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**Tractor Operation and Training
Consultant Report**

By

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BACKGROUND

I arrived in Islamabad, Pakistan on 22, January, 1990 and spent 28 of 36 working days in the field, inspected 18 tractors, held 3 training practicums and gave training to 21 tractor operators. Below I have outlined accomplishments, problems, and recommendations as requested:

OPERATIONAL STATUS OF TRACTORS AND IMPLEMENTS

Tractors

Of the 18 Ford 5610 tractors I have worked with 17 of them are 100% operatable. The one exception, located at Darro, has a fuel injector problem. This problem will have to be serviced by a Ford repair shop. Four tractors had ruined batteries which have been replaced by local purchase. I believe this problem was caused by under use of the tractor. Replacement batteries, made in Pakistan are available for Rs.2,750.00. Three tractors are short of the top linkages. This linkage is necessary for all rear mounted implements. These are available at local tractor dealers for Rs.350.00. Only two hydraulic snap couplers were sent with each tractor, four are desirable. They are available locally, made in Pakistan, at nearly all tractor parts shops for Rs.100.00 each.

Disks

The Taylor-Way disk is well made and simple in adjustments. There are no grease fittings but the tractor operator should check for loose bolts and nuts before operation. A disk is not well suited for breaking ground, but is best used for preparing a seed bed after plowing.

Land planes

The Gill land plane is of heavy construction and is well liked by those who have used it. It does an excellent job of land levelling. It may be used in reverse, as a dozer, for shallow filling or low burm (bund) building. It was not designed and should not be used for rock or stump removal. The ripper teeth will do a good job of soil preparation for seeding. Maintenance is simple with only six grease fittings.

Front blades

The front blade manufactured by Pathfrider was built as a snow plow to be used on pickup trucks. It was not made for soil moving, and I think it will never be entirely satisfactory for that purpose. However, using the expertise in local shops, the blades can be reinforced so they will be usable for light soil moving. It should not be used for excavation or trenching work.

The front blades have been mounted on four tractors in four different districts. I have spent much time inventorying parts and

redistributing parts for the front blades. The front blade consists of five major parts: 1. A-frame, 2. Box swivel, 3. main frame, 4. blade, 5. assembly parts and parts book. Except for the main frame and the blade, parts needed at one location were at another. To compound the situation no inventory was carried on these parts, as they have no parts numbers. Nobody knew what these parts were for or what to call them. At Attock there were 20 A.frames (they needed two). At Jhelum there were 24 assembly parts and parts books (they needed), and Rawalpindi had 25 sets of steel mounting braces (they needed 1). The distribution of parts is not completed at this time. The DFOs are aware of the parts they have that are extra, and what parts they need to complete the unit. These can be mounted by local welders in collaboration with the local tractor driver and DFO.

I have spent three days in different local welding shops and found their work is very good. Local welders have a good knowledge of welding, layout, and bracing. They are a source of supply for iron and bolts.

Replacement parts

Some DFOs have expressed fear of not being able to obtain replacement parts. If they follow this line of thought, the tractors will never be used. Two years of setting idle has resulted in deterioration of the batteries and tires. Replacement parts such as, filters, wheel bearings, gaskets, and belts, for minor repairs are available in Pakistan.

TRACTOR OPERATOR CAPABILITY

When I arrived in Pakistan, I understood that the reason for non-use of the tractors was a tractor operator problem. Surprisingly, I have found the tractor operators well qualified. Looking at the hours used on the tractors, by district, I see some districts have made good use of the tractors, some fair, and some poor. I do not think the problem is the tractor operators, but lies above them. The tractor operators ranking of skills (see attachment) supports me in this. Some incentive must be found to promote tractor usage at the district level.

