DATE: April 4, 1991

TO: ALL WCAT STAFF

SUBJECT: DECISION NO. 476/90

Disablement (repetitive work) - Cashier - Carpal tunnel syndrome.

A cashier stopped work due to arm pain in January 1985. She received benefits for epicondylitis until August 1985. The worker appealed a decision of the Hearings Officer denying entitlement for a wrist disability.

On the evidence, the worker was not suffering from carpal tunnel syndrome. Nerve conduction studies did not support carpal tunnel syndrome. There was evidence of moderate thickening of the carpal ligament but no evidence of nerve compression.

Without making any conclusions as to what was the worker's condition, the Panel found that it was not related to her work as a cashier. Evidence indicated that the condition developed gradually after the worker stopped working and was no longer performing repetitive movements.

The appeal was dismissed. [11 pages]

PANEL: Moore; Beattie; Preston

DATE: 02/04/91
This appeal was heard in Sudbury on June 21, 1990, by a Tribunal Panel consisting of:

J.P. Moore : Vice-Chairman,
D.B. Beattie: Member representative of workers,
K.W. Preston: Member representative of employers.

THE APPEAL PROCEEDINGS

The worker appeals the decision of the Hearings Officer, N. Holsmer, dated January 11, 1989. The worker appeared and was represented by C. Hebert, of the Office of the Worker Adviser. The employer appeared and was represented by P. Pasieka, barrister and solicitor.

THE EVIDENCE

The following were marked as exhibits:

Exhibit #1: Case Description materials prepared by the Tribunal Counsel Office;
Exhibit #2: Case Description Addendum #1;
Exhibit #3: Case Description Addendum #2;
Exhibit #4: an undated medical report from a Tribunal Medical Assessor.

The worker testified under oath. The Panel heard submissions from Ms. Hebert and Ms. Pasieka.

THE NATURE OF THE CASE

On January 30, 1985, the worker stopped work because of pain in her right arm. She received compensation benefits from February 3 to August 15, 1985. Those benefits were paid in recognition of a right elbow disability. The worker subsequently sought entitlement for a right wrist disability. The Board denied this claim. Objections by the worker to that decision were denied by the Decision Review Branch, on March 1, 1988, and by the Hearings Officer in the decision noted above. The worker now appeals to the Tribunal.

The issue before the Panel is whether the worker's right wrist condition resulted from her employment as a cashier.
THE PANEL'S REASONS

(i) Background

The worker is 54 years of age. She stopped work on January 30, 1985, because of pain affecting her right arm. For the previous 30 years she had been employed as a cashier.

The problem giving rise to the worker's lay-off in January 1985 had actually begun the previous month. The worker stated that in early December 1984, she experienced a steadily worsening sharp pain in her right elbow that radiated down the outside of her right arm to just above her wrist. The worker consulted with a chiropractor, J. Morris, who noted inflammation of the "common extensor tendon and muscles of posterolateral forearm". He confirmed the worker's description of pain from the elbow to the wrist in the right forearm.

On December 28, 1984, the worker saw her family doctor, Dr. F. Greco, who diagnosed her as having "humeral epicondylitis" in the right arm. Because of increasing difficulty performing her job, the worker stopped work on January 30, 1985.

Dr. Greco referred the worker to a specialist, Dr. J. Wardill, who noted symptoms of pain and numbness in the right arm from the elbow down. Dr. Wardill raised the possibility that the worker had carpal tunnel syndrome.

The worker was then seen by a neurosurgeon, Dr. A. Adegbite, who noted a history of pain beginning in the right wrist and gradually spreading to the right elbow. Dr. Adegbite indicated that the worker's symptoms were consistent with right carpal tunnel syndrome.

However, nerve conduction tests performed by Dr. A. Rastogi, on June 3, 1985, found no evidence of carpal tunnel syndrome. Following that examination, the Board ruled out carpal tunnel syndrome as a factor in the worker's ongoing disability but granted the worker entitlement to compensation for lateral epicondylitis of the right elbow. Benefits were granted to the worker for this condition.

These benefits were terminated on August 15, 1985, following the receipt by the Board of a report from Dr. Wardill indicating that the worker had no continuing significant symptoms of epicondylitis. Dr. Wardill indicated that the worker should be able to perform her job.

