

PLAINTIFF'S EXHIBIT

TEX-141

ASST. PUMPER

WA-TEX 001864

JOB CONTENT

Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper

TRAINEE:

A. BASIC TRAINING

DATE

NAME

1. Principles of Operation - Proportioneers
Automatic Blender - Model PB-2
2. Principles of Operation - "Loss-In-Weight"
Tetraethyl Lead Blender

B. ON-THE-JOB TRAINING

1. Blend Gasolines - In-Line Method
2. Blend Middle Distillate - In-Line Method
3. Blend Avjet Fuels - In-Line Method
4. Draw Samples from Blend Header
5. Draw Samples from Automatic Sampler
6. Take Gauges by Remote Control Console
7. Records and Reports
8. Dye Mixes
9. Petrox to Dock
10. Operate LPG Dryers and Heaters
11. Filter - LPG Coalescer
12. Filters - Salt
13. Filters - Product
14. Dock Line Relief

NOTE: Assistant Pumper is also required to perform all items listed on the Job Content of the Pumper Helper A and B.

Employee Qualified: _____ Date _____
Signed _____ Foreman _____

WA-TEX 001865

JOB BREAKDOWN

A-1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS	KEY POINTS
1. Major Items	The blender consists of control panels, meters and supervisory devices and is designed to reduce batch compounding operations to a completely automatic process.
2. Design	The design of the blender provides for exact pre-setting and control of the component and additive ratios, together with means for quickly adjusting total rate to production requirements without affecting percentage relationship of the respective ingredients.
3. Items of Equipment	The complete blending system includes the following items of equipment: (a) Master Control Panel (b) Component Panels (c) Batch Control (d) Component Pumps (e) Component Meters (f) Component Control Valves (g) Valve Pilots (h) Tally Meter (i) Additive Systems (j) Air Supply (k) Electrical Supply Note: Minor variations in master and component panels for service in gasoline or distillate blenders will be found. The detailed descriptions will apply equally to both, although items will be discussed on the gasoline blenders which will not be found on the distillate blenders.
4. Description of Equipment Blender Control Panels	(a) Master Control Panel has the following equipment:

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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS

KEY POINTS

- (1) Drive Motor - is connected direct to an infinitely variable stepless integrator adjustable from zero to maximum.
- (2) Rate Setting Handwheel - permits selection of blend rates. The adjustment is made through a handwheel which can be set to a 3-figure reading. Should it be found that certain oils cannot be brought to component panels at desired rates or certain formulations require percentages of components not initially considered, the blender can be slowed down to accommodate these conditions.
- (b) Master Switch - Rotary is a multi-position switch with the following settings:
 - (1) "Off" - disconnects all power and supervisory control circuits.
 - (2) "Test" - Energizes the master drive motor and also illuminates the "Drive" green light at the head of the panel. This position permits selection and adjustment of component panels. All panel test runs are made when the master switch is on "Test" position.
 - (3) "Reset" - Permits resetting totalizers to zero after a test has been made. If the blender is correct, the master switch can then be turned to the next position.
 - (4) "Blend" - At this point, all control valves are opened at the same time to the manifold and finished stock passes to the tally meter.
- (c) Indicating Lights and Switches across the top of the panel are a series of lights and switches including:

JOB BREAKDOWN

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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS

KEY POINTS

- (1) "Drive" light is illuminated when blender is on.
 - (2) "Test" (red light) is illuminated when selector switch is in "Test" position.
 - (3) "Blend" (green light) is illuminated when selector switch is in "Blend" position.
 - (4) Limit Reset Button is used to return blender to operating condition after limit switch has stopped operation.
 - (5) TEL Run (Light Green) is illuminated when TEL blender is operating.
 - (6) TEL Ready Light (red) is illuminated prior to start of TEL blender operation and after TEL blender has been tested.
 - (7) TEL selector switch is used to activate TEL blender.
 - (8) Dye Light (green) is illuminated when dye additive unit is on.
 - (9) Bell Cutout Button is used to stop alarm bell from ringing after being activated by limit switches.
 - (10) Sampler Light (green) is illuminated when sampler is operating.
 - (11) Sampler switch is used to activate sampler.
 - (12) Batch Reset Button is used to clear batch totalizer after completion of batch or blend.
 - (13) Dye Pump Switch is used to start dye pump to supply dye solution to blend
 - (14) Eductor Pump Switch is used to start eductor pump for TEL blender.
- (d) Batch Counter
- (1) Five setting knobs are provided to set batches up to as high as 99,990 bbls.
 - (2) An odometer section, resettable to zero after each batch, totalizes the flow during the run.

JOB BREAKDOWN

A-1 Cont.
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS

KEY POINTS

- (e) Totalizers - Several are provided, including:
- (1) Dye - actuated by impulse switch on dye additive unit.
 - (2) TEL Reset - actuated by switch on TEL blender drive, is used to indicate amount of TEL added during a run.
 - (3) TEL - Non-Reset - actuated in parallel with reset totalizer, gives an accumulative total of TEL.
 - (4) Gasoline - consisting of a reset and non-reset section, gives a continuous reading of the finished product thru tally venturi.
- (f) Component Panels - controls are as follow
- (1) Selector Switch - This has two positions for on-off control.
 - (2) Air Controller - The controller is of the anticipatory type with adjustment for sensitivity and automatic reset.
 - (3) Totalizer - This is of the manual reset type with six figure wheels. All totalizers are interconnected with the drive shaft so that they will stop when the master panel switch is turned to "off." Totalizer will show figures last reported until manually reset.
 - (4) Variable Speed Integrator - The principle of the integrator is that of a cam driven connecting rod on the input shaft imparting motion to a connecting link which actuates an over-riding clutch driving the output shaft. A secondary link shifts the position of the connecting link in relation to the driving cam, changing the length of its stroke through a range from zero to maximum thereby changing the speed of the output shaft accordingly.

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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS

KEY POINTS

- (g) Ratio Adjustment for each component - This dial is connected to the secondary integrator.
- (h) Differential - The computer is a purely mechanical device through which is connected the control meter to make it follow the leading speed of the drive. This is accomplished through the application of a differential gear assembly.
- (i) Indicating Lights - One green of the two lights at the top of panel indicates that the blender is running automatically and this light goes off if there is a component or equipment failure. The second light, red, is an indication that high or low pressure is on the system.
- (j) Receiver - In the base of the panel is a receiver selsyn which operates in response to the selsyn transmitter on the meter located on the blending component pad.
- (k) Pump Panel - Pump control panel is provided as a central location for pump switches which are:
 - (1) Pump Run Light - Green
 - (2) Pump Line-Up Light - Red
 - (3) Test Button
 - (4) Pump Selector Switch
- (l) Component Meter
 - (1) The meter is of a positive displacement type, located on the discharge of each component pump. The meter is equipped with a selsyn transmitter for operation of the component controls in back of the control panel in Control Room.
- (m) Component Control Valve
 - (1) This valve is a 2-way diaphragm motor operated valve with plug so arranged that with air on the diaphragm, the liquid will pass thru and into the blend manifold. When no pressure (air) is on the diaphragm, no flow may pass thru the valve.