TRACTOR TRAINING

Field practicums were given at three locations: Jhelum, D. I. Khan, and Pindi Gheb. Training was as follows:

Three hours of maintenance, safety instructions and tractor operation manual study; six hours in the field in actual operation of the tractor and implements. Instruction was given on throttle settings, gear selection, implement controls, implement adjustments, and safety. Each operator was given time to operate tractors and each implement. After nine hours of training, I ranked the operators into three categories: well trained, sufficient training, and needs further training. (see attachment)

RECOMMENDATIONS:

1. The tractors be started once a week and run for 1/2 hour. Some of this time should be spent on the road or in the field to flex the tires.
2. Decals or signs saying "no riders" in English and Urdu be attached to each side of the tractors, and a "NO RIDER" policy should be strictly followed. This will prevent accidents to happen.
3. Tools, tool boxes, and grease gun be posted to the same location as the tractor, and not kept in stores or forest offices, so that tractor operators have ready access to these.
4. The D F O's be encouraged to make use of the tractor's and equipment to prepare land for tree planting and/or to install soil and water conservation measures.
5. Use only proper grade of grease in grease guns, it can be found in some town, and could be shipped to places where it is not available.
6. Batteries should not be disconnected when the tractor is parked. Both of the terminals are on the same end of the battery and could easily be cross connected. This could ruin the alternator. It does not increase battery life to disconnect the terminal leads.
7. Dirt and trash should be cleaned out of the radiator fins periodically to avoid engine overheating.
8. The front blade should be reinforced before use.
9. The tubeless front tires be equipped with tubes where flat tires are a frequent problem.
10. Use the hand throttle when operating field equipment should be emphasised. The foot throttle should be used for the road only.
11. Cover exhaust pipe when the tractor is not in use to prevent rain water damage to the engine.
12. The cutting edges of implements be coated with grease at the end of each job to prevent rust. Salty soil is particularly damaging to these parts.
13. All hydraulic fittings be covered when not in use to prevent damage from dirt and grit.
14. Never let the fuel tanks run completely dry, to prevent Air-locking, as it will result in wastage of time and effort to clear.
15. A Diesel mechanic be hired for Darro Plantation. The isolation from repair shops and the amount of equipment to maintain makes this highly desirable.
16. The tractor operators graded "needs further training" should be given more actual field training. Mr. M. Iqbal Shah, the driver of the PFI Tractor at D.I. Khan research station be the trainer/troubleshooter

for these drivers and for other training when required, due to his knowledge of the tractors handling and operation.

17. Field staff should be encouraged to use the tractors as frequently as needed, and will do well to shed their fears of non-availability of spare parts, breakages and maintenance etc.

Tractors and Tractor Locations Visited

<u>Location</u>	<u>Hours</u>	<u>Tractor Operator</u>
Kharian PFI	800.4	Najaf Ali Khan
Peshawar PFI	501.5	Abdul Rashid
D. I. Khan PFI	280.0	Mohammad Iqbal Shah
D. I. Khan	123.4	Mukhtar Hussian
D. I. Khan	123.0	Salahuddin
Attock	22.0	Umer Khan
Rawalpindi	23.0	Wahid Hussain
Jhelum	22.0	No Driver
Jhelum	9.8	Mohammad Iqbal
Kahrian	49.0	Mohammad Aslam
Gujrat	27.0	Shafqat Ali
Darro	679.7	Bashir Samejo
Darro	200.4	Ishque Chandio
Darro	646.0	Mohammad Janwari
Darro	380.2	Mohammad Ramzan Machhi
Darro	664.7	Phota Khan Janwri
Darro	539.2	Eid Mohammad Janwri
Pindi Gheb	248.7	Mohammed Sulaiman

FIELD PRACTICUM ATTENDANCE

<u>Date</u>	<u>Tractor operator</u>	<u>Location</u>
February		
7 - 8 Jhelum	Mohammad Iqbal Waris Ali Khaliq Mahmood Safqat Ali Mohammad Aslam	Jhelum Sialkot Chakwal Gujrat Gujrat
18 - 20 D. I. Khan	Mohammad Mureed Naik Mohammad Zamirul Hussain Shehzad Mir Salauddin Mukhtar Hussain M. Iqbal Shah	Nasirabad Nasirabad Nasirabad Kohat D. I. Khan D. I. Khan D. I. Khan, PFI
26 - 27 Pindi Gheb	Wahid Hussain Ramzan Bashir Ahmed M. Juma Zahoor Hussain Eid Mohammad Mohammad Solaiman Humar Khan Phota Mohammad	Rawalpindi Darro Darro Darro Darro Darro Pindi Gheb Attock Darro

