

FPST 2483 Lab #14 Fire Pump Inspection & Test

Name: Liu Xingyu

OBJECTIVE: After completing this laboratory unit the student will be able to inspect a fire pump to determine the required information and observe a standard test on a fire pump installation and properly evaluate and analyze the test results.

PART A PROCEDURE:

Students are to inspect the fire pump installation at the SWJTU lab. A fire pump data sheet is to be filled out for pump (only the top half).

PART B PROCEDURE:

Using the test methods outlined in NFPA 25 and Chapter 10 of your text, a standard pump test is to be conducted for the horizontal electric pump within the FPST lab building.

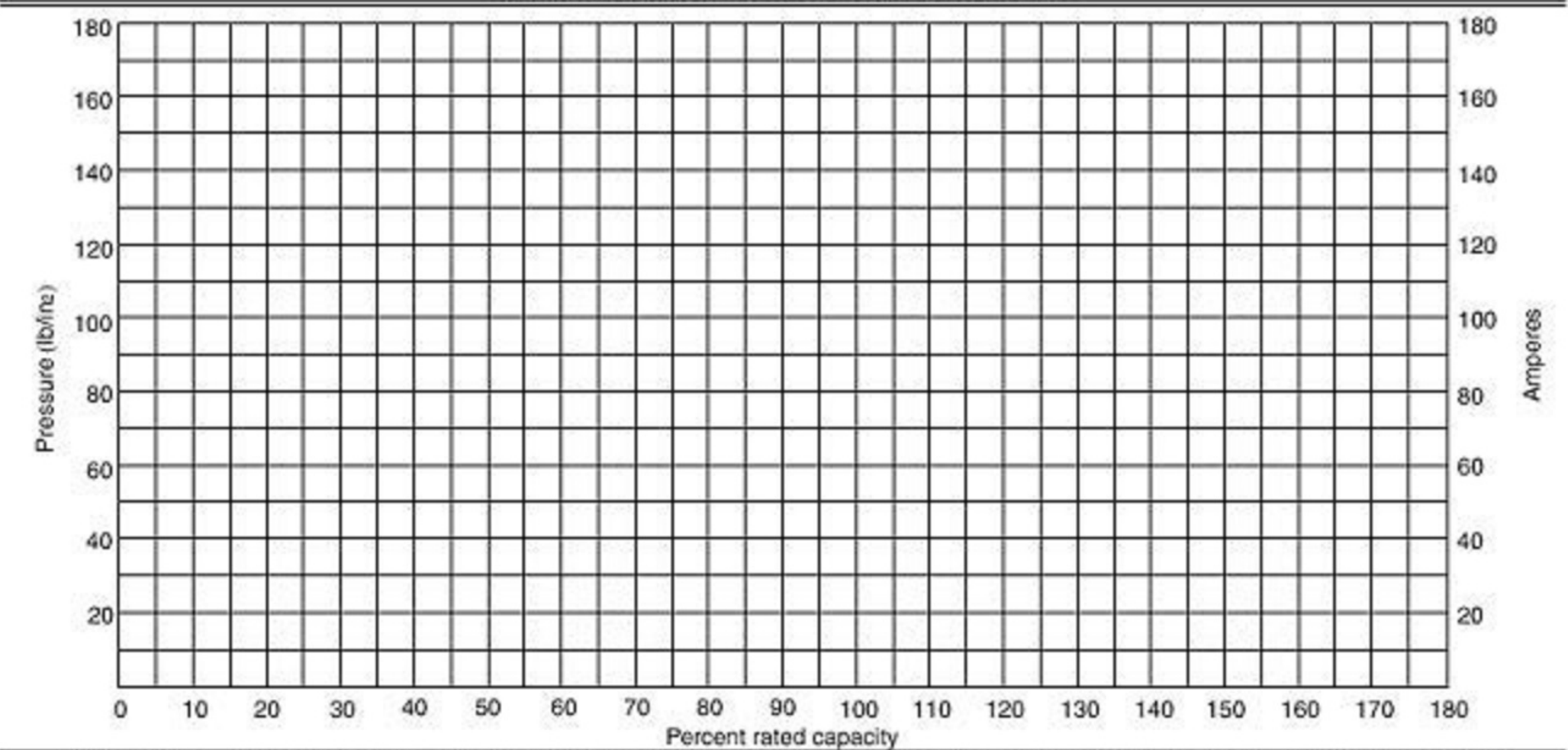
Observe the fire pump test on the video(s). The attached form is to be completed (fill out all of the data cells) and submitted following the fire pump tests.