JOB BREAKDOWN

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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-1 Principles of Operation - Proportioneers
Continuous Automatic Blender Model PB-2

IMPORTANT STEPS	KEY POINTS
	(n) <u>Valve Pilot</u>
	(1) This valve is a 3-part solenoid operated and diverts the flow of air according to the valve position which is determined by the solenoid. The valve operates from the on-off and Limit switches on the component panel.
	(o) <u>Tally Meter</u> - The tally meter is a venturi nozzle installed down stream of the blend manifold and is used to meter the total blend and to provide a differential for operating a transmitter. This transmitter operates a gasoline totalizer on the master panel and also actuates the TEL blender.

JOB BREAKDOWN

A-2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-2 Principles of Operation - "Loss-In-Weight"
Tetraethyl Lead Blender

IMPORTANT STEPS	KEY POINTS
1. General Information.	The "Loss-In-Weight" Tetraethyl Lead Blender is a complete unit for the continuous automatic blending of TEL fluid to untreated gasoline in any dosage to a required maximum per gallon, despite variations in rate of flow of the gasoline being treated or blended The installation includes complete safety devices to insure accurate treatment and safe handling throughout every step of the blending process. Here at Puget Sound Plant there are two (2) complete "Loss-In-Weight" TEL blenders. One for the blending of Premium gasoline and the other for the blending of Regular gasoline.
2. Important Items of Equipment	
(a) Differential Producer	(1) The differential producer consists of a restriction in the line which causes a difference in pressure between the inlet and the throat. (2) The differential pressure operates the chronoflo transmitter. A venturi tube is the differential producer.
(b) Transmitter	(1) The chronoflo transmitter consists essentially of a synchronous motor-driven cam, a rocker bar and magnet, and a cam shoe and its arm. The whole mechanism is housed in a case to which are attached the mercury wells.
(c) Seals	(1) The seals contain the liquid transfer medium and are interposed between the main line and the mercury wells to prevent the blend line gasoline from finding its way into the wells.
(d) Scale Beam Assembly	(1) The "Loss-In-Weight" control scale consists of a double beam scale having a capacity of 60,000 pounds on each beam. To the upper beam has been added a constant pitch, high accuracy poise screw running its entire length.

JOB BREAKDOWN

A-2 Cont.
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-2 Principles of Operation - "Loss-In-Weight"
Tetraethyl Lead Blender

IMPORTANT STEPS

KEY POINTS

- The movable poise on this beam has built into it a split nut operated by a "T" handle to engage the screw so that as the screw is rotated, the poise will be retracted toward the in-board end. The lower beam also has a movable poise with an additional small balancing scale and vernier to enable the operator to bring the scale into exact balance with the weigh tank.
- (2) A magnifying glass and scale enable the operator to check the beam for proper level position.
 - (3) A vernier dial, graduated in 100 parts is provided and the scale can be read in one-pound increments.
 - (4) The poise screw drive mechanism is mounted on the cabinet shelf and consists of a small motor coupled to a variable speed transmission to a parallel shaft speed reducer which, in turn is coupled to an air operated clutch. The output of the clutch is connected through change gears to the input of a second parallel shaft reducer.
 - (5) The outboard end of the scale beam is connected by means of an overthrow link to an air controller mounted in the scale cabinet. The air controller consists of three principal units: a baffle movement unit, a sensitivity adjustment unit and an automatic reset unit.
 - (6) Just below the doors on the cabinet are mounted six switches. These switches are:
 - (a) Master switch which energizes the complete cabinet.
 - (b) Switch 1 which energizes the circuit to the vacuum and air pressure switch.
 - (c) Switch 2 which energizes the high-low alarm circuits.
 - (d) Switch 3 which energizes the chronof transmitter circuits.

JOB BREAKDOWN

A-2 Cont.
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-2 Principles of Operation - "Loss-In-Weight"
Tetraethyl Lead Blender

IMPORTANT STEPS	KEY POINTS
	(e) Switch 4 which energizes the drive motor.
	(f) Switch 5 which energizes the clutch circuits.
	(g) Switch 6 which is used in wash operations when loading the TEL tank to bypass the automatic shutoff action of the control valve. (We do not use this switch, because TEL tank cars unloaded here are returned to DuPont without washing with gasoline.)
	(7) At the head of the control cabinet there are six lights:
	(a) Panel Energized
	(b) Vacuum
	(c) Control Air
	(d) High Beam
	(e) Gaso Rate
	(f) Low Beam
(e) TEL Fluid Control Valve	(a) This valve is a normally-closed, diaphragm motor operated valve with characterized plug and seat so arranged that air pressure is required to open it. This valve will operate so that the flow of TEL fluid will remain at the required rate.
(f) Gasoline Totalizer	(a) This totalizer, mounted on a plate at the left hand side of the cabinet, is a motor driven double counter, one of which may be reset at the beginning of a blend. The counters indicate the amount of gasoline passing through the venturi nozzle.
(g) TEL Totalizer	(a) The two TEL totalizers mounted on the same plate as the gasoline totalizers are mechanical counters chain driven from the poise screw drive. One totalizer is eight figures for a cumulative total and the other is a six figure reset type for batch indication.

JOB BREAKDOWN

A-2 Cont.
Page 4

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: A-2 Principles of Operation - "Loss-In-Weight"
Tetraethyl Lead Blender

IMPORTANT STEPS	KEY POINTS
(h) Solenoid Pilot Valve	(a) This valve is a small three-way valve mounted in the piping manifold on top of the diaphragm TEL control valve. Energized, this pilot valve permits air to enter the diaphragm chamber from the air controller. De-energized, the diaphragm chamber is exhausted to atmosphere causing the control valve to shut. The action of the solenoid valve is controlled from the vacuum switch. When the eductor pulls a sufficient vacuum, contacts in the vacuum switch close, energizing the solenoid.
(i) Vacuum Switch	(a) The vacuum switch consists of an explosion-proof normally open Micro switch with an actuating bellows which holds the switch contacts closed except when there is a vacuum of 6" or more of mercury in the TEL line. This vacuum range is adjustable. (b) The vacuum switch is normally closed when system is operating, but if vacuum fails, the switch will open and the pilot valve will cause the TEL valve to close.
3. Other Items of Equipment	There are a number of other items of equipment tied into the TEL Blender that the operator should acquaint himself with during training and operation of the Blender. Details of such items can be found in Proportioneers, Inc. Booklet, "Loss-In-Weight Tetraethyl Lead Blender."

JOB BREAKDOWN

B-1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-1 Blend Gasolines - In-Line Method
(Premium or Regular)

IMPORTANT STEPS	KEY POINTS
1. General Information	Each important step and key point is shown separately in the following breakdown, but it does not mean that the operator is restricted to take each step in order shown. The operator can save much time by partly or completely lining up for several Important Steps at the same time, especially at the beginning of the blend, because so many of the blender functions are tied together.
2. Receive Blend Order PSP-2	(a) Read Blend Order carefully. (b) Determine product to blend and finished tank number and total amount of blend. (c) Determine component tankage, percentages and quantities of each to use. (d) Note amount of TEL, dye and additives to be used. (e) Note any other information on Blend Order such as sampling and special line-ups.
3. Check Component Stocks Available	(a) Gauge each component tank using console. (b) Record gauges on Form R-61A - Daily Oil Report, also time and Blend number.
4. Check Stock in Finished Tank	(a) Gauge tank to be blended into using console and record opening on R-61A.
5. Line Up Component Tankage	(a) Open component tankage to be used on each blend line suction to Blending Manifold.
6. Line Up Finished Product Tank	(a) Check blend line valves closed on tankage not to be blended into on same system. (b) Open regular blend nozzle on tank to be blended. Shipping line or suction to be closed on tank receiving blend.

