

CASE STUDY - 3 Stapling

TASK TITLE: Stapling

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| Task Description: | <p>Stapling may involve the use of a hand-held stapler or a desk-top stapler for stacks of paper. Stapling may involve removing staples with a staple remover, sorting paper, straightening the stack, and stapling the stack. The length of time stapling varies significantly for stapling tasks. (Note: Some of the controls suggested in this case study may also apply to hole punching.)</p> <p>Typical jobs in which stapling is performed include:</p> <ul style="list-style-type: none">• copying and sorting• customer service |
| Job Performance Measures Most often impacted by Stapling: | Error rates, number of documents processed |
| Typical Employee Comments about Stapling: | Employees typically complain about discomfort and/or stiffness in the hands/wrists, arms, back/torso, and shoulders/neck. |
| Suggested Level II Analysis: | Postural analysis, light level analysis. |

Shoulder/Neck

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|-----------------------------|--|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 1. Arms held away from body | <ul style="list-style-type: none"> Stapler too far from body Work surface too high Chair too low Chair positioned too far away | 42. Move stapler closer to work-surface edge: <ul style="list-style-type: none"> when the stapler is being used with high frequency, it should be positioned close to the edge of the work surface. | ✓ | | low | med. | med. |
| | | 30. Lower work surface: <ul style="list-style-type: none"> set the height of the work surface so that the person's elbows are at the same height as the stapler. | ✓ | | low to med. | low | low |
| | | 85. Raise chair: <ul style="list-style-type: none"> set the height of the chair so that the person's elbows are at the same height as the stapler; in some cases, a footrest will be required in order to support the person's feet. | ✓ | | low | low | low |
| | | 33. Move chair closer to work surface: <ul style="list-style-type: none"> encourage person to push his or her chair toward the workstation in order to reduce the tendency to reach or lean forward. | ✓ | | low | low | low |

Shoulder/Neck

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|----------------------|--|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> Arms of chair interfere with moving chair closer  <p style="text-align: center;">Figure 3.1</p> <ul style="list-style-type: none"> Lack of leg clearance under desk | <p>90. Remove or lower armrests:</p> <ul style="list-style-type: none"> remove or adjust armrests, pencil drawers or other obstructions if they prevent the person from moving close enough to the workstation. <p>78. Provide proper chair:</p> <ul style="list-style-type: none"> provide a chair in which the armrests can be adjusted or removed. <p>89. Remove clutter from under work surface.</p> | ✓ | | low to med. | low | med. |
| | | | | ✓ | med. | low | low |
| | | | ✓ | | low | low | med. |
| 2. Repeated reaching | <ul style="list-style-type: none"> Stapler too far from body | <p>42. Move stapler closer to work-surface edge.</p> <ul style="list-style-type: none"> while the stapler is being used with high frequency, it should be positioned close to the edge of the work surface. | ✓ | | low | low | low |

Shoulder/Neck

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|---|---|--|----------------------------|----------------------|-------------|--------------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> Items used frequently not positioned close to the body  <p>Figure 3.2</p> | 34. Move items closer to body: <ul style="list-style-type: none"> prioritize the location of items on the workstation according to frequency of use; frequently used items should be positioned closer to the body and easily accessible. | ✓ | | low | med. to high | med. |
| 3. Shrugging; working with the shoulders shrugged | <ul style="list-style-type: none"> Work surface too high Chair positioned too low | 30. Lower work surface: <ul style="list-style-type: none"> set the height of the work surface so that the person's elbows are at the same height as the stapler. 85. Raise chair: <ul style="list-style-type: none"> set the height of the chair so that the person's elbows are at the same height as the stapler; Note: in some cases, a footrest will be required in order to support the person's feet. | ✓ | | low to med. | low | low |
| | | | ✓ | | low | low | low |

Case Study 3 (continued)

Shoulder/Neck

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|---|--|---|----------------------------|----------------------|------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> Drawer under work surface restricts chair height | 71 Provide alternative work surface: <ul style="list-style-type: none"> remove drawer; provide a workstation with no obstructions under the work surface such as pencil drawers or structural brackets. | ✓ | | med. | low | med. |
| 4. Repeated arm forces | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |
| 5. Holding/ carrying materials | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |
| 6. Cradling the telephone between the neck and shoulder | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |
| 7. Head bent down, up, or neck twisted | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |

Hands/Wrists/Arms

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|-------------------------------------|--|---|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 8. Bent wrists | <ul style="list-style-type: none"> Work surface too high  <p>Figure 3.3</p> | 30. Lower work surface: <ul style="list-style-type: none"> set the height of the work surface so that the person's elbows are at the same height as the stapler. 85. Raise chair: <ul style="list-style-type: none"> set the height of the chair so that the person's elbows are at the same height as the stapler; in some cases, a footrest will be required in order to support the person's feet. | ✓ | | low to med. | low | low |
| 9. Repeated wrist movements | <ul style="list-style-type: none"> Length and repetition of task without a work break | 13. Incorporate health comfort strategies: <ul style="list-style-type: none"> alternate tasks; stretch; and take rest pauses. | ✓ | | low | med. | med. |
| 10. Repeated finger movements | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |
| 11. Hyper-extension of finger/thumb | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |

