



Job Task Analysis

Employer:	Stanislaus County
Occupation:	Equipment Service Technician
Company Contact:	Risk Management 1010 10 th Street Modesto, California 95354 (209) 525-5770
Date:	February 2010
Analysis Provided By:	Lyle Andersen, PT, CWCE Andersen Physical Therapy, Inc. 3500 Coffee Road, Suite 3 Modesto, California 95355 (209) 549-4626

INTRODUCTION:

A complete job description is available through Stanislaus County Human Resources. The environmental factors, physical and functional demands for this Job Task Analysis were documented by Andersen Physical Therapy, Inc. The methodology for documentation consisted of on-site visits, using various measuring devices such as dynamometers and scales, as well as observation and interviews with employees and managers. A detailed record was made of the physical and functional demands of the job in terms of force pounds, weight, frequency, height, distance, anthropometric measurements, stamina, and degrees of range of motion. The determination of the frequencies of functional activities is based on standards provided by the National Institute for Occupational Safety and Health (NIOSH) and the Work Practice Guide for Manual Lifting (U.S. Department of Commerce, National Technical Information Service).

The Job Task Analysis is organized as follows: General work description; safety requirements; equipment; environmental factors; and physical/functional demands.

Chief Executive Office – Recruitment Unit
P.O. Box 3404, Modesto, CA 95354

Phone (209) 525-6341 Fax (209) 525-4056

Chief Executive Office – Risk Management Division
P.O. Box 1723, Modesto, CA 95354

Phone (209) 525-5710 Fax (209) 525-5779

GENERAL WORK DESCRIPTION:

The frequency of the following activities may vary according to the physical requirements of the specific job tasks that the employee may be required to perform at random intervals.

Under the general supervision of the department manager, to lubricate and service automotive equipment; to assist mechanics by performing the less skilled repair and maintenance work; and to perform related work as required. Incumbents are subject to call-back, standby and overtime.

SPECIFIC DUTIES: Available through the Human Resources Department at the County of Stanislaus.

<http://www.stancounty.com/personnel/PDF/JobSpecifications.pdf>

Safety Requirements: All employees are required to observe company safety procedures and standards to insure individual and collective safety, in addition to avoiding unnecessary risk to oneself, co-workers, customers, and property.

Equipment:

- | | |
|------------------------------|-------------------------------|
| 1. Air conditioner machines | 12. Hydraulic press |
| 2. Air operated hand tools | 13. Portable jacks and stands |
| 3. Brake lathe | 14. Pressure washer |
| 4. Car pusher | 15. Solvent cleaning tank |
| 5. Chop saw | 16. Tire balancer |
| 6. Drill press | 17. Tire changer |
| 7. Dynamometer | 18. Tow truck |
| 8. Electric power hand tools | 19. Vehicle analyzer |
| 9. Fork lift | 20. Vehicle hoists |
| 10. Grinders | 21. Welders |
| 11. Hand tools | |

*All employees within the **Equipment Service Technician** position are required to provide physical assistance for all weight and frequency requirement needs of all job tasks in order to maintain a safe work environment. Employees must be physically capable of working in any of the job tasks within the **Equipment Service Technician** position.*

ENVIRONMENTAL FACTORS



The following percentages are given in terms of an eight-hour workday:

Seldom = 1% - 2%	Frequent = 34% - 66%
Occasional = 3% - 33%	Constant = 67% - 100%

	ENVIRONMENTAL FACTORS	MAXIMUM FREQUENCY
1.	Unprotected height:.....	Not Applicable
2.	Being around moving machinery: hoist, forklift, tow truck, fan belt, grinder, chop saw, vehicles.	Constant
3.	Exposure to marked changes in temperature and humidity: outside temperatures may seasonally vary between 28-110 degrees.	Seldom
4.	Exposure to dust, fumes, smoke, gases, or other irritating substances (specify): vehicle exhaust, solvent tank chemicals.	Occasional
5.	Driving: forklift, tow truck, vehicles	Occasional
6.	Exposure to excessive noise:..... <i>Hearing protection is available</i>	Occasional
7.	Exposure to radiant or electrical energy: hybrid vehicles.....	Seldom
8.	Exposure to solvents or chemicals: cleaning solvent, fuel, battery acid, oil, grease. <i>Refer to MSDS document. Hand protection available.</i>	Occasional
9.	Exposure to slippery or uneven walking surfaces: fluid or oil leaks, water	Occasional
10.	Working below ground:.....	Not Applicable
11.	Unusual fatigue factors:	Not Applicable
12.	Working with explosives: fuel recovery tank	Seldom
13.	Excessive vibration: air gun	Occasional
14.	Working with hands in water or other substance:..... <i>Hand protection is available</i>	Not Required
15.	Working proximity:.....Alone: Closely with others:	Not Required Constant
16.	Working inside:.....	Constant
17.	Working outside: road call offsite.....	Occasional

FUNCTIONAL ACTIVITIES



The frequency of the following activities may vary according to the physical requirements of the specific job tasks the employee may be required to perform at random intervals.

