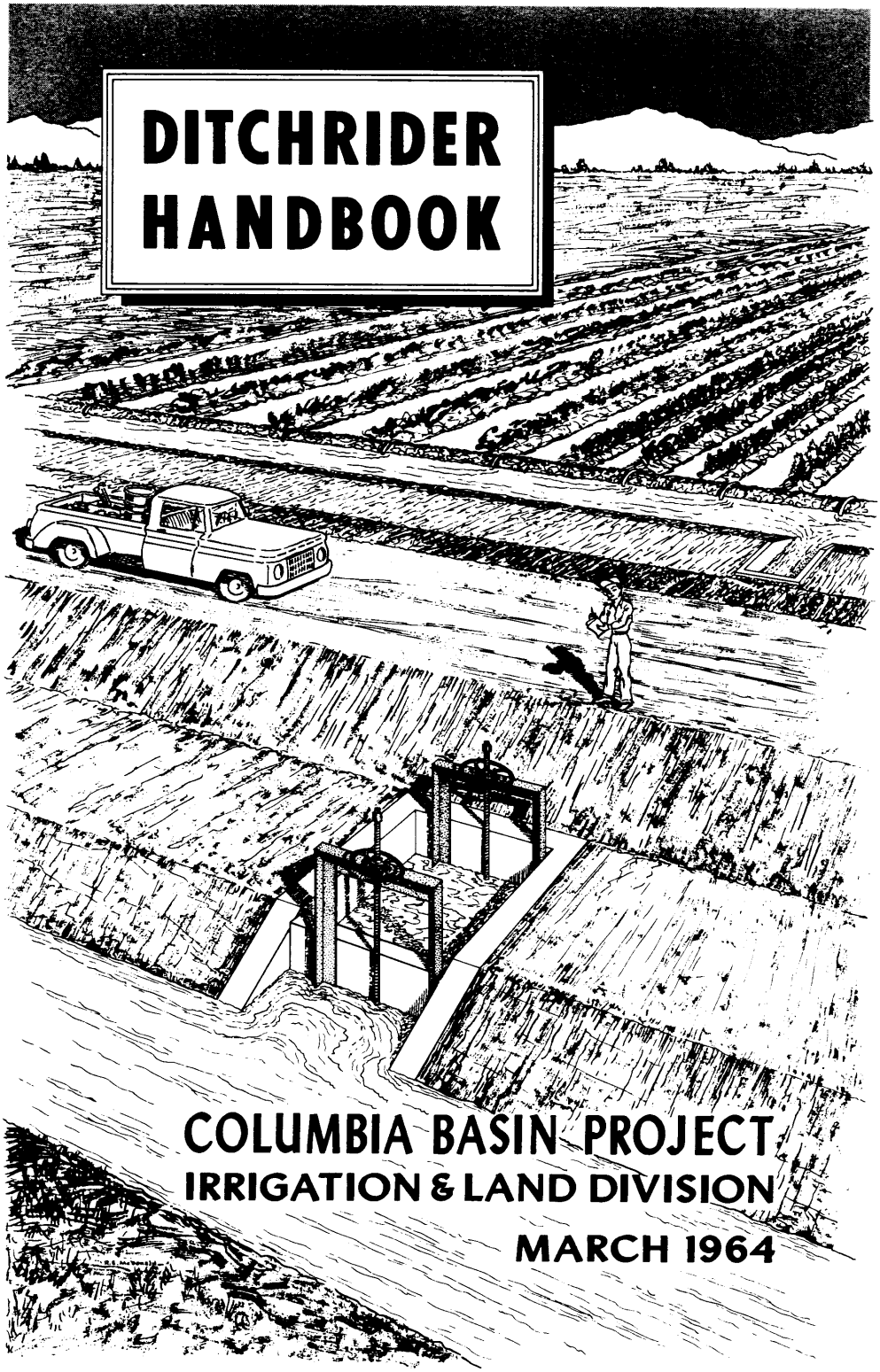

DITCHRIDER
HANDBOOK
COLUMBIA BASIN PROJECT
IRRIGATION & LAND DIVISION
MARCH 1964

FOREWORD

You, as a ditchrider, are the individual who has the most frequent contact with the project water user. The promotion of good relations between the project and water user is, therefore, largely dependent upon your competence, tact and general good judgment.

Always remember that the entire cost of operation and maintenance of irrigation facilities is paid for by the water users as a collective group. Therefore, we must be careful not to provide a service or facility which will benefit one or a few individuals and not be equitable to all. You may receive requests for service to which you will have to say; "No". A person who can say "no" with firm conviction when it is necessary and yet not offend the customer is a definite asset to the organization for which he works.

Delivery of water to the customer in accordance with his requests, at reasonable cost and consistent with established policy, regulations and procedures is the end result of all of our efforts. A job well done on the tasks assigned to you will be a major factor in the success of our entire operation.

Chief, Irrigation Operations Branch

Introduction

This booklet is intended as a general guide to assist you in carrying out your duties as a ditchrider. Primary technical assistance will be afforded by the Irrigation Advisor's Guide and the Handbook for Measurement. As changes are made, they will be furnished as supplements that can be inserted into the Handbook. It will be your responsibility to become familiar with these instructions and to use them as a convenient reference in carrying out your duties.

DITCHRIDER HANDBOOK CONTENTS

Introduction

I. Personal Conduct:

Hours of Work
House and Grounds

II. Ditchrider Beat Operation:

Establishing a Regular Beat
Regulation of Water
Eligibility to Receive Water
Water Delivery
Water Request Cards
Apportioning Deliveries
Locking Gates
Filling Pipelines
Operating Pumps
Pumps with Automatic Re-starts
Checking Pumps
Patrol of Drains
Night Patrol
Relief Rider

III. Inspection and Maintenance:

Weeds
Rodents
Encroachments
Farm Structures Affecting Delivery
Claims
Roads
Numbers of Turnouts

IV. Reports and Records:

Daily Reports
Water Records
General
Lateral Diversion Records
Wasteway Records
Water Delivery Record
Example No. 1, Water Delivery Record
Example No. 2 (CHO), Water Delivery Record
Example No. 3 (Weir), Water Delivery Record
Example No. 4 (CHO), Water Delivery Record
Example No. 5 (Weir), Water Delivery Record

V. Contacts With Water Users:

Inquiries and Complaints

VI. Off-Season Work:

Crop Census
General Maintenance

VII. Use of Privately-Owned Automobile

VIII. Safety

Your Safety Responsibility

Supplements

Weed Control Guide (Revised March 1964)

Standards For Safety In Equipment Operating

I. PERSONAL CONDUCT

Hours of Work

The regular work week is Monday through Friday from 7:30 a.m. to 4:00 p.m. each day. This provides one-half hour for your lunch period and 15 minutes at end of shift, 3:45 to 4:00 p.m., for book time and reporting. A tour of duty of eight hours on Saturday or Sunday as overtime is required during the irrigation season. Also, during this period the entire operating force must be generally available at all times to perform emergency services to assure efficient operation and adequate protection of the irrigation system. If you are going to be out of the general area during your off-duty hours you must notify your watermaster where you can be reached in the event of emergency. You are responsible at all times for the safety and proper operation of channels and structures in your area. You are required to make prior arrangements with your watermaster for any absence from your beat during the irrigation season. Annual leave will normally be scheduled by your supervisor after the peak of the irrigation season and at such time as the workload will permit the absence of operating personnel. So that your beat can be adequately cared for on your day off or when you are on leave, you must report any special operating conditions or problems to your watermaster or assistant watermaster.