The worker was unable to return to her job. She had a second round of nerve conduction studies on September 4, 1985. The result of those studies were outlined in a report of that date by Dr. C. Godfrey, a physiatrist:

All nerve conduction latencies and velocities, motor and sensory are within normal limits. No abnormalities on needle examination. This is a normal electromyographic examination. Because of symptoms I suggest a trial of a CT splint is indicated. The patient feels an operation would help her but I pointed there was no evidence of a block.
Dr. Greco then arranged for the worker to be seen by a general surgeon, Dr. R. Gay. In a report dated January 10, 1986, Dr. Gay diagnosed possible carpal tunnel syndrome. He went on to state:

My feeling is that if she has carpal tunnel syndrome it has no connection with the injury to the shoulder or elbow and I do not propose to attempt to put this through the Workmen's Compensation Board.

Dr. Gay did, however, arrange for the worker to undergo surgery which he performed on January 30, 1986. In his operation report, Dr. Gay noted:

A longitudinal incision was made over the flexor aspect of the wrist and the flexor retinaculum was completely divided. It was moderately thickened and moderately tight on the median nerve. The nerve was completely released.

We note that the operation report did not indicate either a pre-operative or post-operative diagnosis. Those were left blank on the operation report.

In a report dated February 21, 1986, Dr. Gay stated the following:

I told her that as far as I was aware there was no evidence to suggest that work as a cashier caused an increased incidence of carpal tunnel syndrome. However since she seemed to be in severe discomfort I offered to operate on her wrist, thought giving her no guarantee of a cure.

She accepted this course of treatment and on the 30th of January 1986 I performed a right carpal tunnel release.

I saw her in my office today and she reports very good improvement. All the tingling in the thumb, middle and index finger has disappeared and she feels very much better. The scar looks very good and she has a good range of wrist movements and excellent power in the hands.

She is still however, complaining of some discomfort on the lateral side of the right elbow and some tingling of the little finger of the right hand.

Because of her continuing problems, the worker was referred to Dr. J. Nethercott, physician-in-chief of the Department of Occupational and Environmental Health at St. Michael's Hospital in Toronto. It is not entirely clear that Dr. Nethercott examined the worker. Reports from Dr. Nethercott are dated some two years after the initial referral to him (see below).

Dr. Nethercott in turn referred the worker to Dr. R. Shupak, a rheumatologist. In a report dated July 10, 1986, Dr. Shupak noted a history of elbow pain followed by developing wrist pain. Dr. Shupak went on in her report to state:
She then attended the Lockward Clinic of Toronto where a carpal tunnel syndrome diagnosis was entertained. The EMG nerve conduction test, however, was normal. Her symptoms were quite consistent with carpal tunnel and she underwent a carpal tunnel release by Dr. Wardill [sic]. However, this did not give her any benefit. Her symptoms included numbness of the second, third and fourth fingers which awakened her at night. There was no atrophy of the muscles.

Currently she complains of a flexion deformity of the right finger associated with pain which radiates towards the wrist and up towards the elbow and shoulder.

**IMPRESSION:**

I could not find any musculoskeletal cause for this woman's complaints. The latter epicondyle was not tender and attempting to break the dorsi flexors of the wrist did not reproduce her pain there. The wrist itself has a good range of motion, no evidence of swelling and no stress pain. However, she does have objective neurological deficit which incriminates the C-7 nerve. I am not sure at what level this nerve is incriminated, however. Whether this is a brachial neuritis or a nerve root lesion from the neck remains unclear.

Dr. Shupak referred the worker to a neurologist, Dr. N. Bayer. In a report dated August 1, 1986, Dr. Bayer set out the following assessment:

On the present basis I cannot find any neurological deficit in this lady save for very mild weakness of the right abductor policis brevis, probably residual of a recent carpal tunnel syndrome.

Dr. Nethercott's impressions were set out in two medical reports. The second of those reports, dated July 29, 1988, contained the following information:

I do believe that her elbow condition would have prevented her from performing her regular duties. The only connection that one might see between her elbow and wrist condition might be that she has a predisposition to develop inflammatory changes with repetitive motion which may be reflected in both sites. It is not clear to me how the elbow condition could have predisposed to carpal tunnel syndrome.

In spite of Dr. Gay's comments I think the repetitive movement of the wrist which would be involved in this patient's work as a cashier could account for her carpal tunnel syndrome.
The Board's position in this matter is reflected in two medical reports prepared by Board consultants. The first, dated August 12, 1986, contains an opinion from Dr. J. Gendron:

I am unable to relate this work lady's hand and wrist problems with her compensable lateral epicondylitis. The two areas of anatomy are almost one foot apart and anatomically I cannot see where we can reasonably consider the most recent complaints as being related to her compensable epicondylitis from a medical point of view.