PHYSICAL AND FUNCTIONAL REQUIREMENTS

<u>FREQUENCY DEFINITIONS</u>	<u>SELDOM</u>	<u>OCCASIONAL</u>	<u>FREQUENT</u>	<u>CONSTANT</u>
Percent of the Day	1-2%	3-33%	34-66%	67-100%
Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Non Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Repetitive & Static Work	1-50 Reps	51-250 Reps	251-1,000 Reps	1,001-20,000 Reps

1.) **PUSH**: *Pushing activities may require use of the back in conjunction with leg and arm musculature.*

MAXIMUM REQUIREMENT

0-10 pounds:	Frequent	
11-25 pounds:	Occasional	
26-35 pounds:	Occasional	
36-50 pounds:	Seldom	
51-75 pounds:	Not Required	
76-100 pounds:	Not Required	Maximum Force: 50 Pounds

Assistive Devices: 4-wheeled cart, hand truck. Additionally, one person assistance is available with forces greater than 50 pounds.

Comments: Pushing is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, equipment, controls, repairing, inspecting, maintaining, supplies (e.g. tools, tires, carts). The employee exerts up to 50 pounds of force in a horizontal plane from waist to shoulder height of a distance up to 50 feet when performing job tasks (e.g. push to utilize hand and power tools; install tires; inspection of vehicle body parts; tool box; tire rolling; applying torque to wrench).

2.) **PULL**: *Pulling activities may require use of the back in conjunction with leg and arm musculature.*

MAXIMUM REQUIREMENT

0-10 pounds:	Frequent	
11-25 pounds:	Occasional	
26-35 pounds:	Occasional	
36-50 pounds:	Seldom	
51-75 pounds:	Not Required	
76-100 pounds:	Not Required	Maximum Force: 50 Pounds

Assistive Devices: 4-wheeled cart, hand truck. Additionally one person assistance is available with forces greater than 50 pounds.

Comments: Pulling is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, repairing, inspecting, maintaining, equipment, controls, supplies (e.g. tools, tires, carts). The employee exerts up to 50 pounds of force in a horizontal plane from waist to shoulder height of a distance up to 5 feet when performing job tasks (e.g. pull to utilize hand and power tools; remove tires; inspection of vehicle body parts; tool box; applying torque to wrench). *Pushing is the preferred method of moving carts.*

3.) **STAND-UP LIFT:** *Lifting weighted objects between floor and waist height.*

<u>MAXIMUM REQUIREMENT</u>	
0-10 pounds:	Frequent
11-25 pounds:	Occasional
26-35 pounds:	Occasional
36-50 pounds:	Occasional
51-75 pounds:	Seldom
76-100 pounds:	Not Required
Maximum Force: <u>75</u> Pounds	

Assistive Devices: Hoist. One person assistance is available with weights greater than 75 pounds.

Comments: A stand-up lift is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, repairing, inspecting, maintaining, equipment, controls, supplies (e.g. vehicle parts, tools). The employee lifts items weighing between <1 pounds and 75 pounds the floor when performing job tasks (e.g. lift up to 75 pound tires; up to 50 pound miscellaneous parts; up to 50 pound battery; up to 45 pound fuel/oil containers; up to 40 pound exterior vehicle apparatus; miscellaneous brakes, rotors, drums; up to 10 pound miscellaneous hand and power tools; fabricating steel material; testing equipment; 33 pound bag of sweeping compound). *Safe lifting is performed by utilizing a posture of partial squatting and a straight back.*

4.) **LEVEL LIFT:** *Lifting weighted objects from between waist and chest height level for a maximum horizontal distance of up to four feet.*

<u>MAXIMUM REQUIREMENT</u>	
0-10 pounds:	Frequent
11-25 pounds:	Occasional
26-35 pounds:	Occasional
36-50 pounds:	Occasional
51-75 pounds:	Seldom
76-100 pounds:	Not Required
Maximum Force: <u>75</u> Pounds	

Assistive Devices: Hoist, forklift, hand truck, 4-wheeled cart. Additionally, one person assistance is available with weights greater than 75 pounds.