House and Grounds

Keep the house and grounds assigned to you attractive and in an orderly condition. Watch for fire hazards and correct them as soon as they develop. Special attention should be given to the proper care and maintenance of the hardwood floors. Water should never be used for cleaning these floors and any water accidentally coming into contact with the floor surface should

be removed at once. Your camp manager will recommend a commercial floor cleaner and wax which will keep the floors in good condition and make your job of cleaning and maintaining them much easier. You will be expected to perform minor repairs and maintenance with materials furnished by the Government. Obtain permission before making alterations or additions to the grounds, buildings, cabinets, wiring, plumbing, etc. You are responsible for protecting property from damage by fire or freezing. Refer to your lease and other regulations for details regarding your occupancy of Government quarters.

Your Relationship With The Water Users

Be careful to treat all water users alike. DO NOT accept favors which might obligate you to show preference to someone on your beat. Be extremely cautious about giving advice to the water user concerning his farming operations. The Soil Conservation Service and County Agents are available for this purpose.

II. DITCHRIDER BEAT OPERATION

Establishing A Regular Beat

Follow your beat so as to arrive at each turnout at about the same time each day. Visit each operating turnout once a day to check deliveries, to receive water orders, and to regulate and distribute water where changes have been requested. Each ditchrider will be required to furnish the watermaster office a schedule of his ride showing time at numerous stops on his ride. This is very necessary for the office to have in order to more readily locate you during the day in case of an emergency. Each rider will also furnish office with an order of ride showing the sequence of his stops. One copy of this should be carried in your water records book at all times for the use of relief rider in maintaining your schedule.

Sunday patrol of your ride which will be made by relief rider or watermaster will include checking pumps, reading principal gages and giving attention to known trouble spots. If you know of particular problem areas which should be checked on Sunday you are required to inform you watermaster of these areas.

Regulation of Water

Regulate your laterals as closely as possible so that measurements and deliveries can be made accurately and so operational waste can be kept at a minimum. This includes regulation of checks to maintain water level at control water surface with a minimum of fluctuation regardless of the channel flow. No checks will be operated above control water surface without the approval of your watermaster.

Eligibility to Receive Water

The law requires that water be paid for in advance of delivery. Deliver water only to those farm units which your watermaster or branch office has informed you are eligible. Do not permit water to be taken from one farm to another unless approval for combination of water deliveries and records has been obtained and cleared through the branch office. When a water user has used up the amount he has paid for, it is your duty to shut off his water until notified by the watermaster or branch office that he has purchased additional water. If the balance left to the credit is not enough to run the present order until the next regular visit to the turnout the water should be turned off unless the water user asks that the delivery be cut to the amount that will last until the next visit. Good public relations require that the water user be given some advance notice before shutting the water off.

Water Delivery

Measure and deliver water accurately in the amount ordered by the water user. Under normal conditions, settings will be made exact. A maximum acceptable tolerance of plus or minus 0.01 foot will be allowed during checks of ride. Deliveries will be checked and corrected, if necessary, each day. Corrections must be shown on water record sheet. If correction is unusual, note reason on sheet. Charge him only for the water actually delivered, making allowance where necessary for loss between the measuring device and the delivery point at the farm unit boundary. The watermaster will assist you in determining this allowance. Never charge a water user for more water than ordered. In case of pump outages or other interruptions in service, make allowances for the period of outage in determining the actual amount of water delivered.

Water Orders

Water orders are required at least 24 hours in advance of delivery and up to 48 hours may be required under some circumstances. This time factor will vary, depending on the amount of water available in that part of the system and the length of time required to get additional water to the point of delivery. Changes in water delivery are only made Monday through Saturday. No changes will be made on Sunday except in emergencies. Record water orders in daily.

Water Request Cards

A water request card is required for each order to deliver water or to change delivery. If you receive a water order by telephone, write the information on a card and read it back to the farmer to avoid mistakes. Any water user who will not accept this procedure as an adequate

record of his orders should be requested to sign all his request cards personally. Turn in your water request cards bi-weekly with your water records. Each change on water records sheet must be accompanied by a water record card. When a farm unit is in multiple owernship you should require the owners, or operators, to select one of the group to represent them. He will be the only one you will take orders from and the card showing water used will be sent to him. Only one record for the entire amount of water being delivered to the farm unit will be kept. Dividing the water after it leaves our delivery is the responsibility of the water users and you should not enter into it. The office should be furnished with the name of the person selected as their representative.

Apportioning Deliveries

In cases where demand for water exceeds the capacity of the lateral, deliveries should be made of a percentage of the share system capacity available. Your watermaster will assist you in computing the percentage you should use.

Locking Gates

ALWAYS lock all regulating devices at the heads of laterals and at delivery structures unless your watermaster specifically gives other instructions. A practice of not locking them will cause more trouble than you can imagine.

Filling Pipelines

Fill pipelines slowly with all valves open until the air is exhausted. Do not permit sand or silt in the channel above the pipeline to be pulled into the pipe except when there is maximum flow through the pipeline. Be certain that automatic relief valves are working and functioning properly.

Operating Pumps

Where a relift pumping plant consists of more than one pump, operate the minimum number of pumps that will furnish the required discharge. For example, run one pump at full capacity rather than two pumps at half capacity. Alternate pumps when possible so that each unit accumulates equal hours per season.

Replace screens around motor openings if they have been removed for any reason.

Wipe up immediately any oil spilled in filling solenoid oilers.

If a pump is to be shut down for any length of time, open the circuit breaker and close and lock the control cabinet.

Record monthly KW demand meter and KWH meter readings on pump plant report form in duplicate promptly after the twentieth of each month. (Form CBP-286)

Pumps With Automatic Re-starts

Pulling the main switch when shutting down a pump equipped with an automatic re-start will prevent unwanted re-starts. Have the Plant Mechanic explain the operation of the automatic re-start so you will understand what it will and what it won't do.

Checking Pumps

Use the following check list in making daily check of relift pumps:

A. Note whether pumps and motor operation sounds normal.

B. Note oil levels and fill as required.

C. Grease bottom pump bearing according to instructions for each vertical pump.

D. Check for overheating of motor.

E. Check condition of pump sump and clean, if necessary. Back flush pump, if necessary, to clean any moss from impeller.

F. Check and clean trashracks.

G. Keep pumphouse and deck clean and orderly.

H. Keep a record of the beginning and end of pump operation.

I. In larger plants:

   a. Check and record all gage and meter readings.

   b. Check operation of cooling system.

   c. Check operation of special oiling system.

Report immediately to your watermaster any conditions out of the ordinary. When reporting pump outages, state the following: Pump plants and units affected, time off, time back on, reset used, reason for outage and corrective action taken. (Form CBP-797)

Patrol of Drains

Establish a periodic patrol of the drains in your area at intervals prescribed by your watermaster and report any conditions that interfere with the proper functioning of the drain or that may cause damage to side slopes or structures.

Night Patrol

You may be assigned to night patrol. In that

event, you will be provided special instructions by your watermaster and your irrigation Manager.

Relief Rider

You may be assigned to relief rider. In that event you may work Tuesday through Sunday with Monday off during the irrigation season. You will be provided with special instructions by your watermaster. When assuming a regular assigned ride you should consult with the regular ditchrider to make certain that you will be aware of any trouble spots or special conditions.