JOB BREAKDOWN

E-1

Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: E-1 Blend Gasolines - In-Line Method
(Premium or Regular)

IMPORTANT STEPS	KEY POINTS
7. Conduct Test Run on Blender	(a) Select component panels to be used. (b) Turn master switch from "off" to "test" position. (c) Set master handwheel between 200.0 and 300.0 approximately with <u>MASTER DRIVE RUNNING</u>. <u>Never adjust Master Handwheel unless Master Drive is running.</u> (d) Turn Master switch from "test" to "reset." (e) Make component handwheel settings, using percentages as shown on Blending Order from calibration curve. (f) Zero all totalizers with switches in "off" position. (g) Clear batch counter register to zero, by pushing reset button on master control panel. (h) Set batch counter at 100 bbls. (i) Turn master switch from "reset" to "test". This will start the master drive. When the batch counter has registered 100 bbls. the board will automatically shutdown. (j) Read totalizers on each component panel in use. (k) Determine if amounts registered on each component totalizer check the percentages as shown on the Blend Order. If component panels check $\pm$ or - 0.3%, they will be considered ready for blending. (l) Re-run test run if percentages are greater than $\pm$ or - 0.3%. (m) Set rust inhibitor timer for required amount per 1,000 barrels as shown on Blend Order.
8. Line-Up Component Pump Manifold	(a) Open suction on all component pumps to be used and check all other interconnecting lines on suction closed. (b) Open discharge of each component pump to be used into the Blend Header. (c) Check discharge valves closed into Blend Header on those component pumps which may not be used on blend.

JOB BREAKDOWN

B-1
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-1 Blend Gasolines - In-Line Method
(Premium or Regular)

IMPORTANT STEPS	KEY POINTS
	(d) Open bleeder on each pump to be sure pump-casing is flooded with product.
	(e) Check all pump switches to be used in the "auto" position and check switches in "off" position on pumps not to be used
	(f) Check air "on" to control regulating valves.
	(g) Check air "on" to back pressure regulating valve in Blend Header.
	(h) Take opening meter readings on each component pump to be used. Record on Form PSP-19.
	(i) Check pump lubrication.
	(j) Open the flow and mercury pot valves on the chronoflo.
	(k) Check for leaks such as strainer and meter housings.
9. Set-Up Dye Circulation	(a) Check Dye tank valves "open." (b) Open suction and discharge on pump. (c) Check pump switch in "auto" position.
10. Line Up Automatic Sampler	(a) Drain sampler of any previous product. (b) Close drain valve on sampler and fill to overflowing with fresh water. (c) Make sure the sight glass shows full. (d) Close overflow valves on sampler and close off water supply. (e) Open water displacement valve near bottom of sampler on side. (f) Open suction to sample pump off blend line. (g) Open discharge (excess) from pump into blend line. (h) Check pump switch in "auto" position.
11. Line Up RVP Machine	(a) Note: When suction and discharge lined up to automatic sampler, this also lines up suction and discharge to RVP machine.
12. Line Up Rust Inhibitor Pump	(a) Check suction on Rust Inhibitor storage tank open. (b) Open suction and discharge on pump into blend header.

JOB BREAKDOWN

B-1
Page 4

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-1 Blend Gasolines - In-Line Method
(Premium or Regular)

IMPORTANT STEPS	KEY POINTS
	(c) Open 1" block valve on additive discharge on vertical bank running to blend header.
13. Line Up TEL Eductor System	(a) Open suction and discharge valves on vertical bank "to" and "from" blend header. (b) Check suction valve from Tank #30 closed on Eductor Pump and also 1" DMD valve closed. (c) Open suction and discharge blend valves on pump. (d) Check pump switch in auto position. (e) Check pump lubrication. (f) Open valves 9 and 10 on Proportioners Eductor system. (g) Open Eductor By-Pass Valve one-third. (h) Open Valve 2P. (i) Take opening reading on weigh scales - upper and lower and small beam and record weight on Blend Order, B/P Operations sheet and Log Book. (j) Turn all cabinet switches to "on" position except the wash blend switch - which will be in the "Blend" position. (k) Set TEL vernier in cabinet, with drive shaft running, to same setting as shown on Blend Order.
14. Set Up Component and Master Panels to Start Blend	(a) Start Dye pump by turning switch to "on" position on master panel. (b) Zero batch counter with master switch in "reset" position. (c) Set batch counter for required barrels of total blend. (d) Zero all totalizers on component panels. (e) Set air controller pointers to control "position" on each component panel, by turning clutch so that screw on assembly reads "4 o'clock." (f) Turn panel selector switches to "on" position of each component panel to be used.

JOB BREAKDOWN

B-1
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-1 Blend Gasoline - In-Line Method
(Premium or Regular)

IMPORTANT STEPS	KEY POINTS
	(g) Turn pump selector switches to "on" position of each component pump to be used.
	(h) Zero TEL, gasoline rate and Dye totalizers on master panel.
	(i) Turn selector switches to "on" position for TEL selector and TEL pump switch.
	(j) Turn master switch from "reset" to "blend" -- at this time component products will start discharging into blend header.
	(k) Adjust master handwheel setting to 200.0 Max. This will be at low rate and will tend to eliminate any undue surge on controllers and chronoflo.
	(l) Open No. 1 valve on top of TEL weigh tank. TEL should start entering blend.
	(m) Check all air controllers on board and see that they are lining out.
	(n) Check all pump suction and discharge pressures.
	(o) Check by-pass on TEL Eductor and adjust to proper vacuum - 10 to 15 inches.
	(p) Run blend and check out all controllers, rates, etc. By this time, blend header should be cleared of any product from previous blend.
	(q) Start rust inhibitor pump and RVP machine.
	(r) Turn sampler selector switch to "on" position.
	Note: At this time, blend should be running normal. If alarm sounds and trouble is experienced, determine nature and correct. Some of the trouble spots to look for: Plugged strainer Meter not turning Improper line-up TEL not entering blend due to vacuum switch not functioning properly, insufficient vacuum and chronoflo not putting out proper signal to TEL cabinet and loss of suction on Butane booster pump especially in summer.

JOB BREAKDOWN

B-1
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PLANT: Puget Sound
DEPARTMENT: RF&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-1 Blend Gasolines - In-Line Method
(Premium or Regular)

IMPORTANT STEPS

KEY POINTS

- (s) Start to increase master handwheel setting, not to exceed 1200 bph with blend running normal, when TEL is required. On blends not requiring TEL, open master handwheel as high as controls on each component will allow.
- (t) Note sample requirements on Blend Order.
- (u) Adjust blend component percentages as advised to meet required specifications.
- (v) Read totalizers, batch counter, TEL scale, RVP recorder, gauge component and blending tank every 4 hours while blend is in progress and record on Form PSP-19. From these readings it can be determined if components are being correctly blended on a percentage basis.
- (w) Blend to completion. When batch counter and register show the same figures, the blender will shutdown automatically but will not stop pumps.
- (x) Turn master switch from "blend" to "off."
- (y) Push stop button Butane booster pump - control on console.
- (z) Stop rust inhibitor pump.
- (aa) Stop RVP machine.
- (bb) Turn all switches on master and component panels to "off" position.
- (cc) Close off blending, eductor pump and dye pump manifolds.
- (dd) Close off component tankage.
- (ee) Close off blend line on finished tank if not necessary to recirculate.
- (ff) Take closing readings on meters, totalizers, TEL weigh scale and record on PSP-19 and Blend Order PSP-2.
- (gg) Close gauge component, dye, rust inhibitor and shipping tanks and record on Form R-61A.
- (hh) Record totalizer readings on R-61A when blending at 5:00 A.M. stock and when blend completed.