TRACTOR SET

5610 FORD TRACTOR
1 large box of spare parts
1 tool box
1 set of snap-on tools

Taylor Way disk
6 extra disks

Gill Land leveler

Pathfinder front blade

Tractor use by District

Location	Hours	Average hours per District
Kharian PFI	800.4	
Peshawar PFI	501.5	
D. I. Khan PFI	<u>280.0</u>	
	1581.9	527.3
Attock	22.0	
Pindi gheb	<u>248.7</u>	
	270.7	135.3
Jhelum	62.4	
Jhelum	<u>9.8</u>	
	72.2	36.1
Kharian	49.0	
Gujrat	<u>27.0</u>	
	76.0	38.0
Rawalpindi	<u>23.0</u>	
	23.0	23.0
D. I. Khan	123.0	
D. I. Khan	<u>123.4</u>	
	246.4	123.2
Darro	679.7	
Darro	200.4	
Darro	646.0	
Darro	380.2	
Darro	664.7	
Darro	<u>539.2</u>	
	3110.2	518.3



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CONSULTANCY ACTIVITIES REPORT

Name <i>George E. Slagle</i>		Social Security Number <i>511-24-6813</i>		only if U.S. citizen or resident alien		
Assignment <i>TRACTOR CONSULTANT PAKISTAN</i>						
<p>This report is to be prepared in triplicate, signed by both the Consultant and the WI field representative and distributed as indicated at the bottom of each sheet. It will be used to determine the number of days for which the Consultant will be paid. Therefore, the report should be submitted as soon as possible after completion of the assignment.</p> <p>*Please note specific arrival and departure times of travel from one location to another.</p>					ACTIVITY SYMBOLS T - Official Travel D - Official Duty H - Holiday W - Weekend	
Date	Day of Week	Activity Symbol	Location	Time of Arrival	Time of Departure	Brief description of activity (e.g. site, visit, report writing, interviewed scientists, etc.)
1-18	Thu	T	MANHATTAN Ks		3:30p	MFK-cleveland-London
1-19	Fri	T	LONDON	-	-	
1-20	Sat	T	LONDON	-	-	
1-21	Sun	T	LONDON		6:15p	
1-22	Mon	T	Islamabad	9:15a		Meeting - Gavy Naughton, Ar Dickhister, Khalid Husain
1-23	Tues	D	Rawalpindi			Inspect Tractor - Wahid Haggan - attach equip.
1-24	Wed	D	Gujrat			" " took inventory spare parts
1-25	Thur	D	Jhelum			" " " " MOHD IQBAL
1-26	Fri	H	Islamabad			
1-27	Sat	D	Jhelum			mounted main frame on tractor at local welding shop
1-28	Sun	D	Attock			inspect tractor - inventory spare parts - fuel pump & supplies
1-29	Mon	D	Peshawar			inspected PEI tractor, inventory Abdul Rashid
1-30	Tues	D	Islamabad			Assembled parts for storage & redistribution
1-31	Wed	D	Gujrat			mounted main frame on tractor at local welding shop
2-1	Thu	D	Rawalpindi - Attock			Assembled parts for storage & redistribution
2-2	FRI	H	Islamabad			
2-3	Sat.	D	Islamabad			office - worked on reports - entered on computer
2-4	Sun	D	DI Khan			inspection of 3 tractors driver instruction
2-5	Mon	D	DI Khan			mounted main frame on tractor at local welding shop
2-6	Tues	D	Islamabad			preparation for field training at Jhelum
2-7	Wed	D	Jhelum			training - 5 drivers present (in field)
2-8	Thur	D	Jhelum			training - 5 drivers present - Safety etc.
2-9	Fri	H	Islamabad			
2-10	Sat	D	Islamabad			office - training reports + final report prep
2-11	Sun	D	Islamabad			distribution of parts for front blade
2-12	Mon	D	Karachi			Travel to Karachi w/ Nasrullah
2-13	Tues	D	Karachi			Darya Plantation - 6 tractors
2-14	Wed	D	Karachi			Return Islamabad w/ D/CF Nasrullah
2-15	Thur	D	Rawalpindi + WARC			search for repair parts motor w/ Dr M. ALZAL
2-16	Fri	H	Islamabad			
Signature of consultant <i>George E. Slagle</i>				Signature of field representative <i>John R. Holt</i>		
Date <i>1 March 1990</i>				Date <i>1 Mar 90</i>		