III. INSPECTION AND MAINTENANCE

The inspection and maintenance of your beat should be considered as seriously as your water delivery responsibilities. Weeds cause extra cleaning, need for riprap work, poor delivery to water users and even ditch breaks. Tumbleweeds that are allowed to sink to the bottom of a lateral and remain there, for example, start a sandbar which encourages moss growth and channel erosion in the vicinity of the weeds. Stake with red-topped stakes and report to watermaster all seepage or wet areas.

Weeds

Know the noxious weeds by sight. When you find an infestation:

a. Mark location of weeds by staking with yellow-topped laths.

b. Report location of weeds on Form CBP-85 (Daily Weed Control Record).

c. Treat as instructed by your watermaster.

Keep channels clear of weeds and debris each day. Following high winds the first consideration

should be getting water through the system and making deliveries. If you need additional help contact your watermaster. The remainder of the weeds should be removed as soon as possible. Weeds should not be allowed to accumulate on weed racks where they might restrict the flow of water and raise the water surface. The area around the structures should be kept free of weeds. Check with your watermaster on seeding or sterilizing around the structures.

Rodents

Control of muskrats, brown rats, beaver and other rodents may be assigned to you. Keep your watermaster informed of new investations and their severity; request assistance from him if the problem is a major one. At least one man in your branch has received specialized training in the use of strychnine bait for poisoning pocket gophers. Untrained personnel should not attempt to use strychnine bait. Traps for control of small gopher population will be provided upon request. Encourage rodent control by water users, but avoid creating the impression of directing their operations. You will be expected to set traps for muskrats as instructed by your watermaster.

Encroachments

Watch for any encroachments on project rights-of-way such as banks cutting, fences, farm ditches, farm buildings, bridges, planted trees, erected power lines or any other encroachment which may interfere with maintenance. Prevent these actions if possible; consult your watermaster as necessary. Advance approval for encroachments upon project rights-of-way must be obtained through a permit issued by the Chief, Irrigation Operations Branch. Your watermaster has a supply of the permit applications available upon request. Watch for and prevent the taking of water from the lateral (except

through our measuring device) or the running of wastewater back into the lateral or drain indiscriminately. If you have any questions in regard to right-of-way consult your watermaster.

Farm Structures Affecting Delivery

Where new irrigation systems are being laid out, watch to be sure that an overflow is provided for sprinkler systems or pipelines which may not be able to accommodate the full flow of delivery. Watch for, and notify your watermaster of, any structures built by the farmer which will affect measurement and regulation or interfere with maintenance of facilities. Do not deliver more water at any delivery than can be accurately measured. When delivery approaches submergence, inform the water user that he will have to correct his problem before you can deliver a larger head. You must also notify your watermaster that you have so notified the water user. If condition warrants it, the watermaster may approve increasing the delivery.

Claims

Watch for and report by memorandum to watermaster with copy to branch office the facts regarding any project situation which has resulted or might result in damage to private property. This would include circumstances such as drowned livestock, fires, seeped land or canal or lateral breaks for which claims may be placed against the Government. Do not state your opinion of the cause of damage even where it appears obvious.

Roads

Observe regularly the condition of your service roads. Remove rocks and fill holes as necessary. Discourage the use of operating roads for other than official use.

Numbers on Turnouts

Turnouts are numbered with aluminum tags during the testing period. Observe their condition and replace as necessary to keep them legible. Turnout numbers should be updated where farm unit numbers have been revised. Aluminum tags used on structures for identification should also be updated where and when units are revised.

IV. REPORTS AND RECORDS

Daily Reports

Report water orders, water deliveries, diversions, waste, return flows, farm units served and pump outages to your watermaster office each day as soon as totals are known. Avoid waiting until the last minute to make your call by phone or radio because of the numerous other ditchriders that report to each watermaster. Reports should be in by or before 4;00 p.m.

Water Records

Instructions for careful preparation and submittal of water records will be provided by your watermaster. Legible and accurate records are of prime importance as they form the base upon which the water user will be charged.

Following is a list of basic rules which are to be followed when making water records:

General

1. The rider will measure and record the measurement and discharge for all measuring devices which are running water when he arrives and when he leaves the measuring device. If there is no change only one entry is required.

2. Ditto marks will not be used on the records. An entry will be made for each day water is running.

3. All on's and off's on the diversion and daily water record sheets will be marked with the words "on" and "off".

4. No entries will be made between the off's and on's when water is not running.

5. The loss allowance on a one unit delivery lateral will be shown in a circle on the top line of the order column.

6. All discharges which have been affected by weeds, power outages, etc., will have an explanation note in the order column.

7. The water balance for units with more than one turnout will be recorded on the last sheet in the turnout numbering sequence.

8. The water balance for units in combination will be recorded on the last unit in the numbering sequence of the combination.

9. All entries for a turnout will be recorded in the ditchride records before the rider leaves that turnout.

10. A water request card is required for all turn on's, turn off's and changes. The only exception, with the prior approval of your watermaster, will be for deliveries to units which have been combined for water record purposes at the end of a lateral without a wasteway when the total order for the combination does not change.

11. Carry the daily delivery to two decimal points and enter to the nearest lower 0.05 (1.94 enter as 1.90, 1.96 enter as 1.95).

12. Never charge the farmer for more water than he orders. If he receives less than his order, charge him with what he receives.

13. Do not charge the farmer for the first day when water is turned on, but charge for the day when water is turned off.

14. Never make any deliveries until you receive written notice from your watermaster or branch office that the unit is paid and eligible.

15. Never deliver more water to a unit than the unit has paid for.

16. Do not deliver water through a unit's turnout for another unit unless a combination is approved for the units. If in doubt, consult your watermaster.

17. If a weir is installed at the end of a delivery lateral, it is to be used for loss measurement only. The water for the unit will be measured over the original device constructed at the head of the delivery lateral.

Lateral Diversion Records

1. A lateral diversion record sheet will be kept for any measuring device which leads to two or more units where there is a possibility of loss in the lateral system.

2. All on's and off's on the diversion sheet will be marked with the words "on" and "off".

3. Measuring devices with two measuring gates will be recorded on one diversion sheet. A notation will be added to the bottom of the sheet stating that there are two gates

in the measuring device. The gates on the device are to be opened an equal amount unless otherwise noted in the explanation column.

4. When a lateral has a farm unit turnout between its turnout gate and measuring device, the diversion record will only be kept for the lateral measuring device.

5. On Sunday, enter a dash in the head and gate opening columns and record assumed discharge.

Wasteway Records

1. A wasteway record will be kept for each wasteway.

2. An entry will be made for each day including Sunday. If no water is estimated for the next 24 hours, enter zero (0).

3. The flow recorded on the wasteway sheet is not the measured flow but the estimated average flow in the wasteway for the next 24-hour period.

Water Delivery Record

1. A water delivery record will be kept for each farm unit turnout.

2. The entries for weirs, CHO's and meter gates will be recorded as shown in Example No. 1.

3. The order column may be maintained one of two ways or a combination of the two as directed by your watermaster. The two methods are shown in Example No. 2. This column will also be used for loss and explanation notes.

4. Turn on and turn off will be recorded as shown in Example No. 2.

5. When recording changes or adjusting flow outside of the tolerance limits, the measurement when the rider arrives will be shown on the left side of a slash and the measurement when leaving will be shown on the right side. See Example No. 2.