Comments: A level lift is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, repairing, inspecting, maintaining, equipment, controls, supplies (e.g. vehicle parts, tools). The employee lifts items weighing between <1 pounds and 75 pounds from/to the floor when performing job tasks (e.g. lift up to 75 pound tires; up to 50 pound miscellaneous parts; up to 50 pound battery; up to 45 pound fuel/oil containers; up to 40 pound exterior vehicle apparatus; miscellaneous brakes, rotors, drums; up to 10 pound miscellaneous hand and power tools; fabricating steel material; testing equipment; 33 pound bag of sweeping compound; open vehicle hood).

5.) **WEIGHT CARRY:** *Carrying weighted objects between waist and chest height beyond a distance of four feet.*

<u>MAXIMUM REQUIREMENT</u>	
0-10 pounds:	Frequent
11-25 pounds:	Occasional
26-35 pounds:	Seldom
36-50 pounds:	Seldom
51-75 pounds:	Not Required
76-100 pounds:	Not Required
Maximum Force: <u>50</u> Pounds	

Assistive Devices: Hoist, forklift, hand truck, 4-wheeled cart. Additionally, one person assistance is available with weights greater than 50 pounds.

Comments: Weight carry is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, repairing, inspecting, maintaining, equipment, controls, supplies (e.g. vehicle parts, tools). The employee lifts items weighing between <1 pounds and 50 pounds off the floor when performing job tasks (e.g. up to 50 pound miscellaneous parts; up to 50 pound battery; up to 45 pound fuel/oil containers; up to 40 pound exterior vehicle apparatus; miscellaneous brakes, rotors, drums; up to 10 pound miscellaneous hand and power tools; fabricating steel material; testing equipment; 33 pound bag of sweeping compound).

6.) **OVERHEAD LIFT/PULL DOWN:** *Lifting weighted object from/to chest and overhead height level.*

<u>MAXIMUM REQUIREMENT</u>	
0-10 pounds:	Occasional
11-25 pounds:	Seldom
26-35 pounds:	Not Required
36-50 pounds:	Not Required
51-75 pounds:	Not Required
76-100 pounds:	Not Required
Maximum Force: <u>20</u> Pounds	

Assistive Devices: A vertical ladder/step ladder/or step stool is available to bring items to eye or shoulder level. Additionally, one person assistance is available with weights greater than 20 pounds.

Comments: Overhead lift/pull down is utilized with activities such as retrieving, returning, storing, adjusting, moving, transporting, equipment, controls, supplies (e.g. tools, external vehicle apparatus, parts). The employee lifts items weighing between <1 pounds and 20 pounds to a maximum height of 84 inches when performing job tasks (e.g. reach to lift hand and power tools; patrol light-bar apparatus; vehicle parts; retractable hose reels; tire on rack storage). *Variables to overhead reaching will be the employee's height and anthropometric reach.*

7.) **OVERHEAD REACH:**

MAXIMUM FREQUENCY:	Occasional
---------------------------	------------

Comments: Overhead reach is performed to a maximum height of 84 inches when retrieving, returning, storing, adjusting, repairing, maintaining, and/or supplies (e.g. reach for retractable hoses; under carriage work; vehicle apparatus; vehicle components, parts, tire on rack storage; inspection). *A ladder (appropriate height) or step stool may be utilized to bring items to eye or shoulder level. Variables to overhead reaching will be the employee's height and anthropometric reach.*

8.) FORWARD REACH:

**MAXIMUM
FREQUENCY:** Frequent

Comments: Forward reach is performed to a maximum distance of 32 inches when retrieving, returning, storing, adjusting, moving, transporting, inspecting, repairing, maintaining, equipment, controls, and/or supplies (e.g. reach for maintenance or repair of brakes, tires, engine, apparatus components, water pump, electrical system, fuel pump, fuel tank, pulleys; service transmission, cooling system, air conditioning system; tire rotation, repair, replace). Extensive repair on large trucks are mostly contracted to outside repair sites. *The degree of elbow extension required for reaching will vary according to the employee's anthropometric reach.*

9.) STOOP:

**MAXIMUM
FREQUENCY:** Occasional

Comments: Stooping is performed when retrieving, returning, storing, adjusting, moving, transporting, inspecting, repairing, maintaining, equipment, controls, and/or supplies (e.g. stoop for maintenance or repair of brakes, tires, engine, apparatus components, water pump, electrical system, fuel tank). *Variable to stooping will be the employee's height. Stooping of the head, trunk and knees can be minimized or avoided by substituting alternate positions of squatting, kneeling or bending when performing job tasks.*

10.) SQUAT: (Unloaded)

