System Safety Services

OSPAT PTY LTD

Draft #1

Fit For Work Indicator

Pass

Report to Supervisor

A New and Effective Safety Tool For Our Industry

Preface

The **Fit For Work Indicator** (FFW) was developed by OSPAT Pty. Ltd., an Australian company located in Perth, Australia.

OSPAT stands for **O**ccupational **S**afety **P**erformance **A**ssessment **T**echnology and is a division of Romtech Pty Ltd.

The **Fit For Work** Indicator was developed as a result of legislation introduced in Queensland Australia that dictated that mine workers had a responsibility to:

> (e) to work at the coal mine only if the worker or person is in a fit condition to carry out the work without affecting the safety and health of others.

This in turn gave the mining companies the responsibility or duty of care to ensure that their employees were indeed fit to work safely. Random drug and alcohol testing seemed like the answer but it did little to reduce the number of accidents with resulting injuries that were occurring. Another problem was the reluctance of the union to accept the evasive drug testing as a condition of employment.

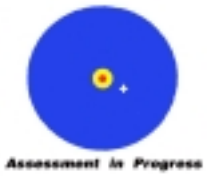
The use of the **Fit For Work** Indicator provided a non-evasive tool that has lowered the incident and injury rate significantly and improved the home life of many of the employees.

This tool for safety can be equally useful for other industries where the alertness of the individual can be critical to their and others safety.

How it Works

The **Fit For Work Indicator** uses a neuro-behavioural performance measurement of cognitive psychomotor skills involving hand-eye coordination to identify the occurrence of impairment for further investigation by supervisors.

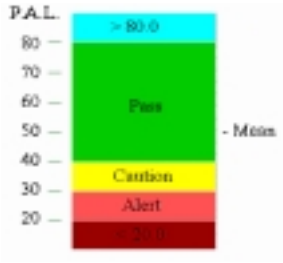
It does this by using a computerised terminal to measure a person's reactions in a simple coordination test, comparing results against their own performance history. The non-evasive test requires them to maintain a moving **+** in the middle of the circle for a specified period of time while the system analyses their performance. The moving **+** or jitter as it is called, randomly moves in any direction every 1/10th of a second.



The participant then tries to bring it back to the center with a track ball much like a computer game.

The test begins easy and does not record for the first few seconds to allow the person to prepare. It then gets progressively more difficult until the person has difficulty keeping up. If the person is slow to react, it stays at a less difficult stage.

The **Fit for Work Indicator** performance assessment takes less then a minute of the participant's time and the results are based on what is called the individuals **P**ersonal **A**ssessment **L**evel or **PAL**. The PAL is the person's personal profile and is based on a series of tests or practice runs made by the individual. This profile is given a value of 50 (That persons mean average score) and while the 50 will never change, the mean average score will very gradually change over time as the person becomes better with practice or worse with age. Thus each is tested against himself and is not compared to anyone else.



The assessment takes about 40 seconds and will result in a score compared to the person's PAL. If they do better, up to a PAL of plus 30 or 80 maximum, they receive a **Pass** and proceed to work. If they do worse then normal down to minus 10 PAL they also receive a **Pass** and proceed to work. If their score is between minus 10 and minus 20,(30 to 40 PAL) they receive a **Caution**. A score in excess of minus 20 (0 to 30 PAL) will result in an **Alert** and Report to Supervisor.

If the person is not trying, (the person is not moving to correct the movement or moves in a direction contrary to bringing the jitter back to the center) the program stops and informs the individual that they appear to not be trying and told to start again.

What are the Results?

About 84% of the time a **Pass** will be the result of the assessment. The program is very sensitive and thus the results will vary from day to day just as our alertness and ability to concentrate varies from hour to hour. The person can score better then usual up to a plus 30 or PAL 80. They can also score worse up to a score of minus 10 (PAL 40) and still receive a **Pass**.

About 14% of the time the participant will receive a **Caution**. This serves to inform the participant that they may not be their usual self . The result is recorded on the person's computer file but they are not required to report to supervisor or inform anyone unless they chose to.

About 2% of the time an **Alert** will occur. If the person's score is in excess of PAL 80 or less then PAL 30, the person will receive an **Alert** and report to supervisor. A score in excess of PAL 80 is very rare (>800 to 1) and would need to be investigated to determine the reason
A score of less then 30 will also trigger the **Alert** and report to supervisor result. These also must be investigated for cause.

What the Scores Indicate

The **Pass** is an indicator that the persons alertness and fitness to work is normal and s/he goes to work knowing they are fit to work safely.