JOB BREAKDOWN

E-2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS	KEY POINTS
1. General Information	Each Important Step and Key Point is shown separately in the following breakdown, but it does not mean that the operator is restricted to take each step in the order shown. The operator can save much time by partly or completely lining up for several Important Steps at the same time, especially at the beginning of the Blend, because so many of the blender functions are tied together.
2. Receive Blend Order Form PSP-2	(a) Read Blend Order carefully. (b) Determine product to blend, finished tank number and total amount of blend. (c) Determine component tankage, percentages and quantities of each to use. (d) Note amount of Rust Inhibitor or other additives to be used. (e) Note any other information on Blend Order such as sampling and special line ups.
3. Check Component Stocks Available	(a) Gauge each component tank using console. (b) Record gauges, time and blend number on Daily Oil Report - Form R-61A.
4. Check Stock In Finished Tank	(a) Gauge tank to be blended into using console and record opening on R-61A.
5. Line Up Component Tankage	(a) Open component tankage to be used on each blend line suction to Blending Manifold.
6. Line Up Finished Product Tank	(a) Check blend line valves "closed" on tankage not to be blended into on same system. Note: At present there is only one tank for each grade of middle distillate and each grade has its own separate blend line, however, in the future our finished storage may change whereby two tanks could be on same blend line.

JOB BREAKDOWN

B-2
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS	KEY POINTS
	(b) Open regular blend nozzle on tank to be blended, if gauge is below 7'0" with jet nozzle closed.
	(c) Open jet blend nozzle on tank to be blended if gauge is more than 7'0" with regular nozzle closed.
	Note: The suction or shipping line valve is to be left open on 448 Diesel and 431 Burner Oil while blending into this tankage unless otherwise advised, as we blend and ship these two products at the same time.
	When blending 454 Diesel, the suction valve is to be closed on this tankage as no shipments are made until tank checked by Laboratory.
7. Conduct Test-Run on Blender	(a) Select component panels to be used. (b) Turn master switch from "off" to "test" position. (c) Adjust master handwheel between 200.0 and 300.0 approximately, lock in wheel with master drive running -- <u>never adjust master handwheel unless master drive is running.</u> (d) Turn master switch from "test" to "reset". (e) Make component handwheel settings, using percentages as shown on the Blend Order from calibration curve and lock in handwheels. (f) Zero all totalizers with switches in "off" position. (g) Clear Batch Counter Register to zero, by pushing reset button on master control panel. (h) Set Batch Counter at 100 barrels. (i) Turn master switch from "reset" to "test." This will start the master drive. When the register on the Batch Counter Register reads 100 barrels, the board will automatically shut down.

JOB BREAKDOWN

B-2
Page 3

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS	KEY POINTS
	(j) Read totalizers on each component panel in use.
	(k) Determine if amounts registered on each component totalizer check the percentages as shown on the Blend Order. If components check / or - 0.3%, they will be considered ready for blending.
	(l) Re-run test run if percentages are greater than / or - 0.3% as shown on Blend Order.
	(m) Set Rust Inhibitor timer for required amount per 1,000 barrels as shown on Blend Order.
8. Line-Up Component Pump Manifold	(a) Open suction on all component pumps to be used and check all other interconnecting lines on suction closed.
	(b) Open discharge of each component pump to be used into the Blend Header.
	(c) Check discharge valves closed into Blend Header on those component pumps which may not be used during blend.
	(d) Open bleeder on each pump, to be sure casing is flooded with product.
	(e) Check all pump switches to be used in "auto" position and check switches in "off" position on pumps not to be used.
	(f) Check air "on" to control regulating valves.
	(g) Take opening meter readings on discharge of each component pump to be used and record on Form PSP-19.
	(h) Check pump lubrication.
	(i) Check for leaks, such as, strainer and meter housings.
	(j) Check all pump bleeders closed.
9. Line-Up Rust Inhibitor Pump	(a) Check suction on Rust Inhibitor storage tank open.
	(b) Open suction and discharge on pump into Blend Header.

JOB BREAKDOWN

B-2
Page 4

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS	KEY POINTS
10. Line-Up Salt Filter	(a) Open bottom drawoff to sewer on salt filter just long enough to check for free water and draw off if necessary. (b) Check inlet and outlet valves open on salt filter. Note: When blending Diesel, use the West filter and when blending Burner Oil, use the East filter. (c) Open Blend Line Header valve and close bypass at East end steel walkway in blending component area. (d) Check all run down lines closed on discharge of Salt Filter Header, with run down valve open on line to tank that is to be blended on East end steel walkway.
11. Set Up Component and Master Panels to Start Blend	(a) Zero batch counter register with master switch in "reset" position. (b) Set batch counter for required barrels of total blend. (c) Zero all totalizers on component panels. (d) Set air controller pointers to control "position" on each component panel, by turning clutch so that screw on assembly reads "4 o'clock." (e) Turn panel selector switches to "on" position of each component panel to be used. (f) Turn pump selector switches to "on" position of each component pump to be used. (g) Turn master switch from "reset" to "blend" at this time component products will start discharging into Blend Header. (h) Start Rust Inhibitor pump. (i) Adjust master handwheel setting at 200.0 maximum. This will be at low rate and will tend to eliminate any undue surge on transmitters and controllers. (j) Check all air controllers on board and see that they are lining out.

JOB BREAKDOWN

B-2
Page 5

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS	KEY POINTS
	(k) Check all pump suction and discharge pressures and check meter counters (registers) to determine if they are turning properly.
	(l) Increase master handwheel setting to maximum that will allow each pump to stay in control on proper percentage basis. Note: At this time, blend should be running normal. If alarm sounds and trouble is experienced, determine nature and correct. Some of the trouble spots to look for: Plugged Strainer Meter not turning Improper line-up
	(m) Check sample requirements on Blend Order and follow through. Note: Automatic sampler is installed on Middle Distillate Blend Header, but it is not used. All required blended samples are taken in 1-qt. sample bottles directly off Blend Header after product has passed thru Salt Filter.
	(n) Adjust blend component percentages as advised to meet required specifications.
	(o) Read totalizers, batch counter, gauge component and blending tank every 4 hours while blend is in progress and record on Form PSP-19. From these readings, it can be determined if components are being correctly blended on a percentage basis.
	(p) Blend to completion. When Batch Counter and register show the same figures, the Blender will shutdown automatically, but component pumps will continue to run.
	(q) Turn master switch from "blend" to "off." This will stop component pumps.
	(r) Stop Rust Inhibitor Pump.
	(s) Turn all switches on master and component panels to "off" position.
	(t) Close component pump manifolds.
	(u) Close off blend line on finished tank if not required to recirculate.