Hands/Wrists/Arms

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|-----------------|--|--|----------------------------|----------------------|--------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 12. Hand forces | <ul style="list-style-type: none"> Stapler requires substantial hand forces High volume stapling | 102. Provide automatic stapler: <ul style="list-style-type: none"> for high volume stapling tasks, provide a stapler which does not require high hand forces. | | ✓ | med. to high | med. | med. |
| | | 108. Use larger stapler with longer lever arm: <ul style="list-style-type: none"> a larger stapler may reduce the force required to actuate the stapler. | ✓ | low | med. | med. | |
| 13. Hard edges | <ul style="list-style-type: none"> Hard edge on front of stapler | 18. Install palm rest: <ul style="list-style-type: none"> attach compressible padding to the top of the stapler to eliminate exposure to hard edges. | ✓ | | low | med. | med. |
| | | 102. Provide automatic stapler: <ul style="list-style-type: none"> for high volume stapling tasks, provide a stapler which does not require exposure to hard edges. | | ✓ | med. to high | med. | med. |

Hands/Wrists/Arms

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|-------------------------------|---|--|----------------------------|----------------------|-------------|--------------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 14. Repeated forearm rotation | <ul style="list-style-type: none"> Turning pages Manipulating documents | 13. Incorporate health comfort strategies: <ul style="list-style-type: none"> alternate tasks; stretch; take rest pauses. | ✓ | | low | med. | med. |
| | | 34. Move items closer to body: <ul style="list-style-type: none"> prioritize position of items on the workstation according to frequency of use; those items used frequently should be closer to the body and easily accessible. | ✓ | | low | med. to high | med. |
| | | 88. Redesign job: <ul style="list-style-type: none"> computerize some portion of the documents to reduce excessive document handling. | | ✓ | low to med. | med. | med. |

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|--|---|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 15. Leaning forward or poor lower back posture | • Documents too far away or too far to the side | 35. Move item closer to body: <ul style="list-style-type: none"> • position documents so they can be read easily without leaning forward; • prioritize the location of items on the workstation according to frequency of use. | ✓ | | low | low | med. |
| | • Light levels too low | 82. Provide task light: <ul style="list-style-type: none"> • increase light levels on documents being handled; • light levels of between 50-100 fc are recommended for paper tasks; • an adjustable task light (i.e., desk lamp) can help direct more light to the appropriate documents. | ✓ | | low to med. | med. | med. |
| | • Chair too high | 28. Lower chair: <ul style="list-style-type: none"> • set the height of the chair so that the work surface is about half way between resting elbow height and shoulder height. | ✓ | | low | low | low |

Case Study 3 (continued)

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|------------|---|---|----------------------------|----------------------|------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> Work surface too low | 86. Raise desk: <ul style="list-style-type: none"> set the height of the document support surface so that the work surface is about half way between resting elbow height and shoulder height. | ✓ | | low | low | low |
| | <ul style="list-style-type: none"> Person has the unconscious habit of leaning forward while working | 95. Train proper body mechanics: <ul style="list-style-type: none"> encourage person to rest the back against back rest and sit back and relax while working; encourage person to push his or her chair toward the workstation in order to reduce the tendency to lean forward. | ✓ | | low | low | med. |
| | <ul style="list-style-type: none"> Inappropriate chair adjustment | 94. Train worker to properly adjust chair: <ul style="list-style-type: none"> adjust back rest to support lower back; pull chair forward and lean back while working; attach a small pillow to back rest to support lower back. | ✓ | | low | low | low |

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|------------|---|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> Inadequate chair | 78. Provide proper chair: <ul style="list-style-type: none"> provide a chair with a back rest; provide a chair with adequate lower back support. | | ✓ | med. | low | low |
| | <ul style="list-style-type: none"> Chair arms interfere with moving chair closer | 90. Remove or lower armrests: <ul style="list-style-type: none"> remove or adjust armrests, pencil drawers or other obstructions if they prevent the person from moving close enough to the workstation. | ✓ | | low to med. | low | med. |
| | | 78. Provide proper chair: <ul style="list-style-type: none"> provide a chair in which the armrests can be adjusted or removed. | | ✓ | med. | low | low |
| | <ul style="list-style-type: none"> Seat pan on chair is too deep | 75. Provide back support: <ul style="list-style-type: none"> attach a pillow to back rest to decrease the seat pan depth and support the lower back; provide a chair with an adequate/adjustable seat pan depth and adequate lower back support. | ✓ | | low to med. | med. | med. |
| | | | | ✓ | med to high | med | med |

Case Study 3 (continued)

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|------------|--|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | | | ✓ | ✓ | | | |
| | <ul style="list-style-type: none"> Inadequate foot support causes person to not lean against back rest Chair too high causes person not lean against back rest | <p>76. Provide footrest:</p> <ul style="list-style-type: none"> provide a footrest which allows both the heels and toes to be supported; a footrest can be a purchased item; a box or several ring binders taped securely together can also be used; a footrest of one height may not be appropriate for all sized individuals or workstations (footrests within several heights or are adjustable in height are preferred); and a footrest should be large enough to allow the feet to move freely (size of 16" x 20" (40.64 cm X 50.8 cm) is recommended). <p>28. Lower chair:</p> <ul style="list-style-type: none"> adjust the chair height so that the person's heels and toes can both rest comfortably on the floor or other foot rest; | ✓ | | low to med. | low | low |
| | | | ✓ | | low | low | low |