6. Explanation notes may be recorded as shown in Example No. 2.

7. Loss notations for end delivery lateral may be recorded as shown in Example No. 3.

8. On Sunday a dash should be entered in the head and gate opening columns and record assumed water delivery. See Example No. 4.

9. Changes from one measuring device to another made by a farm operator on end deliveries under combination <u>when total flow is not changed</u> may be handled as shown in Example No. 5. OC stands for operator change.

Example No. 1 - WATER DELIVERY RECORD

Head	Opening	Measured Discharge	Hours Run	Daily Delivery	Balance	Order
	Weir					
.45	----	2.00	24	2.00	10.00	
	CHO					
.20	.48	3.00	24	3.00	10.00	
	Meter Gate					
5"	4½"	1.58	24	1.55	10.00	

Example No. 2 (CHO) - WATER DELIVERY RECORD

Head	Opening	Measured Discharge	Hours Run	Daily Delivery	Balance	Order
on/.20	on/.20	on/1.00	--	----	10.00	+1.0 or on/1.0
..20	.20	1.00	24	1.00	9.00	
.20	.20/.40	1.00/2.01	24	1.00	8.00	+1.0 or 1.0/2.0
.20	.40	2.01	24	2.00	6.00	
.18/.20	.40	1.90/2.01	24	1.90	4.10	weed in back gate
.20/off	140/off	2.01/off	24	2.00	2.10	-2.0 or 2.0/off

18

Example No. 3 (Weir) - WATER DELIVERY RECORD

Head	Opening	Measured Discharge	Hours Run	Daily Delivery	Balance	Order
						.50
.45	---	2.00	24	1.50	10.00	

17

Example No. 4 (CHO) - WATER DELIVERY RECORD

Day	Head	Opening	Measured Discharge	Hours Run	Daily Delivery	Balance	Order
Sat.	.20	.48	3.00	24	3.00	9.00	
Sun.	---	---	----	24	3.00	6.00	
Mon.	.20	.48	3.00	24	3.00	3.00	

20

Example No. 5 (Weir) - WATER DELIVERY RECORD

Head	Opening	Measured Discharge	Hours Run	Daily Delivery	Balance	Order
.45	---	2.00	24	2.00	12.00	
.28	---	1.00	24	1.00	11.00	OC
.28	---	1.00	24	1.00	10.00	
.37	---	1.50	24	1.50	8.50	OC

19

V. CONTACTS WITH WATER USERS

Inquiries and Complaints

Refer complaints and inquiries relative to the height of water delivery, location of turnout, wastewater inlets, seepage, bridges, crossing, etc., to your watermaster. Inquiries as to why a farm unit is not eligible to receive water should be referred to the branch office who in turn will contact the district office if necessary.

High Land

Refer inquiries in regard to irrigating high land to the irrigation district office.

VI. OFF-SEASON WORK

Crop Census

You will be furnished forms and special instructions for taking a census of crop production on each farm on your beat before the end of each irrigation season. The validity and reliability of the completed crop census will be dependent upon your ability to acquire accurate information from the water users on your beat.

General Maintenance

During the post-irrigation season, you will be assigned special duties in the general maintenance of the project; these duties will include operation of various kinds of equipment.

VII. USE OF PRIVATELY-OWNED AUTOMOBILE

Public Law 87-258 provides for defense of suits against Federal employees or their estates arising out of their operation of motor vehicles in the scope of their office or employment with the Federal Government. This law became effective March 21, 1962.

Section 46.32.060 RCW of the Washington State Motor Vehicle Laws provides:

> "Any vehicle operating upon the public highways of this state and at any time found to be defective in equipment in such a manner that it may be considered unsafe shall be an unlawful vehicle and may be prevented from further operation until such equipment defect is corrected and any peace officer is empowered to impound such vehicle until the same has been placed in a condition satisfactory to vehicle inspection."

You conscious failure to keep your car in a sound mechanical and safe condition may have serious results under Public Law 87-258.

Your employment as a ditchrider on Beat No. ____ of the _____ requires that you furnish your own vehicle for performance of your official duties. You are reimbursed for the use of your vehicle at the rate of ___* per pay period. You are required to maintain the vehicle which you furnish in a satisfactory mechanical and safe operating condition in full compliance with the requirements of the Washington Motor Vehicle Laws and, in particular, that portion thereof set forth above.

*The mileage allowance during the irrigation season for Ride No. ____ can be found in the supplement sheets to this book.

In order to insure that vehicles will be maintained in an acceptable mechanical and safe operating condition, inspections will be initiated by the Government as they deem necessary. Such items as, but not necessarily restricted to, the following will be checked: Stop lights, turn indicators, seat belts, horn and rear-view mirror in addition to general mechanical condition.

Your failure to maintain your vehicle in proper operating condition may have repercussions in case of an accident and can be cause for disciplinary action. Failure to conform to this agreement may result in your vehicle being unacceptable for leasing purposes.

VIII. SAFETY

Your Safety Responsibility

To protect yourself and your fellow workers, give serious thought to prevention of accidents in your daily work. Watch for and correct or report defective equipment or any hazardous conditions which may cause accidents. Present your ideas on accident prevention at periodic safety meetings.

Carry your safety kit with you at all times and, as necessary, use the goggles, rope, gloves and first aid equipment supplied you. These items should be checked over periodically and replenished from stock carried in the watermaster office.

Suggestions concerning system or operating procedure improvement are welcomed and will be given due consideration.

* * * * *

March 1964 COLUMBIA BASIN PROJECT
WEED CONTROL GUIDE

WEED CONTROL CHEMICAL MIXTURES

1a. Early spring, on broadleaf annuals.
12 pounds 2,4-D amine (3 gallons of 4 lb. or 2 gallons of 6 lb.)
4 gallons diesel oil or aromatic solvent
1 pint emulsifier
Add water to make 380 to 400 gallons

1b. Late spring, early summer, broadleaf annuals
Increase: 2,4-D to 16 pounds
Emulsifier to 1 quart (2 quarts diluted)
Diesel oil or solvent to 8 gallons

2. Waterlines: Cattails and noxious weeds
12 pounds, 2,4-D amine (3 gallons of 4 lb. or 2 gallons of 6 lb.)
40 gallons diesel oil or aromatic solvent
1 quart emulsifier
Water to make 380 to 400 gallons

3. Copper sulfate for algae control: Average conditions.
Use 33 pounds of copper sulfate per 100 cfs, three to ten miles apart every two or three weeks. Suspend in porous bag over earth lined sections. May be dumped in bottom of clean concrete lined sections.

4. Aromatic solvent 100 gallons
Emulsifier 1.0 gallons
Apply through centrifugal mixing pump to submersed aquatic weeds at 6 inches to 12 inches of growth, before flowering, at the rate of 10 gallons per cfs. Measure flow in lateral. Reinforce after three or four miles, if white blanket is thin, with 5 gallons per cfs.

5. Monuron (CMU - Telvar) sterilant.
Add 5 to 10 gallons of water per pound of monuron. Use 20 pounds of monuron per acre on dry sites to prevent weed growth. Not for deep rooted perennial weeds. Apply in fall or winter, or add at least 1/2-inch of water to soak in.

6. 2,4-D as a temporary soil sterilant on deep rooted noxious weeds.
2,4-D amine 40 pounds
Water to make 380 or 400 gallons

Wet soil thoroughly with 200 to 400 gallons of mix per acre in fall or an open winter. Cover area at least 5 feet beyond visible weeds.