JOB BREAKDOWN

B-2
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-2 Blend Middle Distillate - In-Line Method
(448 Diesel - 454 Diesel and 431 Burner Oil)

IMPORTANT STEPS

KEY POINTS

- (v) Take closing readings on meters and totalizers and record on PSP-19 and Blend Order PSP-2.
- (w) Close gauge component rust inhibitor and finished tank and record on R-61A.
- (x) Record totalizer readings on R-61A when blending at 5:00 A.M. stock and when blend completed.

Finished Blend Diesel - Burner.

JOB BREAKDOWN

B-3
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-3 Blend AvJet Fuels - In-Line Method
(Avjet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
1. General Information	Each Important Step and Key Point is shown separately in the following breakdown, but it does not mean that the operator is restricted to take each step in the order shown. The operator can save much time by partly or completely lining up for several Important Steps at the same time, especially at the beginning of the blend, because so many of the Blender functions are tied together.
2. Receive Blend Order Form PSP-2	(a) Read Blend Order carefully. (b) Determine product to blend, finished tank number and total amount of blend. (c) Determine component tankage, percentages and quantities of each to use. Note: AvJet Fuels are blended without the addition of additives. (d) Note any other information on Blend Order such as sampling and special line-ups.
3. Check Component Stocks	(a) Gauge each component tank to be used by console to determine if enough stock is available for blend. (b) Record gauges, time and Blend Number on Daily Oil Report - Form R-61A.
4. Check Stock In Finished Tank	(a) Gauge tank to be blended into using console and record opening on R-61A.
5. Line Up Component Tankage	(a) Open component tankage to be used on each blend line suction to Blending Manifold.
6. Line Up Finished Product Tank	(a) Check blend line valves closed on tankage not to be blended into on same operation. (b) Open regular blend nozzle on tank to be blended, if gauge is below 10'0" with Jet nozzle and shipping line closed.

JOB BREAKDOWN

B-3
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-3 Blend AvJet Fuels - In-Line Method
(AvJet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
	(c) Open Jet blend nozzle on tank to be blended if gauge is 10'0" or more with regular nozzle and shipping line closed. Note: No shipment of AvJet to be made while blending into tankage, <u>unless authorized.</u>
7. Conduct Test-Run on Blender	(a) Select component panels to be used. (b) Turn master switch from "off" to "test" position. (c) Adjust master handwheel between 300.0 and 350.0 approximately and lock in wheel with <u>Master Drive Running. Never adjust Master Handwheel unless Master Drive is running.</u> (d) Turn master switch from "test" to "reset." (e) Make component handwheel settings, using percentages as shown on the Blend Order from calibration curve and lock in handwheels. Note: The AvJet Blender Board is so adjusted that it can be set to run at 150% if the components to be blended will not over-range the pumps and meters. The 150% range will vary with each Blend Order, listing percent of each component. (f) Zero all totalizers with switches in "off" position. (g) Clear Batch Counter Register to zero, by pushing reset button on master control panel. (h) Set Batch Counter at 100 barrels. (i) Turn master switch from "reset" to "test." This will start the master drive. When the Batch Counter Register reads 100 barrels, the board will automatically shut down. (j) Read totalizers on each component panel in use. (k) Determine if amounts registered on each component totalizer check the percentage as shown on Blend Order. If components check / or - 0.3%, they will be considered ready for blending.

JOB BREAKDOWN

B-3
Page 3

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-3 Blend Avjet Fuels - In-Line Method
(Avjet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
	(1) Re-run test-run if percentages are greater than / or - 0.3% as shown on Blend Order.
8. Line-Up Component Pump Manifold	(a) Open suction on all component pumps to be used and check all other interconnecting lines on suction closed. (b) Open discharge of each component pump to be used into the Blend Header. (c) Check discharge closed off blend header on product not to be blended and open discharge valve of blend header on product to be blended. Note; Avjet and Burner Oil discharge into a common Blend Header. Just beyond the Blend Header proper this manifold "ties" and Avjet runs to a separate run down line to tankage and Burner Oil runs to a separate run down line to tankage. The two block valves mentioned in item "c" are to be checked closely. (d) Check discharge valves closed into Blend Header on those component pumps which may not be used during blend. (e) Open bleeder on each pump to be sure casing is flooded with product. (f) Check all pump switches to be used in "auto" position and check switches in "off" position on pumps not to be used. (g) Check air "on" to control regulating valves. (h) Take opening meter readings on discharge of each component pump to be used and record on Form PSP-19 and PSP-2. (i) Check pump lubrication. (j) Check for leaks, such as strainer and meter housings.

JOB BREAKDOWN

B-3
Page 4

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-3 Blend Avjet Fuels - In-Line Method
(Avjet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
9. Set Up Component and Master Panels to Start Blend	(k) Check all pump bleeders closed. (a) Zero Batch Counter Register with master switch in "reset" position. (b) Set Batch Counter for required barrels on total blend. (c) Zero all totalizers on component panels. (d) Set air controller pointers to control "position" on each component panel, by turning clutch so that screw on assembly reads "4 o'clock". (e) Turn panel selector switches to "on" position of each component panel to be used. (f) Turn pump selector switch to "on" position of each component pump to be used. (g) Turn master switch from "reset" to "blend". At this time, component products will start discharging into Blend Header. (h) On Burner Oil blends, line up Rust Inhibitor pump. (i) Adjust master handwheel setting at 300.0 max. This will be at low rate and will tend to eliminate any undue surge on transmitters and controllers. Blend rate not to exceed 400 bbls. per hour. (j) Check all pump suction and discharge pressures and check meter counters (registers) to determine if they are turning properly.

JOB BREAKDOWN

B-3
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-3 Blend Avjet Fuels - In-Line Method
(Avjet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
9. Set Up Component and Master Panels to Start Blend (Continued)	(k) Increase master handwheel setting to max. that will allow each pump to stay in control on proper percentage basis. Note: At this time blend should be running normal. If alarm sounds and trouble is experienced, determine nature and correct. Some of the trouble spots to look for: Plugged strainer Meter not turning Improper Line-up (l) Check sample requirements on Blend Order and follow through. Note: Automatic sampler is installed on Avjet Blend Header Line, but it is not used. At this writing, all required blended samples are taken in 1-qt. sample bottles directly off Blend Header. (m) Adjust blend component percentages as advised to meet required specifications. (n) Read totalizers, batch counter, gauge component and blending tank every four hours while blend is in progress and record on Form PSP-19. From these readings it can be determined if components are being correctly blended on a percentage basis. (o) Blend to completion. When batch counter and register show the same figures, the Blender will shut down automatically, but component pumps will continue to run. (p) Turn master switch from "blend" to "off" position. This will stop component pumps.

JOB BREAKDOWN

B-3
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PLANT: Puget Sound
DEPARTMENT: RP&S-Docks-Racks
CLASSIFICATION: Assistant Pumper
OPERATION: B-5 Blend Avjet Fuels - In-Line Method
(Avjet and Burner Oil)

IMPORTANT STEPS	KEY POINTS
9. Set Up Component and Master Panels to Start Blend (Continued)	(q) Turn all switches on master and component panels to "off" position. (r) Close component pump manifolds. (s) Close off blend line on finished tank. (t) Take closing readings on meters and totalizers and record on PSP-19 and Blend Order Form PSP-2. (u) Close gauge component and finished tankage and record on Form R-61A. (v) Record totalizer readings on R-61A when blending at 5:00 A.M. stock and when blend completed.