Case Study 3 (continued)

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|----------------------|---|---|----------------------------|----------------------|------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | | <ul style="list-style-type: none"> care must be given to ensure that adjusting the chair for the feet does not cause problems for the hands, wrists, and arms. | | | | | |
| 16. Repeated bending | <ul style="list-style-type: none"> Reaching and bending to use the stapler Reaching for items too far from body | 42. Move stapler closer to work-surface edge: <ul style="list-style-type: none"> while the stapler is being used with high frequency, it should be positioned close to the edge of the work surface. 35. Move item closer to body: <ul style="list-style-type: none"> position documents so they can be read easily without leaning forward; prioritize the location of items on the workstation according to frequency of use. | ✓ | | low | low | low |
| | | | ✓ | | low | low | med. |
| 17. Lifting forces | <ul style="list-style-type: none"> Rarely occurs | N/A | | | | | |

Case Study 3 (continued)

Back/Torso

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|---------------------|------------------------|---|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 18. No foot support | • Chair too high | 28. Lower chair: <ul style="list-style-type: none"> • adjust the chair height so that the person's heels and toes can both rest comfortably on the floor or other foot rest; • care must be given to insure that adjusting the chair for the feet does not cause problems for the hands, wrists, and arms. | ✓ | | low | low | low |
| | • Feet are unsupported | 76. Provide footrest: <ul style="list-style-type: none"> • provide a footrest which allows both the heels and toes to be supported; • a footrest can be a purchased item or a box or several ring binders taped securely together; • a footrest of one height may not be appropriate for all sized individuals or workstations (footrests within come in several heights or are adjustable in height are preferred); and • a footrest should be large enough to allow the feet to move freely (size of at least 16" x 20" (40.64 cm X 50.8 cm) is recommended). | ✓ | | low to med. | low | low |

Legs/Feet

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|--|--|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 19. Edge of seat or work surface presses into legs | <ul style="list-style-type: none"> • Feet are not supported | 76. Provide footrest: <ul style="list-style-type: none"> • a footrest can support the feet and simultaneously reduce pressure on the back of the leg. | ✓ | | low to med. | low | low |
| | |  <p style="text-align: center;">Figure 3.4</p> 28. Lower chair: <ul style="list-style-type: none"> • adjust the chair height so that the person's heels and toes can both rest comfortably on the floor or other foot rest; • care must be given to insure that adjusting the chair for the feet does not cause problems for the hands, wrists, and arms. | ✓ | | low | low | low |

Case Study 3 (continued)

Legs/Feet

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|------------|--|--|----------------------------|----------------------|-------------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| | <ul style="list-style-type: none"> • Seat pan has a hard front edge | 94. Train worker to properly adjust chair: <ul style="list-style-type: none"> • provide a cushion for the seat pan to prevent contact with hard edge. | ✓ | | low | low | low |
| | | 78. Provide proper chair: <ul style="list-style-type: none"> • provide a chair with a rounded front edge on the seat pan. | | ✓ | med. | low | low |
| | <ul style="list-style-type: none"> • Seat pan too long | 75. Provide back support: <ul style="list-style-type: none"> • attach a pillow to back rest to decrease the seat pan depth and support the lower back; • provide a chair with an adequate/adjustable seat pan depth and adequate lower back support. | ✓ | | low to med. | med. | med. |
| | | 75. Provide back support: <ul style="list-style-type: none"> • provide a chair with an adequate/adjustable seat pan depth and adequate lower back support. | | ✓ | med to high | med | med |
| | <ul style="list-style-type: none"> • Obstructions under work surface interfere with leg clearance and expose person to hard edges: <ul style="list-style-type: none"> – pencil drawers; – keyboard trays; – or structural supports. | 89. Remove clutter from under work surface: <ul style="list-style-type: none"> • eliminate obstructions; • remove pencil drawers; • replace problem keyboard trays with trays that do not expose person to hard edges. | ✓ | | low | low | med. |

Head/Eyes

| Job Factor | Potential Causes | Corrective Action | Level of Changes | | Cost | Impact On | |
|-----------------------------------|------------------|-------------------|----------------------------|----------------------|------|-----------|--------------|
| | | | ✓ Minor Modification | ✓ Major Change | | Quality | Productivity |
| 20. Hard floor surfaces | • Rarely occurs | N/A | | | | | |
| 21. Kneeling/squatting | • Rarely occurs | N/A | | | | | |
| 22. Staring at screen or document | • Rarely occurs | N/A | | | | | |
| 23. Glare | • Rarely occurs | N/A | | | | | |
| 24. Light levels | • Rarely occurs | N/A | | | | | |
| 25. Screen distance | • Rarely occurs | N/A | | | | | |
| 26. Difficult to read | • Rarely occurs | N/A | | | | | |