7. Dalapon 20 pounds
Wetting agent (emulsifier) 1 pint
Water 100 gallons

8. 2,4-D granular, 100 to 150 pounds per acre

9. Borate - TBA prills, 150 to 200 pounds per acre.

Note: 2,4-D is given in pounds of the active ingredient instead of in gallons. Until 1961, all brands in use on the project contained 4 pounds per gallon. The material purchased for new deliveries in 1961 contains 6 pounds per gallon. A 50-gallon tank would hold 200 pounds of the 4-pound material; 300 pounds of the 6-pound material.

WEED CONTROL

Use of Mixtures Under Typical Conditions

	Weed Condition	Season	Mix No.	Gallons Per Acre	1961 Materials Cost/Acre	Remarks	
1.	Russian thistle, mustard, lambs-quarter, etc.	Spring	1	30 to 50	$0.45 to $0.81	5 MPH, 30 lbs. pressure	
2.	Cattails, noxious weeds and willows	June & Sept.	2	150 to 300	$5.50 to $9.00	Thoroughly wet plant. Use No. 1 on willows alone	3
3.	Morning glory and noxious weeds in rough areas.	All Season	9	150 to 200 lbs.	$70.00 to $90.00	Measure and apply accurately.	
4.	Algae	June to Sept.	3		$0.04 to $0.10/cfs per mile	Frog moss	
5.	Pondweeds	June to Sept.	4		$0.80/cfs/ mile per treatment	Horsetail moss	

	Weed Condition	Season	Mix No.	Gallons Per Acre	1962 Materials Cost/Acre	Remarks	
6.	Late annuals to prevent fall growth	July	1	50 to 85	$1.15 to $1.70		
7.	Early annuals before beans are planted	April	1	20	$0.55	Increase 2,4-D to 16 pounds and increase speed to 6-8 MPH	
8.	Annuals on storage yards, etc., required to be weed free	Nov.	5	100	$45.00	After 2-3 years, add 10 pounds per acre. Treat under eaves each year	4
9.	Perennials, deep roots. Area to support grass within 1 or 2 years	Oct. thru Jan.	9 8 6	125 lbs. 200 lbs. 200-400	$30.00 $90.00 $10 to $20	October thru February apply any time. Lasts six months to one year.	
10.	Grasses: quackgrass, reed canary, etc.	May thru Oct.	7	100	$21.00	Spot treat to wet in May. Retreat once if necessary, same year.	

CALENDAR OF WEED CONTROL

Columbia Basin Project

January

Seeding:	Complete dry banks if possible
Sterilant:	Finish jobs requiring dry material
Burning:	Clean up for seeding and where no weeds will blow in from adjacent land

February

Seeding:	Seed dry areas until February 15, only if moisture is high and need is great
Sterilant:	Use only in high volume of water, or prills
Burning:	Mostly clean up. Check equipment for March

March

Seeding:	Best month to skip
Sterilant:	No, unless can soak in; prills or granules
Burning:	Loose weeds; in channels; preparation for delivery of water
Spraying:	Earliest 2,4-D, pre-emergence, or contact depending on temperature

April

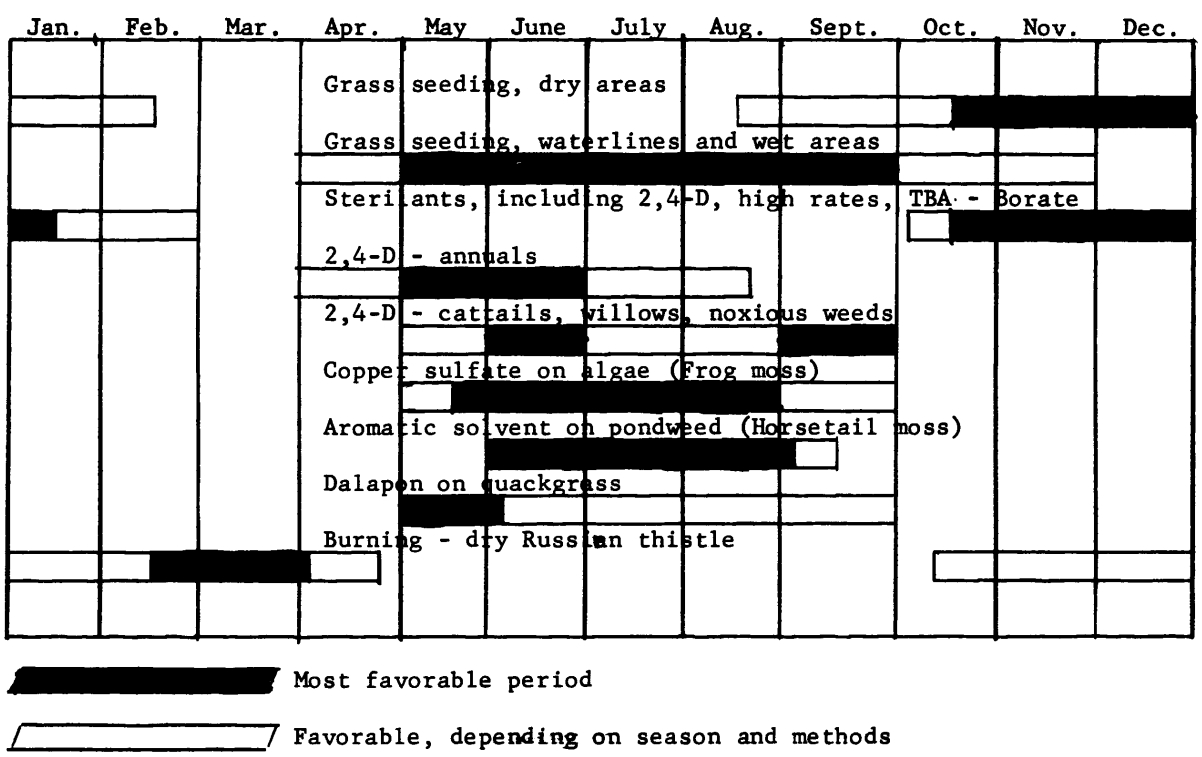
Seeding:	Waterlines only, time permitting
Sterilant:	No, except TBA prills
Burning:	Only as necessary to deliver water
Spraying:	Begin 2,4-D the 25th, average season, earlier if warm
Aquatics:	Check over pumps and equipment

May

Seeding:	Begin waterlines, average season
Sterilant:	No, except TBA prills
Spraying:	All large sprayers at work.

6

FAVORABLE PERIODS FOR SEEDING AND WEED CONTROL - Columbia Basin Project, Washington



5

Consider two shifts per day, if warm spring

Aquatics: Check algae increase and rate of growth of pondweeds. Start copper sulfate

June - Order seed for fall and winter planting

Seeding: Concentrate on waterlines, older areas

Spraying: Begin spot spraying noxious weeds and cattails. If warm spring check mix to use on older Russian thistle

Aquatics: Be ready to begin aromatic solvent on pondweeds by June 5, if warm weather

July

Seeding: Concentrate on waterlines, new areas

Spraying: Spot spraying as in June. Stop boom spraying except for contact

Aquatics: Copper sulfate as needed. Aromatic solvent as needed. Chaining if cheaper

August

Seeding: Waterlines, particularly test year

Spraying: Concentrate on cattails and broadleaf noxious weeds

Aquatics: Copper sulfate, aromatic solvent or chaining as needed

September

Seeding: Waterline, older areas and in watergrass infestations

Spraying: Begin fall spot work: Noxious weeds, cattails, willows

Aquatics: Last treatments

Equipment: Check over sprayers and drills for needed repairs

October

Seeding: Waterline. Drill all dry areas possible this month

Sterilant: Begin after October 20. Before if time permits

Spraying: Continue on cattails, willows, noxious weeds until frost, or job complete

November

Equipment: Repair and winterize sprayers and store aromatic solvent apparatus not used for other purposes

Seeding: Concentrate on dry areas by all methods. Try to complete by 12-1

Sterilant: Continue through December, if necessary

Spraying: No, except as sterilant

Report: Submit costs data for annual weed report, November 15, cutoff date, October 31.