**MAXIMUM
FREQUENCY:** Seldom

Comments: Squatting is performed when inspecting equipment (e.g. squat to reach below waist height for preventative maintenance; inspection of under carriage; climb to/from creeper cart). *Squatting may be minimized or avoided by substituting alternate positions of bending or kneeling. Partial squatting is a preferred lifting posture.*

11.) FORWARD BEND:

**MAXIMUM
FREQUENCY:** Frequent

Comments: Bending forward at the waist is performed when retrieving, returning, adjusting, moving, transporting, equipment, controls, and/or supplies (e.g. bend to reach near or far below waist height for maintenance and repair of brakes, tires, engine, apparatus components, water pump, electrical system, fuel pump, fuel tank, pulleys; service transmission, cooling system, air conditioning system. *Employee may minimize or avoid excessive forward bending of the trunk up to 80 degrees by using alternate positions of bending at the hips, kneeling, half kneeling, stooping, sitting or squatting.*

12.) TWIST:

**MAXIMUM
FREQUENCY:** Occasional

Comments: Twisting at the waist is performed when retrieving, returning, adjusting, moving, transporting, equipment, controls, and/or supplies (e.g. twist when performing work under vehicle dashboard; miscellaneous maintenance and repair job assignments). *Twisting at the waist may be minimized by turning the whole body, including the feet and working from a swivel office chair.*

13.) **TURN:**

**MAXIMUM
FREQUENCY:** Occasional

Comments: Turning is performed when retrieving, returning, adjusting, moving, transporting, equipment, controls, and/or supplies (e.g. turn to reach near or far below waist height for maintenance and repair of brakes, tires, engine, apparatus components, water pump, electrical system, fuel pump, fuel tank, pulleys; service transmission, cooling system, air conditioning system).

14.) **KNEEL:**

**MAXIMUM
FREQUENCY:** Seldom

Comments: Kneeling is performed when inspecting, repairing, maintaining equipment (e.g. kneel when checking vehicle fuses; electrical and other light driveway repairs; trouble shooting; dynamometer tie down). *Kneeling may be minimized or avoided by substituting alternate positions of bending, squatting, or half kneeling.*

15.) **CRAWL:**

**MAXIMUM
FREQUENCY:** Seldom

Comments: Crawling is performed when inspecting equipment (e.g. vehicle under carriage inspection for leaks, radials, damage, brakes, wear and tear).

16.) **STAIR CLIMB:**

**MAXIMUM
FREQUENCY:** Not Required

Comments: Stair climb is not required

17.) **LADDER CLIMB:**

**MAXIMUM
FREQUENCY:** Seldom

Ladder climbing is performed onto/off of safety ladders or steps to access equipment and supplies located 8 feet above floor level (e.g. climb for maintenance and repair; vehicle inspection). *Variables to overhead climbing will vary according to the employee's height and anthropometric reach.*

18.) **WALK:**

**MAXIMUM
FREQUENCY:** Frequent

Comments: Walking is performed when retrieving, returning, storing, adjusting, moving, transporting, equipment, controls, supplies (e.g. travel to/from tool box, work bench, vehicles, parts department; performing repair, maintenance and inspection of vehicles; offsite road calls). Walking length varies between 3 feet and 200+ feet depending on job task.

19.) **SIT:**

**MAXIMUM
FREQUENCY:** Occasional

Comments: Sitting is performed for a maximum of 30-minute intervals when inspecting, repairing, maintaining equipment (e.g. sit while performing dash or steering column work; vehicle road testing; drive tow truck; desktop work). *Specific work tasks may require up to frequent standing and/or walking.*

20.) **STAND: (Static)**

**MAXIMUM
FREQUENCY:** Frequent

Comments: Static standing is performed for a maximum of 30-minute intervals when retrieving, returning, storing, adjusting, moving, transporting, inspecting, repairing, maintaining, equipment, controls, and/or supplies (e.g. stand for maintenance or repair of brakes, tires, engine, apparatus components, water pump, electrical system, fuel pump, fuel tank, pulleys; service transmission, cooling system, air conditioning system).

21.) **BALANCE:**

**MAXIMUM
FREQUENCY:** Constant

Comments: Adequate balance is required for safe walking, standing, climbing, reaching and lifting.

22.) **HAND/FOOT CONTROL:**

	<u>MAXIMUM REQUIREMENT</u>
HAND:	
Right:	Occasional
Left:	Occasional
Both:	Occasional
Either:	Occasional
FOOT:	
Right:	Occasional
Left:	Occasional
Both:	Not Required
Either:	Occasional

Comments: Hand controls are utilized to operate equipment (e.g. hand and power tools; vehicle, shop machinery) when retrieving, returning, storing, adjusting, moving, transporting, equipment, controls, and/or supplies (e.g. operate shop tools and machinery; vehicle road testing). Foot controls are utilized to operate equipment (e.g. vehicles, forklift, tire machine, tow truck).

