



Job Task Analysis

Employer:	Stanislaus County
Occupation:	System Engineer I, II & Senior
Classification:	System Engineer I, II & Senior
Company Contact:	Risk Management 1010 10 th Street Modesto, California 95354 (209) 525-5770
Date:	July 2008
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.

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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, the **Systems Engineer I, II**, performs a variety of systems engineering duties of a low to high degree of complexity with Local Area Networks/Wide Area Networks (LAN/WANs), telecommunications networks and/or mid to high-end computing platforms. The **Senior Systems Engineer**, performs a variety of systems engineering duties of a high degree of complexity with Local Area Networks/Wide Area Networks (LAN/WANs), telecommunications networks and/or mid to high-end computing platforms.

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. Computer | 7. Ladder |
| 2. Keyboard | 8. Miscellaneous hand tools |
| 3. Monitor | 9. Power supply units |
| 4. Racks | 10. Cart |
| 5. Computer servers | 11. Hand truck |
| 6. Printers | |

*All employees within the **System Engineer I, II & Senior** 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 **System Engineer I, II & Senior** 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 heights: ladder.....	Seldom
2.	Being around moving machinery: vehicle.....	Occasional
3.	Exposure to marked changes in temperature and humidity: outside temperatures may seasonally vary between 28-110 degrees. Chilled information technology room....	Occasional
4.	Exposure to dust, fumes, smoke, gases, or other irritating substances (specify):	Not Applicable
5.	Driving: vehicle.....	Seldom
6.	Exposure to excessive noise:..... <i>Hearing protection is available</i>	Not Applicable
7.	Exposure to radiant or electrical energy:.....	Occasional
8.	Exposure to solvents or chemicals:..... <i>Refer to MSDS document.</i>	Not Applicable
9.	Exposure to slippery or uneven walking surfaces:.....	Not Applicable
10.	Working below ground:.....	Not Applicable
11.	Unusual fatigue factors:	Not Applicable
12.	Working with explosives:.....	Not Applicable
13.	Excessive vibration:	Not Applicable
14.	Working with hands in water or other substance:..... <i>Hand protection is available</i>	Not Applicable
15.	Working proximity:.....	Alone: Occasional Closely with others: Continuous
16.	Working inside:.....	Continuous
17.	Working outside:.....	Not Required

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:	Occasional
11-25 pounds:	Seldom
26-100 pounds:	Not Required

Maximum Force: 25 Pounds

Assistive Devices: 2 or 4-Wheeled Cart, Hand Truck. Additionally, one person assistance is available with forces greater than 25 pounds.

Comments: Pushing is utilized with activities such as retrieving, returning, storing, adjusting, moving, and/or transporting equipment, and supplies (e.g. cart, electronic device, door). The employee exerts up to 25 pounds of force in a horizontal plane from waist to shoulder height of a distance up to 600 feet when performing job tasks (e.g. up to 25 pounds of force to travel with cart; open/close door, drawer, file, cabinet; slide individual computer components onto/off of storage or work space).

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

MAXIMUM REQUIREMENT

0-10 pounds:	Occasional
11-25 pounds:	Seldom
26-100 pounds:	Not Required

Maximum Force: 25 Pounds

Assistive Devices: 2 or 4-Wheeled Cart, Hand Truck. Additionally, one person assistance is available with forces greater than 25 pounds.

Comments: Pulling is utilized with activities such as retrieving, returning, storing, adjusting, moving, and/or transporting equipment, and supplies (e.g. cart, electronic device, door). The employee exerts up to 25 pounds of force in a horizontal plane from waist to shoulder height of a distance up to 600 feet when performing job tasks (e.g. up to 25 pounds of force to travel with cart; open/close door, drawer, file, cabinet; slide individual computer components onto/off of storage or work space). *Pushing is the preferred method of moving carts.*

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

MAXIMUM REQUIREMENT

0-10 pounds:	Occasional
11-25 pounds:	Seldom
26-35 pounds:	Seldom
36-50 pounds:	Seldom
51-100 pounds:	Not Required

Maximum Force: 40 Pounds

Assistive Devices: One or more person(s) assistance is available with weights greater than 40 pounds.

Comments: A stand-up lift is utilized with activities such as retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. electrical devices, books, documents, files). The employee lifts items weighing between <1 pound and 40 pounds from/to the floor when performing job tasks (e.g. monitor, computer, keyboard, mouse, printer, software, cords, cables, research material, auxiliary battery; miscellaneous delivered cased item; miscellaneous equipment weighing up to 100+ pounds).

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

MAXIMUM REQUIREMENT

0-10 pounds:	Frequent
11-25 pounds:	Occasional
26-35 pounds:	Occasional
36-50 pounds:	Seldom
51-100 pounds:	Not Required

Maximum Force: 40 Pounds

Assistive Devices: 2 or 4-Wheeled Cart, Hand Truck. Additionally, one or more person(s) assistance is available with weights greater than 40 pounds.

Comments: A level lift is utilized with activities such as retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. electrical device, book, documents, files). The employee lifts items weighing between <1 pound and 40 pounds when performing job tasks (e.g. monitor, computer, keyboard, mouse, printer, software, cords, cables, research material, auxiliary battery; miscellaneous deliveries; miscellaneous equipment up to 100+ pounds).