The **Caution** indicates that the person may not be up to their normal self but if they exercise caution as it advises, they should have no problem. It is a warning to *"be extra careful out there today."* We all have days like this and the person now knows to be extra vigilant during this day.

The **Alert** is the <u>cause for possible concern</u> indicator. This alert occurs when the person's PAL score is in excess of 80 or lower then 30.
A score in excess of 80 may be an indicator of a companion (who is more competent at hand-eye coordination) taking the test for the person or the person is possibly taking a performance enhancing drug. A score in this range would be considered suspicious and should be investigated.
The Alert below PAL 30 is divided into a PAL 20 to 30 Alert and a below PAL 20 Alert. Both will call for an investigation but the below 20 is extremely poor and may be an indicator of a person "playing silly person."

What could cause the Low Alert Scores?

A low PAL score that results in an Alert and report to supervisor could be caused by a number of problems. For simplicity's sake we will use the acronym **IMSAFE** to list some of the possible causes.

I = **I**llness. This will often be found to be a cause as the person is not feeling well and is unable to do as well as normal.

M = **M**edication. Any drug, over the counter, prescription, or illegal can impair the persons performance.

S = **S**tress. This problem will crop up from time to time in any person's life. The source of the stress can be personal, home or work related.

A = **A**lcohol. This is often considered to be a primary cause but the fatigue is four times more likely to be the problem.

F = **F**atigue. This is a problem that we are just beginning to realize the detrimental effects of.

E = **E**ating. Low and high blood sugar as well as dehydration will all result in a degradation in work performance.

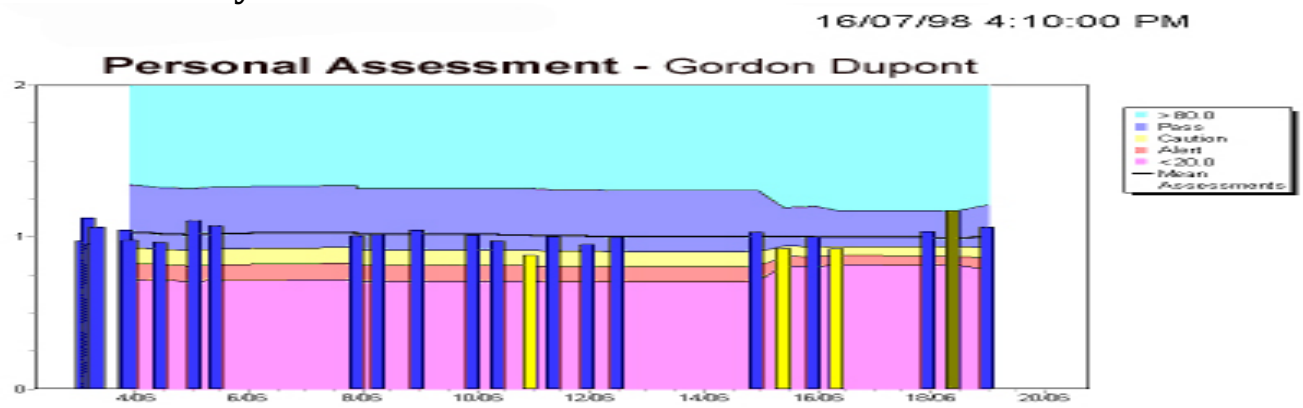
What's a Supervisor to Do?

At first glance, it would appear that the supervisor is going to have a lot more responsibility and work when this is implemented. In fact, the supervisor has <u>always</u> had the responsibility to ensure that the employee was fit for work and he now has a powerful tool to assist him with that responsibility.

The supervisor will be provided training that will enable him to interpret the assessment results. The supervisor will know via an alert on his computer that a certain person has failed. Statistics have shown, 3% of the employees will cause over 30 % of the Alerts.

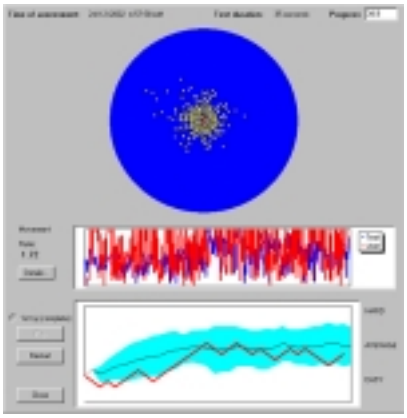
Here are some of the things the supervisor can look at even before the employee shows up.