23.) UPPER AND LOWER EXTREMITY COORDINATION:

<u>MAXIMUM REQUIREMENT</u>	
Simple Grasp:	Frequent
Firm Grasp:	Frequent
Fine Manipulation:	Occasional
Eye/Hand Coordination:	Frequent
Hand/Foot Coordination:	Occasional

Comments: Grasping and coordination activities are performed when retrieving, returning, storing, adjusting, moving, transporting equipment, controls and /or supplies (e.g. tools, components, parts, vehicles).

Simple grasping is utilized to perform job tasks (e.g. lift and manipulate objects weighing less than 5 pounds; operate hand and power tools; drive vehicle).

Firm grasping is utilized to perform job tasks (e.g. lift and handle objects weighing 5 pounds or greater; operate hand and power tools; operate tow truck; apply torque to wrenches; operate forklift).

Fine manipulation is utilized to perform job tasks (e.g. keyboard, mouse, handwrite, wire, solder, adjust controls; utilize small wires, nuts, bolts).

Eye/hand coordination is utilized to perform job tasks (e.g. keyboard, handwrite, wire, solder, adjust controls; utilize small wires, nuts, bolts; drive vehicle).

Hand/foot coordination is utilized to perform job tasks (e.g. operate and drive forklift, tow truck and vehicles).

Depending on individual hand dominance, one hand may be used more frequently than the other when performing job tasks.

24.) CERVICAL (NECK) MOVEMENT:

<u>MAXIMUM REQUIREMENT</u>	
Static Neutral Position:	Occasional
Flexing:	Frequent
Rotating:	Occasional
Extending:	Occasional

Comments: Neck movement is required when performing job tasks (e.g. inspect, repair, maintain vehicles).

Participation in the observation of the work environment allows for safe working conditions. Full cervical range of motion is required to safely perform the job tasks.

{End of Report}



Stanislaus County

JOB TASK ANALYSIS SUMMARY

<u>FREQUENCY DEFINITIONS</u>	<u>SELDOM</u>	<u>OCCASIONAL</u>	<u>FREQUENT</u>	<u>CONSTANT</u>
Percent of the Day	1-2%	3-33%	34-66%	67-100%
Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Non Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Repetitive & Static Work	1-50 Reps	51-250 Reps	251-1,000 Reps	1,001-20,000 Reps

The following is a summary of the physical demands of the Job Task Analysis that were obtained for the position of:

EQUIPMENT SERVICE TECHNICIAN

Functional Activities	Maximum Requirements	Functional Activities	Maximum Requirements
<i>Push (Force)</i> ¹	50 pounds	<i>Stair Climb</i>	Not Required
<i>Pull (Force)</i> ¹	50 pounds	<i>Ladder Climb</i> ¹	Seldom
<i>Stand Up Lift</i> ¹	75 pounds	<i>Walk</i> ¹	Frequent
<i>Level Lift</i> ¹	75 pounds	<i>Sit</i> ¹	Occasional
<i>Weight Carry</i> ¹	50 pounds	<i>Stand (Static)</i> ¹	Frequent
<i>Overhead Lift/Pull Down</i>	20 pounds	<i>Balance</i> ¹	Constant
<i>Overhead Reach</i> ¹	Occasional	<i>Hand Control</i> ¹	Occasional
<i>Forward Reach</i> ¹	Frequent	<i>Foot Control</i> ¹	Occasional
<i>Stoop</i> ¹	Occasional	<i>Simple Grasp</i> ¹	Frequent
<i>Squat (Unloaded)</i> ¹	Seldom	<i>Firm Grasp</i> ¹	Frequent
<i>Forward Bend</i> ¹	Frequent	<i>Fine Manipulation</i> ¹	Occasional
<i>Twist</i> ¹	Occasional	<i>Eye/Hand Coordination</i> ¹	Frequent
<i>Turn</i> ¹	Occasional	<i>Hand/Foot Coordination</i> ¹	Occasional
<i>Kneel</i> ¹	Seldom	<i>Cervical (neck) Movement</i> ¹	Frequent
<i>Crawl</i>	Seldom		

¹ The critical demands of the job.

Lyle Andersen, PT

_____ Lyle Andersen, PT, CWCE Preparer Signature	Date: _____	_____ Contact Person Title	Date: _____
_____ Contact Person Title	Date: _____	_____ Contact Person Title	Date: _____

LA/au