December - Order: Equipment, parts for next season

Seeding: Continue dry areas all methods

Sterilant: Continue as necessary

Burning: Burn in place as required to alleviate March rush

Safe Spraying Practices - 400-gallon Sprayer

1.	Pressure at pump, boom spraying	not more than 35 p.s.i.
2.	Pressure at nozzles, boom spraying	not more than 30 p.s.i. (20 to 25 p.s.i. is better)
3.	Pressure for guns	40 to 65 p.s.i. at gun
4.	Safe engine speed (check with shop)	1800 to 2400 r.p.m.
5.	Refill rate at 15-foot lift	Up to 50 gal/min. not less than 25 gal/min. (fill the tank in 16 minutes or less)

10

Output and Spray Angle of 8010 Nozzle at Various Pressures

Pressure in lbs/sq. in.	5	10	15	20	30	40	60
Capacity in gal/min.	0.35	0.50	0.61	0.70	0.86	1.0	1.22
Fan Angle	53°	63°	70°	73°	78°	80°	82°

9

Width of Nozzle Swath in Inches

Height of Boom In Inches							
12	11.7	15.0	16.8	17.4	19.4	20.0	20.8
20	19.5	25.0	28.0	29.0	32.4	33.6	34.8
24	22.4	30.0	33.6	34.8	38.8	40.2	41.8

Standard nozzle spacing is 20 inches. Equivalent orifice diameter is 5/64-inch.

Sprayer Test Data - 400-gallon Sprayers

Sprayers which do not pass these test performances should be checked in the shop and repaired.

Pressure, measured at the pump, at 3300 rpm, all nozzles on	not less than 45 p.s.i.
Pressure drop, between pump and far nozzle	not more than 10 p.s.i.
Pressure, at end of 50 feet of hose, gun on	not less than 50 p.s.i.
Refilling rate at 15-foot of lift	not less than 25 gal/min.

Note: These are test data, not operating data. See page 9 for safe spraying practices.

11

TABLE FOR DETERMINING SPRAY ACRES

Spray Acres = Miles X Acre Miles of Spray Swath

Spray Swath In Ft.	Miles Sprayed 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
8	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
10	0.1	0.2	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.4
12	0.1	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6
14	0.2	0.3	0.5	0.7	0.9	1.0	1.2	1.4	1.6	1.7	1.9
16	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2
18	0.2	0.4	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.5
20	0.2	0.5	0.7	1.0	1.2	1.5	1.7	2.0	2.2	2.5	2.7
22	0.3	0.5	0.8	1.1	1.4	1.6	1.9	2.2	2.5	2.7	3.0
24	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3
26	0.3	0.6	1.0	1.3	1.6	1.9	2.3	2.6	2.9	3.2	3.6
28	0.3	0.7	1.0	1.4	1.7	2.1	2.4	2.8	3.1	3.5	3.8
30	0.4	0.7	1.1	1.5	1.9	2.2	2.6	3.0	3.4	3.7	4.1
32	0.4	0.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.4
40	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
48	0.6	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	6.0	6.6
50	0.6	1.2	1.9	2.5	3.1	3.7	4.4	5.0	5.6	6.2	6.9

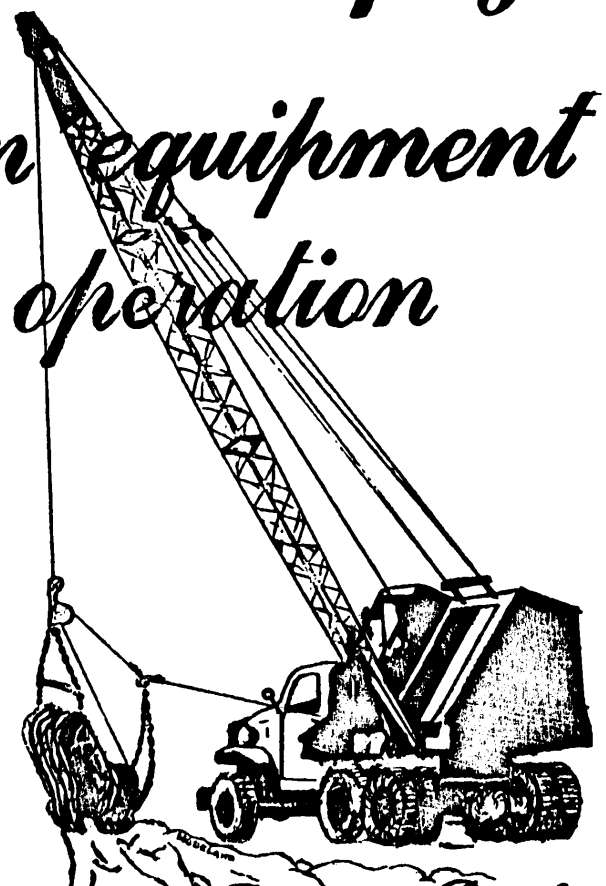
12

Columns are headed by speedometer mileage expressed in tenths. Lines begin with width of spray swath in feet.

To read spray acres where a 14-foot swath was sprayed 0.9 miles: Follow "14" feet line to right and read figure in "0.9" column, which is 1.6 spray acres.

* * * * *

Standards For Safety in equipment operation



Columbia Basin Project

IRRIGATION & LAND DIVISION

REVISED MARCH 1964

FOREWORD

Everyone who has worked with heavy equipment realizes that accidents which occur in equipment operation can very easily result in costly damage to property and severe personal injuries or loss of life. Yet many accidents can be traced to errors in judgment or failure to take necessary precautions to insure safety.

Our purpose in establishing these standards is to provide basic guidance for the safe operation of equipment in irrigation operation and maintenance work. All local, State and Federal safety codes must also be considered and applied as necessary. It is every employees responsibility to know and follow good safety practices.

Of course, there will be occasions which will require that you exercise your own judgment as to the best way to get a job done. In this kind of situation, always remember to take time to be safe and avoid needless risk. The life you save may be your own.

J D Humes

Chief, Irrigation Operations Branch

STANDARDS FOR SAFETY IN EQUIPMENT OPERATION

Page

I. Loading Equipment for Moving. 1

II. Moving Equipment. 1

III. Preparing for Work at the Job Site. . . 2

IV. Operating Equipment in General. 3

V. Operating Trucks. 6

VI. Operating Tractors. 7

VII. Operating Draglines and Gradalls. . . . 8

VIII. Using Cable and Slings. 10

IX. Repairing Equipment 10

STANDARDS FOR SAFETY IN EQUIPMENT OPERATING

I. Loading Equipment for Moving

1. Clean truck or trailer bed of rocks, dirt, and broken decking.

2. When fastening truck to trailer, be sure to connect the air hoses. Check that air pressure is up to safe operating pressure.