After completion of the test, Plot the expected curve (based upon the rating of the pump) and plot the observed pump performance curve from the data collected.

PUMP ACCEPTANCE TEST DATA

PROPERTY OF		SWJTU EPST				TESTED BY		DATE	
ADDRESS		SWJTU 2483 Lab							
CITY		LE Mei China		STATE					
SUBJECT		Fire Pump		DIAMETER; AT GAUGE		SUCTION		DISCHARGE	
PUMP		SHAFT <input type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/> VERTICAL		MANUFACTURER Shang Hai Yu Quan		LISTED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		SHOP OR SERIAL NO. Not Shown	
		RATED GPM 317		RATED HEAD-FT. (psi) 138		RATED RPM 2900		SUCTION FROM pressured water tank	
IF VERTICAL TYPE		VERTICAL DIST. DISCH. GAUGE TO WATER LEVEL		STATIC FT.		RIGHT-ANGLE GEAR DRIVE		SHOP OR SERIAL NO.	
		PUMPING FT.		MANUFACTURER		MODEL OR TYPE		LISTED <input type="checkbox"/> YES <input type="checkbox"/> NO	
								PERFORMANCE <input type="checkbox"/> SMOOTH <input type="checkbox"/> ROUGH	
DRIVER		MANUFACTURER XIMA MOTOR CO. LTD		LISTED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		SHOP OR SERIAL NO. 1347		MODEL OR TYPE YES-225M-2	
		<input checked="" type="checkbox"/> ELECTRIC MOTOR		RATED VOLT. 380V		OPERATING VOLT. 380		RATED F.L. AMPS 63	
		<input type="checkbox"/> DIESEL ENGINE		<input type="checkbox"/> GASOLINE ENGINE		<input type="checkbox"/> GAS ENGINE		<input type="checkbox"/> STEAM TURBINE	
								<input type="checkbox"/> PRESS. GOVERNOR BUILT IN	
								<input type="checkbox"/> INDEPENDENT	
								<input type="checkbox"/> TURBINE STEAM PRESS	
CONTROLLER		MANUFACTURER Shang Hai Yu Quan		LISTED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		START <input checked="" type="checkbox"/> MANUAL		STOP <input checked="" type="checkbox"/> MANUAL	
		SHOP OR SERIAL NO. 19004309		MODEL OR TYPE YAK-2 XFL-8		<input type="checkbox"/> AUTO		<input type="checkbox"/> AUTO	
						<input type="checkbox"/> PRESS DROP		<input type="checkbox"/> WATER FLOW	
								JOCKEY PUMP <input checked="" type="checkbox"/> YES	
								<input type="checkbox"/> NO	
								ON 47 psi	
								OFF psi	
SPEED RPM		DISCHARGE PRESSURE PSI		SUCTION PRESSURE PSI		NET HEAD PSI		STREAMS	
								NO. SIZE PITOT PRESSURE	
								GALLONS PER MINUTE	
								PERCENT OF RATED CAPACITY	
								VOLTS	
								AMPS	

Readings marked (+) in suction column are heads above atmosphere, those marked (-) are lifts.
For vertical shaft pumps omit suction pressure and net head readings.



PUMP ACCEPTANCE TEST DATA

29.85 Cd. 10² JP = Q

PROPERTY OF OSU FPST		TESTED BY		DATE	
ADDRESS FPST Laboratory Building					
CITY Stillwater		STATE OK			

SUBJECT
Pentair Fairbanks Nijhuis Fire Pump

PUMP	SHAFT <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> VERTICAL	MANUFACTURER Fairbanks Nijhuis	APPROVED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	SHOP OR SERIAL NO. 18-2545563	MODEL OR TYPE 4"1823DF
	RATED GPM 750	RATED HEAD-FT. (psi) 120 psi	RATED RPM 3560	SUCTION FROM Water Main	TANK SIZE TANK HEIGHT