JOB BREAKDOWN

B-4

Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-4 Draw Samples from Blend Header

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) Blend line samples are drawn from a sample header located east of the sample hut on 100 ft. pipeway at Blending Plant.
2. Sampling	(a) Clear sample lines by running to drain. (b) Sample hose should be inserted to the bottom of sample bottle. (c) Draw sample slowly. (d) If sample lines are so equipped, use rubber stopper. This prevents most vapors from escaping from sample bottle. (e) Put cork or stopper in bottle immediately.
3. Component Pump Sampling	(a) Each component pump is equipped with a 1/4" sample connection. (b) Take samples slowly. (c) Cork bottle immediately.
4. Bomb Samples	(a) Are taken from Butane component pumps upon request. (b) A 1/4" sample connection is installed on each pump. Sample bombs may be screwed directly to fitting or a flex hose may be used. (c) Bomb should be in an upright position, venting at top. (d) Open both valves on bomb. (e) Open line valves slowly.

JOB BREAKDOWN

B-4
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-4 Draw Samples from Blend Header

IMPORTANT STEPS	KEY POINTS
4. Bomb Samples (Continued)	(f) When liquid butane appears from top of bomb, close top valve first, then bottom bomb valve. (g) Close line valve and remove sample bomb slowly.

JOB BREAKDOWN

B-5

PLANT: Puget Sound Plant
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-5 Draw Samples from Automatic Sampler

IMPORTANT STEPS	KEY POINTS
1. Line Up Automatic Sampler - S/C and F/C Blends	(a) Drain Sampler. (b) Fill Sampler to overflowing with fresh water. (c) Close overflow valve, sight glass valve, and water supply. (d) Open water displacement valve. (e) Make sure sight glass shows full. (f) Open suction and discharge valves to the blend line.
2. Start Sampler	(a) Follow instructions on blend order for starting of sampler and when samples are to be drawn, usually when sampler is full or once per shift; 5 AM, 1 PM, and 9 PM.
3. Draw Sample	(a) Close water displacement valves on side of sampler. (b) Open vent. (c) Slowly add water to sampler. (d) Open valve on top of sight glass to plastic hose. (e) Clear water from line. Then insert hose to the bottom of sample bottle, using attached rubber stopper to contain vapors in sample. (f) Take required number of samples. (g) Put stopper in sample bottles immediately.
4. Refill Sampler	(a) Increase water flow and overflow with water. (b) Follow line up procedures.

JOB BREAKDOWN

B-6
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-6 Take Gauges by Remote Control Console

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) Most all of our tanks are equipped with a float operated level gauge, with a ground reading gauge on the side of the tank. A transmitter on the ground reading gauge transmits the product level to the console located in the Blending Plant Control Room. This is referred to as the VAREC gauge. Two thermometers are on most tanks. One for local dial reading, the other is used for transmitting the temperature to the console in the same manner as gauges.
2. Tank Gauging	(a) Dial desired tank number - slowly. (b) In approximately 6 to 8 seconds, tank number and tank gauge will show in console window. (c) Gauge will remain for approximately 10 seconds, then clear. Note: Reset button may be used to clear gauge from console if desired. If wrong tank is dialed - wait until digital pulse code has completed its cycle before using reset button.
3. Tank Temperature	(a) Dial desired tank. (b) Wait for gauge to appear. (c) Press temperature button. (d) Pulse code will cycle as in gauging and tank number and temperature will appear in console window. Reset button - Follow instructions on gauging procedures.

JOB BREAKDOWN

B-6
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-6 Take Gauges by Remote Control Console

IMPORTANT STEPS	KEY POINTS
4. Scan Operation General Information	(a) The tank farm is divided into three areas. Tankage in any given area is shown in R-295 A, with a few exceptions. Area selector switch is located to the left of tank dial. Scan will begin with first tank in the selected area. It will give tank gauge, then temperature and then go on to the next tank gauge and temperature, etc., through the entire group of tanks in that area.
5. Start Scan	(a) Select area to be scanned. (b) Press "Scan Start" button.
6. Stop Scan	(a) While a gauge or temperature is showing on console window, press "Scan Stop" button. Console will continue to scan selected area until "Stop Scan" button is pushed.

JOB BREAKDOWN

B-7
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-7 Records and Reports

IMPORTANT STEPS

KEY POINTS

R-295-A - Gauges and Pumping Record

1. General Information (a) R-295-A is to be made out daily. Original and four copies. Gauges are to be taken at 8-hour intervals - 5 AM, 1 PM, 9 PM. Stock gauges are to be taken on moving tanks as close to 5 AM as possible. Standing tanks can be gauged and temperatures taken before this time.
2. Gauge Tanks - 5 AM (a) Dial desired tank.
(b) Record gauge and temperature on R-295-A.
(c) Check gauge with previous gauges to make certain tank is gaining or losing as operations warrant. A standing tank should only change due to temperature change.

Any unusual product movement should be noted. If necessary, the Varec should be checked on the tank and a hand tape gauge may be required.

(d) If hand tape gauge or Varec gauge is recorded on R-295-A, such should be identified by an (H) or (V) after the gauge.
3. BS&W or Water Gauge (a) Are entered on R-295 the first of each month and carried forward each day until a new gauge is taken.
(b) Water gauges are taken by hand tape, and must be entered in the "Black Hand Book." Before a change can be made on R-295-A, the time and date must be entered in the "Black Hand Book."

JOB BREAKDOWN

B-7
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-7 Records and Reports

IMPORTANT STEPS	KEY POINTS
4. Temperatures	(a) Are recorded on R-295-A at 5 AM. (b) Crude tank temperatures are recorded at 5AM, 1 PM and 9 PM. At various times, requests will be made to record temperatures of other tanks at gauging time.
5. "To" and "From" Columns	(a) These columns will indicate flow of product "to" or "from" tankage and where. (b) When a change is made in tankage lineup, the time should be noted in these columns.
6. Disposition of R-295-A Form and Copies	(a) Original to Stock & Shipping Dept. (b) 2 carbon copies to Shift Foreman's Office. (c) 1 carbon copy to RP&S Office. (d) 1 carbon copy to Blending Plant file.
7. Notify Units of Tank Gauges	(a) Daily - After 5 AM gauging has been completed, phone the VPS, FCCU, HTU and Alky. Give them the 5 AM tank gauges they require.

R-61-A - Daily Oil Report

8. General Information (a) R-61-A is to be made out with Original and two copies. We usually make out three sets to cover the following work in the RP&S Dept.:
1. Blending
 2. Shipping
 3. Transfers.
- Original to Stock Dept., 1 copy to RP&S Office, and 1 copy to Blending Plant file.