3. Place blocks under both sides of equipment transport trailer or flat car to prevent tipping while loading and unloading equipment.

4. Make sure the loading ramp is strong enough to hold the weight of the machine and secure enough to prevent slipping.

5. Watch for overhead wires and close clearances.

6. All persons assisting must stand well in clear during loading operations.

7. Block the machine to prevent creeping.

8. Bind the machine to the trailer securely with chain before moving.

II. Moving Equipment

1. Supervisors and transport drivers shall be familiar with State and County regulations for moving equipment on the road (including weight limits and requirements for flagmen or pilot cars).

2. Supervisors shall make sure transport drivers are aware of all regulations and the extent of their responsibilities.

3. Check your tires before moving. A low or flat tire places a double strain on the dual next to it. Should a blowout occur on a curve, the load will tip and possibly overturn.

4. In moving a machine by any method, drive at a safe speed in accordance with road conditions.

5. Check for adequate clearances at underpasses and overhead wires.

6. When moving track-mounted draglines under their own power, get clearance from railroad before crossing tracks.

7. Be courteous to traffic following you.

8. Be extremely cautious. You are handling enormous weight and wider than ordinary loads.

9. Check your load at intervals for possible shifting, loose binders, slack chains, etc.

10. When towing equipment to shop or elsewhere for mechanical repairs, use proper and safe equipment. Supervisors will assign sufficient numbers of workmen to insure safety at all times.

III. Preparing for Work at the Job Site

1. Observe the location of power lines. (See Sec. VII, II.) No equipment shall be moved or operated in dangerous proximity to power lines. Booms of draglines, power shovels, guy lines, or other equipment should not be operated within less than 6 feet of any power lines.

2. When it is necessary to work near or under power lines where minimum (6 feet) clearance cannot be observed, responsibilities are as follows:

   a. Supervisor shall notify power company of need for line to be de-energized.

   b. Operator not to proceed until supervisor advises line is de-energized.

   c. Operator to exercise extreme care to avoid contacting lines.

   d. All non-operating personnel shall stand clear of machine and attachments.

3. When rubber-tired vehicles equipped with boom or ginpoles are being operated in the vicinity of power lines, a chain shall be attached to the metal frame with the loose end dragging on the ground.

4. In preparing to operate unfamiliar equipment, get complete operating instructions and demonstration from qualified operator.

5. The supervisor shall discuss the work to be done with the machine operator and point out possible dangers. The operator shall look over all working conditions and plan his work accordingly. Look for wet ground, the condition of roads, etc.

6. Walk completely around machine before starting or moving to be sure it is safe.

IV. Operating Equipment in General - Trucks, Tractors, Tractor-loaders, Patrols, Draglines & Gradalls

1. The supervisor shall assign a competent

operator to work with each new employee until he has satisfactorily demonstrated his ability to operate the machine in a competent and safe manner.

2. The operator should keep the supervisor currently informed of unusual hazards encountered on the job.

3. If a helper is present on the job, he has a safety responsibility, in addition to his other duties, to watch for dangerous conditions and to ward the operator about them.

4. If two machines are working together, each operator should know the exact position of the other at all times.

5. Wait until the machine has come to a stop to mount or dismount.

6. If the terrain is rough and unsafe, prepare an adequate road before attempting the job.

7. If your machine is "stuck", avoid spinning or jumping the wheels or tracks which will place excessive strain on axles and driveshafts. Find some other way to get out or get help.

8. If the machine seems to be leaving the road or sinking in soft material, stop and investigate, then decide the best way to return to firm ground. Do not hesitate to get help to get out. Avoid placing the machine in a more dangerous position. Do not push the machine with the boom.

9. In turning around on a canal bank, it is usually best to head the machine towards the canal.

10. When operating parallel to a bank, use caution to avoid tipping over. When using a low boom, use the outriggers if tipping is possible.

11. With any kind of vehicle, shift down when climbing a hill to avoid lugging the motor.

12. Going downhill, shift to lower gear to keep vehicle under control. With gasoline engines, use compression together with brakes. Avoid constant braking but also avoid "winding up" your engine too high. With diesel engines, do not use compression for braking.

13. Do not leave equipment parked on fills, below fills on canal banks, or in grassy areas where there is possibility of fire.

14. When operating in heavy dust, use goggles and respirator.

15. When operating spray equipment wear goggles, respirator and gloves. Apply protective skin cream to exposed areas of the skin. Change to clean clothes daily, and take a shower after each spraying shift, be familiar with toxicity of chemicals used and first aid measures to combat them.

16. Do not wear loose or ragged clothes or unsuitable footwear around equipment.

17. Keep windshield wipers, lights and horn in good order. Keep glass clean.

18. Keep floors and decks clean.

19. No one shall ride on fenders or running boards or elsewhere on outside of equipment.

20. A tow cable of adequate strength shall be carried with each piece of equipment.

21. During cold weather, always clean tracks on track machines to prevent mud from freezing on sprockets, etc.

22. Do not operate or sit in tightly closed cabs with the engine running.

23. Do not grease, service, or make adjustments and repairs to running equipment.

V. Operating Trucks

1. Before taking truck to a job, check that directional lights or signal arm is working properly. Always use signals before making turns.

2. Drive at a speed which will be safe for the condition of the truck, the road, the traffic, the weather, and the visibility.

3. Do not follow too closely to the vehicle ahead. Leave space for cars to pass and to stop in an emergency. Sound horn when overtaking and passing vehicles.

4. When stopping on the highway, get all four wheels off the road. If equipment is immobilized, use flares, flags, etc., as required by law.

5. Use headlights when driving in heavy dust, fog or snow. Use caution. Parking lights on when moving not legal.

6. Keep lights and directional signals clean.

7. Make sure brakes are working well at all times. Do not depend on the handbrake

when backing to dump. Keep your foot on the footbrake.

8. When parking on a hill, leave the truck in gear and block the wheels.

9. When loading a truck with a dragline, if the truck does not have a rock shield the driver shall stay out and away from the truck.

10. Use special caution while backing. Open door and look back - don't depend entirely on rear view mirror. Sound horn before starting to back.

11. Do not back up square to ditchbanks. Back at an angle to keep one wheel on solid ground.

12. In raising the truck bed, run the motor just above idling speed.

13. Lower the truck bed before starting for the next load.

14. Take bed hoist out of gear before driving away.

15. Do not overload trucks. Load according to roads to be hauled over, but not above rated capacity.

VI. Operating Tractors

1. When parking - lower the blade, loader, bucket or can to the ground, take out of gear, engage the clutch and set the brakes.

2. While adjusting the power control unit, disengage the master clutch and put the transmission in high gear.

3. When adjusting the master clutch, lower the blade or can and shut off the motor.

4. When pulling a carryall, drop the can as a brake when going down an incline.

5. When backfilling deep excavation or cut bank, deposit first blade of material on edge of cut. Then push it in with second pass, repeating operation until there is no danger of cave-in.

6. When going into a canal, always use the master clutch in easing machine over embankment. Never use steering clutches in this operation because the steering clutches disengage only the tracks and not the transmission. Always back in so that the blade serves as a counterbalance.

7. Avoid working parallel to cut or steep bank. If absolutely necessary to do so, work slowly and exercise extreme care that the machine does not roll. The machine may roll if the blade strikes a solid object.