A more detailed opinion was expressed by the Board's Senior Medical Consultant, Dr. E. Macfarlane, in a memo dated December 17, 1987. That memo reads as follows:

As I have pointed out before, I believe that a right lateral epicondylitis and a right carpal tunnel syndrome are not compatible with the activities of one job. If the job produces stress on the origin of the extensor group of muscles at the elbow, then I cannot see that this would also cause a carpal tunnel syndrome at the wrist. The carpal tunnel usually is narrowed due to flexor tendonitis, hence the pressure on the median nerve. It would be difficult to see the activity, therefore, stressing the extensor group and the flexor group at the same time sufficient to cause pathology in two areas.

However, to answer your specific question, I do not see that the working of a cashier register would be sufficient to cause, for example, a flexor tendonitis that would in turn cause pressure on the median nerve. I do not see that the movement of the hand working the cash register either would directly result in pressure on the median nerve sufficient to cause a carpal tunnel syndrome.

The worker has continued to experience pain in her right arm affecting her elbow and wrist and has not returned to work since her lay-off of June 30, 1985.

(ii) The Panel's conclusions

Because of some contradictions in the medical evidence the Panel sought a further medical opinion, post-hearing, from one of the Tribunal's Medical Assessors. That report, marked as Exhibit #4, was prepared by Dr. J. Humphrey, a neurologist. Reference to Dr. Humphrey's report will be made below.

After reviewing the medical evidence presented to us, the Panel concludes that the worker is not entitled to compensation benefits for carpal tunnel syndrome because, in our opinion, it is more probable than not that the worker's symptoms of wrist pain were not caused by carpal tunnel syndrome.
We also conclude that the worker has no entitlement to compensation benefits for her wrist/hand disability because that condition did not result from the worker's employment as a cashier.

Both conclusions are discussed below.

(a) Did the worker have carpal tunnel syndrome?

The evidence in support of the conclusion that the worker has had carpal tunnel syndrome consists of clinical impressions on the part of the worker's family doctor, Dr. Greco, and the surgeon who performed the carpal tunnel release, Dr. Gay. Dr. Adegbite also suggested that the worker's symptoms were consistent with carpal tunnel syndrome although we note that his perception of the history seems to be incorrect in that he describes an onset of pain starting in the right wrist and moving up to the elbow. This history appears to be inconsistent with the history generally accepted in the medical reports that the worker's pain started in the right elbow and gradually began to affect the worker's right hand.

The evidence against a diagnosis of carpal tunnel syndrome is summarized in the report of Dr. Humphrey, the Tribunal's Medical Assessor. Dr. Humphrey, in his report, stated the following:

There are problems and discrepancies in the interpretation of this woman's complaints and the medical evidence filed since December 1984 and subsequently through 1985 and 1986. No objective findings are documented from her various assessments and examinations by any of the specialist physicians who were asked to see her. Her carpal tunnel syndrome was not confirmed by any nerve conduction studies carried out in two experienced electromyography laboratories.

By January 31, 1985, when she left working as a cashier, there are no complaints of right hand pain, or numbness, or problems with her right wrist described in the medical reports from the chiropractor she initially saw, or her family physician Dr. Greco. At that time her complaints were centred about her upper forearm at the elbow.

After describing the results of the nerve conduction studies in detail, Dr. Humphrey went on to state:

It was Dr. Gay, a general surgeon, who saw this patient in January 1986 and who felt clinically she had a history of median nerve compression at the right carpal tunnel. He felt she should have surgery on this as her symptoms had become persistent despite the negative nerve conduction studies. At surgery Dr. Gay describes the carpal ligament forming the carpal tunnel as being "moderately thickened" and "moderately tight on the median nerve". He does not mention whether the nerve was actually flattened by the compression of the ligament as it should have been. Subsequently her relief of symptoms following this
procedure in her right forearm and hand was short-lived, and she continued to have complaints when examined by other specialists during July and August 1986 without any reason being apparent of why she continued to have symptoms.

I feel after reading this file carefully and reviewing all the medical reports that there is little likelihood this woman had a median nerve compression at her carpal tunnel.

Later in his report, Dr. Humphrey stated:

If indeed this woman did have a carpal tunnel syndrome and median nerve compression, symptoms may have occurred prominently in her right hand and wrist. Often the symptoms occur following activity and work in the evening and especially at night when the patient's hand is at rest sometime after the activity.

In reviewing the worker's testimony to us, and her descriptions of her symptoms to her physicians, we note that the symptom pattern characteristic of carpal tunnel syndrome described by Dr. Humphrey, in the last paragraph above, does not appear to have been present in the worker's case. The symptoms that were eventually attributed to possible carpal tunnel syndrome were described by the worker as an extension of her elbow problem and not something that developed acutely following repetitive activity.