JOB BREAKDOWN

B-7
Page 3

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-7 Records and Reports

IMPORTANT STEPS	KEY POINTS
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R-61-A - Daily Oil Report (Continued)

9. Blending R-61-A
- (a) Enter starting blends. In left column, list component tanks and additive tanks. Show opening gauges and temperatures. Show finished product tank in right column. Indicate blend number, gauge, temperature, and time blend started.
 - (b) At 5 AM, record the blend panel reading for each component tank used in the blend. Record gauges on additives injected. Show finished tank gauge and temperature.
 - (c) Completed blends are to be handled the same as for 5 AM gauging.
10. In-Line Blending
- (a) Starting - Same as starting regular blend except log the opening component blend meter readings.
 - (b) Finish - Same as 5 AM gauging except log the closing component blend meter readings.
11. Shipping
- (a) Record opening tank gauge and temperature. (If hand tape gauge is recorded, identify as such.) For vessel being loaded, record time gauges are taken and time actual loading begins. Notify Truck Rack.
 - (b) Periodic check gauges are to be made on all tanks being shipped and this information is to be given to the point of delivery.
- Only in this way can you determine rate of flow and establish loading time.

JOB BREAKDOWN

B-7
Page 4

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-7 Records and Reports

IMPORTANT STEPS	KEY POINTS
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R-61-A - Daily Oil Report (Continued)

- | | |
|---|--|
| 11. Shipping
(Continued) | (c) Closing--Record openings on every other line on the sheet. Closing gauges are to be recorded directly below opening gauges. Times are important, i.e. gauging time, and shut down loading time. |
| | (d) 5 AM gauges are to be recorded daily. Should a vessel or barge finish loading before 8 AM, it is permissible to hold this R-61-A until shipment is completed. Enter closing gauges, and forward original to Stock Dept. before 8 AM. |
| 12. TransMountain,
Olympic Pipeline
and Transfers | (a) T/M and OPL are to be handled the same as shipping. Record opening and closing gauges. |
| | (b) All transfers of products between tanks are to be recorded showing tank number, gauges, temperature, and times. |

R-67-A - Texaco Inc. Receipt

- | | |
|-------------------------|---|
| 13. General Information | (a) To be filled out for deliveries of bunker fuel to ships and spent caustic to N.W. Petrochemical Plant. |
| 14. Ship Fueling | (a) Fill in heading, plus gravity, flash, and viscosity of this fuel. |
| | (b) Record opening gauge, temperature, and gross barrels. Record closing gauge, temperature and gross barrels. |
| | (c) When personnel are available in the Shipping Dept., they will compute the net barrels. At other times, we must compute net barrels. |

JOB BREAKDOWN

B-7
Page 5

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-7 Records and Reports

IMPORTANT STEPS	KEY POINTS
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R-67-A - Texaco Inc. Receipt (Continued)

- | | |
|---------------------------------|--|
| 14. Ship Fueling
(Continued) | (d) Send all copies to the dock for Chief Engineer's signature and give him yellow copy. All other copies go to the Shipping Dept. |
| 15. N.W. Petrochemical | (a) Spent caustic transfers from Tank 303 to N.W. Petrochemical are covered by R-67-A. Fill in heading, opening and closing tank gauges, temperature and gross barrels.

(b) All copies are to be sent to the Shipping Department. |

JOB BREAKDOWN

B-8
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-8 Dye Mixes

IMPORTANT STEPS	KEY POINTS
1. General	(a) We are now using Ethyl Corporation's Red-B liquid and yellow liquid dyes. The dyes come in 240 lb. barrels. Refer to RP&S Additive Manual for instructions on mix composition. Dye mixes can be made while circulating a dye tank, or it is more common to inject the dye while filling the dye tank with Hvy. Plat. or Lt. Plat. T.M.D. is also mixed in dye tanks to provide the amount of T.M.D. required in gasoline blends.
2. Prepare to make Red Dye Mix in Tank 66	(a) Gauge Tank 66 and record on R-61-A. Compute the amount of Hvy. Plat. required to fill tank 66. (b) Using Additive Instruction Manual, determine amount of red dye and T.M.D. to be used. (c) Line up red dye pump, 24N-GM11, to take suction on Tank 30, Hvy. Platformate. Then discharge to Tank 66 through dye eductor in dye mix room.
3. Make Mix	(a) Start Pump. (b) Check Tank 66 gauge for increase. (c) Close eductor bypass valve in dye mix room. (d) Weigh red dye barrel and determine the necessary closing scale weight. (e) Slowly open valve to eductor hose; make sure you have a vacuum. (f) Draw desired amount of dye by scale weight.

JOB BREAKDOWN

B-8
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-8 Dye Mixes

IMPORTANT STEPS	KEY POINTS
4. Adding T.M.D. to Mix	(a) Weigh T.M.D. barrel and determine the closing scale weight. (b) Open valve to eductor hose. (c) Close valve when the desired amount of T.M.D. has been injected. (d) Open eductor bypass valve.
5. Completing Mix	(a) Check Tank 66 gauge level. Fill tank to 23'-0". Watch closely, tank fills rapidly. (b) Shut down pump. (c) Close Tank 30, Hvy. Plat. suction to pump. (d) Open Tank 66 to suction. (e) Start pump for circulating to Tank 66. Mix for two hours. (f) Catch 1-quart sample for color. Send to the Laboratory properly tagged.
6. Record on R-61-A	(a) Closing gauge of Tank 66. (b) Number pounds red dye used. (c) Number pounds T.M.D. used. (d) Record same information in Blending Plant dye mix log book.
7. Copper Dye to Tank 67	(a) Use pump 24N-GM10 and Light Platformate Tank 24. (b) Follow red dye procedure except we use both red and yellow dye to make copper color. Refer to Additive Instruction Book for "mix".

JOB BREAKDOWN

B-8
Page 3

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-8 Dye Mixes

IMPORTANT STEPS	KEY POINTS
8. Yellow Dye to Tank 64	(a) Use red dye pump 24N-GM11 and Tank 30 Hvy. Plat. (b) Be sure to close valves on Tank 66 and pump valves to Tank 66, then open suction to Tank 64 and pump discharge to Tank 64. (c) Follow red dye procedure. Refer to Additive Instruction Book for "mix".

JOB BREAKDOWN

B-9
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-9 Petrox to Dock

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) Marine shipments of Fire Chief and Sky Chief gasoline accounts in Alaska, Port Townsend and Port Angeles require Petrox. Small shipments are handled from the dock Petrox trailer. When large shipments are made, Petrox is injected at the dock to treat the gasoline which is already in the lines. The balance of the cargo is treated from the Blending Plant.
2. Prepare to Load S/C with Petrox	(a) Determine the amount of Petrox to be used. (Check Additive Instruction Book.) Gauge tank and enter gauge on R-61-A. (b) Line up pump 24N-GM12 through S/C Petrox meter. (c) Turn pump switch to automatic. (d) Set meter stop. Meter injects 4 gallons Petrox for each gallon shown.
3. Loading	(a) Start loading the ship or barge. The dockman will inject approximately 788 gallons of Petrox from the trailer. (b) Start Petrox pump and meter. (c) Check frequently. Compare the Petrox injection rate to the gasoline loading rate. (d) Have all Petrox in the line before the last 2800 bbls. of gasoline is pumped into the dock line.

JOB BREAKDOWN

B-9
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-9 Petrox to Dock

IMPORTANT STEPS	KEY POINTS
4. Finish Loading	(a) Shut down pump. Pump will not shut off automatically. (b) Gauge Petrox tank and record the gauge on R-67-A.
5. Load F/C with Petrox Added	(a) Determine the amount of Petrox to be used. (b) Gauge tank and record the opening gauge on R-61-A. (c) Line up pump 24N-GM25 through F/C Petrox meter. (Balance of procedure same as S/C Petrox loading.)