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CONSULTANCY ACTIVITIES REPORT

Name GEORGE E. SLAGLE	Social Security Number 511-24-6823 <small>only if U.S. citizen or resident alien</small>
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Assignment
TRACTOR CONSULTANT PAKISTAN

This report is to be prepared in triplicate, signed by both the Consultant and the WI field representative and distributed as indicated at the bottom of each sheet. It will be used to determine the number of days for which the Consultant will be paid. Therefore, the report should be submitted as soon as possible after completion of the assignment.

ACTIVITY SYMBOLS
T - Official Travel
D - Official Duty
H - Holiday
W - Weekend

*Please note specific arrival and departure times of travel from one location to another.

Date	Day of Week	Activity Symbol	Location	Time of Arrival	Time of Departure	Brief description of activity (e.g. site, visit, report writing, interviewed scientists, etc.)
2-17	Sat	D	Pindi Gheb			Pindi, Gheb - inspect tractor - inventory parts
2-18	Sun	D	DI Khan			tractor operators training and -
2-19	MON	D	DI Khan			skills assessment Dr IQBAL
2-20	Tue	D	DI Khan			installed front blade + field practice
2-21	wed	D	Hyderbad			Travel - Islamabad - Karachi - Hyderbad
2-22	Thur	D	Davro			installed front blade on tractor return
2-23	Fri	H				to Islamabad.
2-24	Sat	D	Islamabad			Copied reports + daily log to computer
2-25	Sun	D	Islamabad			prepare for drivers training
2-26	Mon	D	Pindi Gheb			tractor drivers training
2-27	Tue	D	Pindi Gheb			9 drivers present
2-28	wed	D	Islamabad			Prepare final report
3-1	Thur	D	Islamabad			Presented final report
3-2	Fri	H	Islamabad		0930	
3-3						
3-4						
3-5						

Signature of consultant <i>George E. Slagle</i>	Signature of field representative <i>Ch. R. Hill</i>
Date <i>1 March 1990</i>	Date <i>1 Mar 90</i>

Tractor Operators Skills assessment

WELL TRAINED

Mohammad Mureed
Naik Mohammad
M. Iqbal Shah
M. Juma

SUFFICIENT TRAINED

Mohammad Iqbal
Waris Ali
Shafqat Ali
Mohammad Aslam
Zamir ul Hussain
Shehzad Mir
Salahuddin
Mukhtar Hussain
Wahid Hussain
Ramzan
Bashir Ahmed
Zahoor Hussain
Eid Mohammad
Mohammad Solaiman
Photo Mohammad

NEED ADDITIONAL TRAINING

Khaliq Mahmood
Humar Khan

SCOPE OF WORK

1. To make a written work plan to handle the assigned tasks.
2. To set up and conduct field practicums.
3. To prepare a comprehensive final report.

I wish to thank all the people I've met for their cooperation and help. A special thank is extended to Mr. Nasrullah Khan Aziz, DIGF for his time and effort.

A copy of my daily notes are on file at the Technical Assistance Team office, Islamabad.