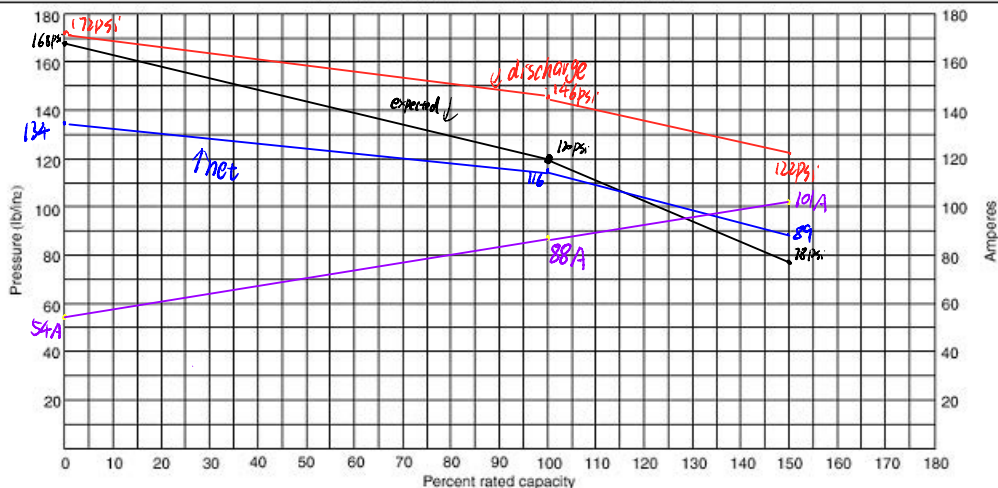
IF VERTICAL TYPE	VERTICAL DIST. DISCH. GAUGE TO WATER LEVEL	STATIC PUMPING FT. FT.	RIGHT- ANGLE GEAR DRIVE FT.	MANUFACTURER MODEL OR TYPE	SHOP OR SERIAL NO.	APPROVED <input type="checkbox"/> YES <input type="checkbox"/> NO
				PERFORMANCE <input type="checkbox"/> SMOOTH <input type="checkbox"/> ROUGH		

DRIVER	MANUFACTURER WEG	APPROVED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	SHOP OR SERIAL NO. 11587734	MODEL OR TYPE 075360P3EFP364TS	RATED H.P. 75	RATED RPM 3555
	<input checked="" type="checkbox"/> ELECTRIC MOTOR 230/460	OPERATING VOLT. 460	RATED FL. AMPS 84.3	AMPS AT 150% 115	PHASE 3	CYCLES 60

CONTROLLER	MANUFACTURER Firetrol	APPROVED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	START <input type="checkbox"/> MANUAL <input checked="" type="checkbox"/> AUTO	<input checked="" type="checkbox"/> PRESS DROP	<input checked="" type="checkbox"/> STOP _____ psi	JOCKEY PUMP <input type="checkbox"/> YES <input type="checkbox"/> NO	ON 130 psi	OFF 185 psi
	SHOP OR SERIAL NO. 819209-01RE	MODEL OR TYPE FTAT000-AM75B	<input type="checkbox"/> WATER FLOW	<input type="checkbox"/> INDEPENDENT	<input type="checkbox"/> TURBINE STEAM PRESS			

SPEED RPM	DISCHARGE PRESSURE PSI	SUCTION PRESSURE PSI	NET HEAD PSI	STREAMS			GALLONS PER MINUTE	PERCENT OF RATED CAPACITY	VOLTS	AMPS
				NO.	SIZE	PITOT PRESSURE				
3583	172	38	134	1	1.75"	12.5	0	0	472	54
3567	146	30	116	12	1.75"	17 psi	750	100%	469	88
3558	122	33	89	123	1.75"	18 psi	1125	150%	468	101

Readings marked (+) in suction column are heads above atmosphere, those marked (-) are lifts.
For vertical shaft pumps omit suction pressure and net head readings.



Plot discharge pressure and net head curves for horizontal shaft pump. For vertical shaft pump, plot discharge pressure curve. For electric-driven pump, plot ampere curve also.