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

MAXIMUM REQUIREMENT

0-10 pounds:	Frequent
11-25 pounds:	Occasional
26-35 pounds:	Seldom
36-50 pounds:	Seldom
51-100 pounds:	Not Required

Maximum Force: 40 Pounds

Assistive Devices: 2 or 4-Wheeled Cart, Hand Truck. Additionally, one or more person(s) assistance is available with weights greater than 40 pounds.

Comments: Weight carry is utilized with activities such as retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. electrical devices, book, documents, files). The employee carries items weighing between <1 pound and 40 pounds between 5 feet and 10+ feet when performing job tasks (e.g. monitor, computer, keyboard, mouse, printer, software, cords, cables, research material, auxiliary battery; miscellaneous deliveries; miscellaneous equipment up to 100+ pounds).

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

0-10 pounds:	Seldom
11-25 pounds:	Seldom
26-100 pounds:	Not Required

Maximum Force: 20 Pounds

Assistive Devices: A vertical ladder, step ladder or step stool is available to bring items to eye or shoulder level.

Additionally, one or more person(s) 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, and/or transporting equipment and supplies (e.g. electrical devices, documents). The employee lifts items weighing between <1 pound and 20 pounds to a maximum height of 72 inches when performing job tasks (e.g. up to 40-pound computer components; miscellaneous stored reference or research material). *Variables to overhead reaching will be the employee's height and anthropometric reach.*

7.) **OVERHEAD REACH:****MAXIMUM FREQUENCY:** Seldom

Comments: Overhead reach is performed to a maximum height of 72 inches when retrieving, returning, storing, adjusting, moving equipment and supplies (e.g. components and media; stored research and reference material). *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 distance of 28 inches when retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. desktop work; file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). *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, and/or transporting equipment and supplies (e.g. file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). *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 retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). *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:** Occasional

Comments: Bending forward at the waist is performed when retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. desk or counter work; file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). Maximum forward trunk flexion required is 60 degrees. *Employee may 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, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). *Twisting at the waist may be minimized by turning the whole body, including the feet and working from a swivel chair.*

13.) **TURN:**

**MAXIMUM
FREQUENCY:** Occasional

Comments: Turning is performed when retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. file; evaluate worksite; locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts).

14.) **KNEEL:**

**MAXIMUM
FREQUENCY:** Seldom

Comments: Kneeling is performed when retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts). *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 retrieving, returning, storing, adjusting, moving, and/or transporting equipment and supplies (e.g. locate, connect and/or disconnect computer cases and cords; install and/or remove computer component parts).

16.) **STAIR CLIMB:**

**MAXIMUM
FREQUENCY:** Not Required

Comments: Stair climb is not required to perform job tasks.

17.) **LADDER CLIMB:**

**MAXIMUM
FREQUENCY:** Seldom

Comments: Ladder climbing is performed onto/off of safety ladders or steps to access equipment and supplies (e.g. electrical devices) located 6+ feet above floor level (e.g. reach storage shelf or rack; miscellaneous computer components, cords or cable). *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, and/or transporting equipment and supplies (e.g. walk to/from job sites; meetings). Walking length varies between 3 feet and 600+ feet depending on job task.

19.) **SIT:**

**MAXIMUM
FREQUENCY:** Frequent

Comments: Sitting is performed for a maximum of 120-minute intervals when retrieving, returning, storing, adjusting, moving and/or transporting, equipment, controls, and supplies (e.g. meetings with collaborating agencies and/or colleagues; application development; specification writing; monitor systems). *Specific work tasks may require up to frequent standing and/or walking.*

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

**MAXIMUM
FREQUENCY:** Occasional

Comments: Static standing is performed for a maximum of 15-minute intervals when performing job tasks (e.g. work site observation and/or analysis; counter work; communication with collaborating agency and/or colleagues).

21.) **BALANCE:**

MAXIMUM FREQUENCY:	Frequent
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Comments: Good balance is required for safe walking, standing, climbing and lifting.

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

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

Comments: Hand controls are utilized to operate equipment (e.g. vehicle) when adjusting controls (e.g. drive vehicle).
Foot controls are utilized to operate equipment (e.g. drive vehicle).

23.) **UPPER AND LOWER EXTREMITY COORDINATION:**

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

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

Simple grasping is utilized to perform job tasks (e.g. lifting and manipulating objects weighing less than 5 pounds).

Firm grasping is utilized to perform job tasks (e.g. lifting and manipulating objects weighing 5 pounds or greater).

Fine manipulation is utilized to perform job tasks (e.g. keyboard, mouse, disk drive; handwrite; telephone; media, cords, cables).

Eye/hand coordination is utilized to perform job tasks (e.g. keyboard, mouse, disk drive; handwrite; telephone; install or remove media, cords, cables; worksite evaluation; drive vehicle).

Hand/foot coordination is utilized to perform job tasks (e.g. drive vehicle).

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:	Frequent
Flexing:	Frequent
Rotating:	Occasional
Extending:	Seldom

Comments: Neck movement is required when performing job tasks (e.g. desk or counter work; operate computer; trouble shoot computer systems; install computer components, cables and/or cords; drive vehicle). *Participating in observation of work environment allowing for safe working conditions. Full cervical range of motion is required to safely perform the job tasks.*

{End of Report}