The fact is that the worker's wrist symptoms seem to have become gradually worse after she stopped her employment. The fact is also that, notwithstanding Dr. Gay's statement that the surgery helped the worker, the worker's description of her symptoms to Dr. Shupak, after the surgery, are quite similar to the symptoms described to Dr. Gay, before the surgery. We note that Dr. Shupak, in her report of July 10, 1986, quotes the worker as indicating that the surgery did not give her any benefit.

We note also that examinations of the worker done after the carpal tunnel surgery was performed, while revealing symptoms similar to those that were present prior to the surgery, do not offer carpal tunnel syndrome as a diagnosis for those symptoms. Dr. Bayer, the neurologist who saw the worker in 1986, concluded in his report of August 1, 1986:

I cannot find convincing evidence for cervical nerve root dysfunction and there does not seem to be evidence of a tennis elbow or anything local to account for her symptomatology...I cannot say why she is having this pain in the right forearm except that it must by myogenic [of muscular origin].

And while Dr. Nethercott, in his report of July 29, 1988, suggests that repetitive use of the wrist could account for carpal tunnel syndrome, he does not, in fact, provide any reason for concluding that the worker was experiencing carpal tunnel syndrome.
We conclude therefore that the weight of the evidence establishes that the worker's wrist condition, such as it is, was not brought on by carpal tunnel syndrome. We do not make any conclusions as to what the cause of the worker's ongoing right arm disability might be. The medical evidence offers several explanations, but in our view, that issue is not before us.

(b) Did the worker's wrist disability result from her employment as a cashier?

The basis for the worker's claim that her wrist condition was compensable was that the worker had developed carpal tunnel syndrome as a result of repetitive use of her right hand. The Panel has found above that the worker's wrist condition was not, on a balance of probabilities, attributable to carpal tunnel syndrome. The question remains as to whether the worker's wrist condition could nonetheless be said to have resulted from her work as a cashier.

It should be noted, parenthetically, that the medical evidence was clear in establishing that the worker's wrist condition did not develop from her compensable elbow condition. A number of the medical reports cited above state this unequivocally and such a relationship was not, in fact, argued by the worker.

The worker's argument concerning the causal relationship between the wrist condition and the worker's employment was based on an assumption that the wrist condition reflected the presence of carpal tunnel syndrome. The worker's evidence in support of this submission consisted of the opinion of Dr. Nethercott (cited above) and medical literature that established an apparent relationship between cashier work and the development of carpal tunnel syndrome. Having concluded that the worker does not, on a balance of probabilities, have carpal tunnel syndrome, we find that evidence to be of little assistance.

The argument remains that the worker's wrist condition developed simultaneously with the elbow condition as a result of repetitive use of the right arm. This possibility is suggested in a statement from Dr. Nethercott's report of July 29, 1988:

The only connection that one might see between her elbow and wrist condition might be that she has a predisposition to develop inflammatory changes with repetitive motion which may be reflected in both sites.

The Panel's review of the evidence suggests three reasons why such a development would not have occurred.

The first is that the elbow injury as described by the worker to a Board Investigator, in February 1985, indicates that the worker developed a sharp pain in her outer right elbow half way through her shift on December 5, 1984. Although the worker cites no specific incident as causing this pain, she does indicate something other than a gradual onset.
The second factor is that the worker's pattern of symptoms suggests the gradual involvement of the wrist after the worker ceased her employment when she was no longer performing repetitive movements with her right hand. It goes without saying that the worker's wrist condition did not improve when she stopped the repetitive activity that allegedly gave rise to the condition.

Finally, there is nothing in the medical opinions of the worker's attending physicians that suggest that they saw a relationship between the worker's wrist injury and the worker's employment. Dr. Gay, the surgeon who performed the surgery on the worker's right wrist, was unequivocal in his view that the condition was not related to the worker's employment nor is there anything in any of the other medical reports that supports a relationship between the wrist condition and the worker's employment. We note that Dr. Macfarlane, in his memo of December 17, 1987, outlined his views of the mechanical reasons why the wrist injury would be unlikely to result from the worker's job. Dr. Nethercott does support a work relationship but does so on the assumption that the worker had carpal tunnel syndrome. It is not, in fact, clear from Dr. Nethercott's reports what the basis for his opinion was, other than his belief that the worker performed repetitive work and had carpal tunnel syndrome. Given our finding above concerning the lack of evidence of carpal tunnel syndrome, we can give Dr. Nethercott's opinion on work-relatedness little weight.

Taking all of the foregoing together, we conclude that the evidence establishes, on a balance of probabilities, that the worker's wrist condition did not result from her activities as a cashier.
THE DECISION

The worker's appeal is denied.

DATED at Toronto, this 2nd day of April, 1991.