JOB BREAKDOWN

B-10
Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-10 Operate LPG Dryers and Heaters

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) There are no alarms to indicate that an LPG dryer is spent or "wet". However, a dryer will normally last in excess of two weeks before regeneration is required. To insure constant production of dry LPG, the dryers will be switched every two weeks and the dryer taken out of service will be regenerated. This schedule will also be governed by the availability of Cascade Natural Gas and the dryness of the LPG in storage. Normal LPG flow through a dryer is in the bottom and out the top.
2. Changing Dryers	(a) Open LPG inlet and outlet valves to the recently regenerated dryer. (b) Close LPG inlet and outlet valves to the spent wet dryer.
3. Prepare Dryer for Regeneration	(a) Notify Alky-Poly that you will regenerate a dryer. (b) Open a flow of Cascade Gas through the heater and into the top of the dryer. (c) Push liquid LPG out the bottom LPG valve into the dryer in service. (d) Close the bottom LPG valve.
4. Start Regeneration	(a) Line up Cascade Gas flow from bottom of dryer back through cooler to fuel gas. (b) Regulate gas flow to approximately 7 psi on gauge. (c) Start water through the cooler. (d) Turn on electric heater.

JOB BREAKDOWN

B-10
Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-10 Operate LPG Dryers and Heaters

IMPORTANT STEPS	KEY POINTS
4. Start Regeneration (Continued)	(e) Plug in recording instruments in B/P Control Room. (f) Record starting time and which dryer is being regenerated in the log book. (g) Notify Shift Foreman Cascade Gas is being used.
5. Regeneration Time	(a) 5 to 6 hours time is required to bring temperature up to 375-400° F. (b) Regenerate for 16 hours at this temperature. (This may vary due to condition of dryer and allotment of natural gas.) The heater is equipped with high temperature and low flow alarms.
6. Regeneration Finished	(a) Turn off electricity to heater. (b) When vessel cools to 100-125°, the regeneration cycle is completed. (c) Close all valves on the Cascade Natural Gas line up. (d) Turn off water to cooler. (e) Notify Shift Foreman that RP&S is through using Natural Gas.

JOB BREAKDOWN

B-11

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-11 Filter - LPG Coalescer

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) Coalescer: Fram-Warner Lewis located North of LPG Dryers and upstream from LPG Dryer.
2. Purpose	(a) Will collect excess water and impurities from wet LPG liquid before flow enters LPG Dryer.
3. Daily Routine	(a) Coalescer is equipped with an automatic water drawoff. It should be checked each shift to determine if it is working properly. If frost forms on the vent or drain line this indicates the automatic water drawoff is not working properly. Water will have to be drained from the coalescer manually until repairs are made on automatic water drawoff. The coalescer is also equipped with a high water level alarm.

JOB BREAKDOWN

B-12

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-12 Filters - Salt

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) After determining that the Diesel Blend component pumps are routed through the salt filter in service, line up Diesel header to finished tankage. The second salt filter is held in reserve.
2. Location	(a) Southeast corner of Blending Plant area.
3. Purpose	(a) The salt removes moisture and cleans and brightens the finished product.
4. Daily Routine	(a) Draw all water from bottom of filter once every shift.

WARNING: BYPASS SALT FILTERS -

1. When circulating Diesel tanks.
2. Anytime blend line pressure exceeds 80 psig. The PRV relieves to the impounding basin North of Blending Plant.

JOB BREAKDOWN

B-13

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-13 Filters - Product

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) At the South end of the shipping manifold, filters are installed in the Fire Chief, Sky Chief, Burner Oil and 448 Diesel lines to the Truck Rack. The low lead gasoline filter is located East of the Loading Rack. Two Avjet filters at the Dock are not in use.
2. Daily Routine	(a) Daily between 6 and 8 AM - 1. Check filters for water. 2. Check pressure drop across filter while loading a truck. Should pressure drop be in excess of 15 lbs. notify RP&S Foreman.

JOB BREAKDOWN

B-14

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Assistant Pumper
OPERATION: B-14 Dock Line Relief

IMPORTANT STEPS	KEY POINTS
1. General Information	(a) When the dock finished product lines are not in active use, they are pressure relieved at the B/P through 1" crossovers to finished tankage instead of relying on PRVs at the dock.
2. Location	(a) S/C and F/C relief lines are located on shipping manifold. (b) Diesel, Burner Oil and Avjet relief lines are located West of the component pumps in the 100 ft. pipeway. (c) Bunker Fuel Oil relieves through the shipping pump back to tankage. The check valve is removed on the shipping pump.
3. Operation	(a) Valves on relief lines are to be closed when shipping to dock. (b) After each shipment is completed, open relief crossover. Dock Diesel lines can be relieved to either 448 or 454 Diesel tankage. Extreme care must be taken to prevent products from being mixed. (c) The block valves for all PRVs are sealed in the open position.

JOB CONTENT

Page 1

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Pumper

TRAINEE:

<u>B. ON THE JOB TRAINING</u>	<u>DATE</u>	<u>NAME</u>
1. Responsible for RP&S Operations		
2. Review Operations With Relief		
3. Acknowledge and Acquaint Personnel With Operating Orders		
4. Check Unit Operations		
5. Check RP&S Equipment		
6. Coordinate Activities of Shift Crew		
7. Check Tank Inventories		
8. Maintain Operating Materials and Supplies		
9. Maintain Safety Equipment		
10. Direct Safe Work Performances		
11. Check Fire Equipment		
12. Inspect and Approve Vessels and Equipment for Repairs and Maintenance		
a. Drain, Flush and Gas Free		
b. Arrange for Gas Tests		
c. Prepare Safety Work Permit, R-241-A		
d. Prepare Hot Work Permit, R-241		
e. Direct Placement of Blinds		
13. Maintain Records and Reports		
a. Operating Log		
b. Run Sheets		
c. Repair List		

JOB CONTENT

Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Pumper

TRAINEE:

-
- | B. ON THE JOB TRAINING (CONT.) | <u>DATE</u> | <u>NAME</u> |
|--|-------------|-------------|
| 14. Direct Clean Up and Housekeeping | | |
| 15. Direct Running Maintenance | | |
| 16. Coordinate Unit Operations with
Other Units and Departments | | |
| 17. Relieve Crew Members | | |
| 18. Train and Direct Training of Crew
Members | | |
| 19. Direct Emergency Procedures | | |

Note: Pumper also required to perform all items listed
on the Job Contents of the Pumper Helper B,
Pumper Helper A and Assistant Pumper.

Employee Qualified:

Signed: _____ Foreman

JOB CONTENT

Page 2

PLANT: Puget Sound
DEPARTMENT: RP&S-Docks
CLASSIFICATION: Pumper

TRAINEE:

B. ON THE JOB TRAINING (CONT.)	<u>DATE</u>	<u>NAME</u>
14. Direct Clean Up and Housekeeping		
15. Direct Running Maintenance		
16. Coordinate Unit Operations with Other Units and Departments		
17. Relieve Crew Members		
18. Train and Direct Training of Crew Members		
19. Direct Emergency Procedures		

Note: Pumper also required to perform all items listed
on the Job Contents of the Pumper Helper B,
Pumper Helper A and Assistant Pumper.

Employee Qualified:

Signed: _____ Foreman