8. Keep deck free of mud, ice, snow, loose tools, chains and foreign objects.

VII. Operating Draglines and Gradalls

1. When moving up or down a steep incline, use a track tractor to help up or down. The tractor and cable should be heavy enough to hold the weight of the machine.

2. Lower the bucket down to the truck bed before dumping the load.

3. Do not use frayed or worn cable.

4. Make sure no one is standing below when raising or lowering the boom.

5. Lower the boom to a safe angle when parking.

6. Do not leave the machine parked below or above an embankment.

7. Any time you leave the machine, place the bucket flat on the ground. On the gradall, place the boom on the rack or the bucket on the ground.

8. Replace boom cable once a year and inspect frequently.

9. Use a cable wedge of the proper size to avoid pulling through the sockets.

10. Lorain Crane - Do not use operator cab control in difficult situations.

11. Operating near power lines:

    a. Make it a point to clear power lines by at least 6 feet. If this clearance is impossible, proceed as stated in Sec. III (1), and (2).

    b. Turn on crane boom warning device if working in vicinity of any power lines. However, be alert at all times. Do not depend entirely on boom warning or protective device. Remember that damp weather means increased danger.

    c. When a wheeled machine operates close to a power line, the helper should remain in the machine. For a track machine, the helper should remain away from the machine.

    d. If a rig does swing into a power line, the operator should stay on the rig and attempt to swing it away from the line. Ground men should not touch any part of the rig, the lines or the load - as all of these will be energized.

VIII. Using Cable and Slings

1. While winding cable on a drum, do not handle the cable with your hands while using power. If necessary to guide the cable, use a stick.

2. Cable slings used for lifting should be used for no other purpose. They should be kept in the warehouse when not in use to protect them from deterioration.

3. Use correct number of clamps properly spaced, with all saddles of the clips in contact with the lead end of the cable. After the cable has been in use short time, all clamps should be tightened again.

4. Have at least three turns of cable around the drum before putting a load on the cable.

5. Do not ride on sling loads or buckets.

IX. Repairing Equipment

1. Except in cases of emergency or unusual circumstances, heavy repairs to equipment will be done only in shops. Supervisors will not assign men to work alone on heavy repairs if work of hazardous nature is involved.

2. When working on a tractor with the blade or can in raised position, tie it up or

block it.

3. Place blocks under the bed before working under a raised dump bed on a truck.

4. In using coffin jacks or hoists to repair equipment, be sure the jack or hoist or sling are strong enough. Have a secure place to stand and work from, so that you will not be hurt in case the load should fall.

5. Do not trust a jack. Always block equipment before working under it.

6. Make sure the jack has a firm, flat footing. Stand clear of the handle.

7. When welding or burning around equipment, use extreme caution to avoid fire or explosion. When cutting or welding containers that have held flammable solids, liquids, gases, or substances that may produce flammable gases or liquids, follow the procedures stated in American Welding Society Pamphlet No. A6.0-52, "Safe Practices for Welding and Cutting Containers That Have Held Combustibles". A copy of this pamphlet shall be available for reference in each shop. Only experienced shop personnel shall do work of this nature.

8. Keep tools clean and free of grease.

9. Keep heads of chisels and punches ground off.

10. Use proper tools for all jobs.

* * * * *

IRRIGATION SAFETY OPERATIONS
PROCEDURES FOR PUMPING PLANTS

With the approach of another irrigation season, it again becomes necessary to emphasize safe operations practice in regard to all pumping plants and relift stations. This applies to plant mechanics, helpers, ditchriders, electricians, and any others who may undertake to operate these plants.

The plant mechanics have been issued danger tags which are to be attached to the operating switchgear prior to irrigation season. When one of these tags is displayed, all personnel are required to secure clearance from the plant mechanic in charge or be accompanied by him before attempting to start any unit. These tags shall be dated and signed by the plant mechanic when attached and when removed, and shall be recorded. The smaller plants may be tagged "OK", signed and dated by the plant mechanic where time will not permit him to be there personally.

The procedures listed below will be followed:

1. Operating instructions for all major pumping plants will be prepared or updated. These will stress safety cautions and procedures and will be mounted in permanent form in a prominent place on the control panels.

2. Instructions and training on safe operating procedures will be reviewed with plant mechanics by their supervisor.

3. The plant mechanic will inspect, clean and adjust all control operating mechanisms each year prior to the start of the irrigation season. Should an unsafe condition be noted during the operating season, arrangements for its correction shall be made between personnel of the field branch and the Technical Services Branch.

4. At least once each year the operating ditchrider and his watermaster will review operating procedures with the plant mechanic at each plant. When a different ditchrider is assigned a ditchride during the operating season, he shall be instructed as to the proper operating procedures for each pumping plant by the plant mechanic and watermaster prior to assuming responsibility for the ditchride.

5. If something goes wrong or is not working properly, the ditchrider is to notify the plant mechanic or watermaster immediately, giving complete information concerning the malfunction.

6. An operator shall report any mistakes which he may have made.

7. Do not block contactors in place with a piece of wood.

8. Shut off motors with pushbutton switches.

9. When burning weeds and rubbish, exercise caution not to burn the galvanizing off fences, rubber cover on flexible conduit canvas motor covers and any other combustible property around the plants.

* * * * *

March 19, 1964

To: Irrigation Managers - 440, 450, 460, 470

From: Acting Irrigation Supervisor - 400

Subject: Flooded measuring devices - revised procedures for operating irrigation system

During the past winter, letters were sent to many water users asking that deficiencies to measuring devices be rectified where the trouble originated in his system.

Response to the recent reminder sent to the same water users indicates that the majority have either taken care of the trouble or are making arrangements to do so. Some have not responded, either by action or card.

The following instructions apply for handling the delivery of water:

1. Ditchriders shall not permit the flooding of any measuring device unless they have written approval regardless of whether the water user received a letter about his flooding measuring device or not.

2. Those who received letters and still have their problem but intend to take care of it may receive their full water delivery order after the irrigation manager has cleared such action and after the water user's irrigation district director has concurred in a limited extension of time for the rectification work to be done.

3. Those water users who received letters and have not responded by action or mail shall have their water limited to the extent stated in the original letter until such time as they have made arrangements to take care of the deficiency. If

the water user did not receive a letter as to his deficiency he must correct the problem or have the flooding of the measuring device cleared by the watermaster.

It is expected that in handling items 2 and 3, there may be modifications to the system at the water users expense and in some cases concessions on the part of the project. All such actions, however, will be controlled by and be at the discretion of the irrigation manager and in some cases with the collaboration of the irrigation district director or directors.

J D Humes

* * * * *

Ditchrider Mileage Allowance

During 1964 you will be paid $0.10 a mile for actual speedometer mileage for the use of your privately-owned vehicle on your ditchride from the beginning of the irrigation season through April 25. From April 25 through August 29 you will be paid a beat allowance covering only the regular scheduled ditchride beat. If you are called out or have to go out, outside your regular working hours, to remove weeds, restart pumps, etc., you will be paid actual speedometer mileage.

From August 29 through the end of the irrigation season you will be paid actual speedometer mileage.

Mileage other than the regular beat ride must be reported on Form 115A (Statement of Travel-Mileage Claim).

Be sure that you and your watermaster sign the Form 115A. In filling out the Form 115A, it is not necessary to fill in the arrival and departure time columns.

* * * * *

GPO 844-644