1. Consistency



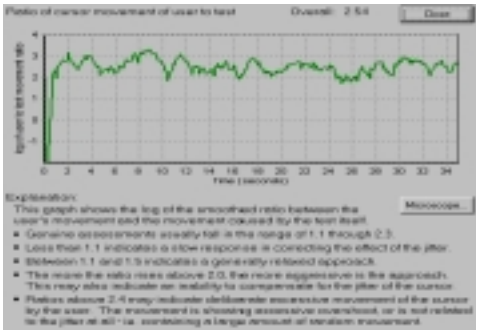
The personal assessment consistency will show in simple coloured graph form, the persons previous scores for the time period specified. The Passes, Cautions, and Alerts are all shown.

2. Replay Assessment



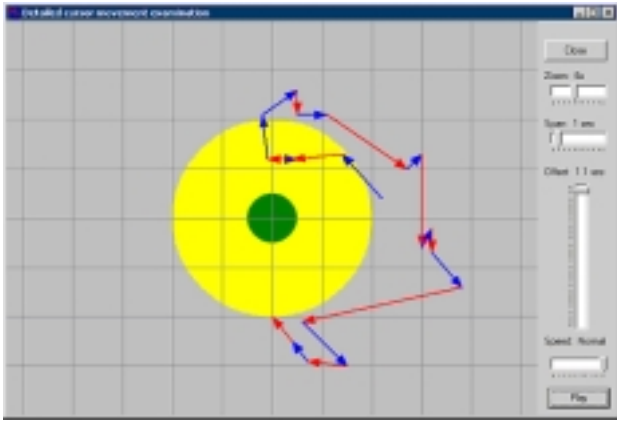
a) The replay assessment will show the where the jitter moved every 1/10 sec by leaving a "bullet hole" mark. A Blue line will illustrate the person's cursor movement to correct the jitter.
b) The second graph illustrates the jitter's movement versus the user's movement. This is compared and a ratio provided. (See next screen)
c) The third graph shows the difficulty of the test against the persons last 20 assessments.

3. Movement Analysis



This graph serves to illustrate the ratio of the cursor movement versus the jitter movement. A normal ratio is between 1.1 and 2.3. If the person is not trying, this is one area where it will likely show up.

4. Microscopic dialogue



This is one of the most useful analysis tools as it enables the supervisor to replay in slow motion (speed of his choice) the actual test, with the jitter bug movement in blue and the participant cursor movement in red. The movement can be stopped or paused at any time and viewed. This is very useful to show the participant their results.

5. The Questionnaire

Any person who receives an Alert is required to fill out a 10 question questionnaire that asks for possible reasons for the Alert such as: Physical injury? Fatigue? Stress? Alcohol? Etc. This is a useful basis for determining possible causes.
The properly trained supervisor can now make an informed decision toward what is the best option for the participant and if he/she is really **Fit For Work**. The supervisor must always have an Employee Assistance Program in place to allow them to refer the person to an expert.

What needs to be done to ensure success?

To obtain maximum benefit the **Fit For Work** program can not be a stand alone program . It needs to be part of a Safety Management Program and part of a program designed to assist NOT catch employees. For a few this may require a culture shift.
The program must be seen by all as a tool for safety. This will require training and education for all AND a commitment by upper management to support the program. The training will provide reasons and purpose of the program as well as the benefits. It will train for ALL causes of impairment and provide a clear picture of what the employee can do in order to be at peak performance. It increases the awareness that each employee has toward working safely.
An Employee Assistance Program (EAP) must be in place to assist those who are shown to need help. This will also provide the supervisors with an opportunity to send an Alert person to an expert for a second opinion and assistance.

What's in it for the company?

Since implementing this program is going to cost both time and money, what kind of benefits or return on investment can a company expect?
 # 1 The number one benefit has to be that the company can, in any court of law, demonstrate that it has shown "duty-of-care" towards it's employees. In other words it can demonstrate that it has used the **Fit For Work** program to reduce the chance of human error causing incidents, injury or death due to the person having a low level of performance.
#2 Lost time due to injuries should go down. Some companies introducing this program reported reductions in excess of 85%. For example:

-Gold mine # 1 reduced lost time due to injuries from 14 to 3 in 10 months.
-Gold mine #2 reduced lost time from 22 to 2 and remained in the range of 2-5 for 5 years.
-Coal mine reduced from 33 to 3 in the first year and remained 3-5 for 6 years.

All the above represent a cash savings in lost time and increased productivity.
#3 Many participants have reported an improvement in their quality of life as the Fit For Work program provided them with knowledge on how to improve their quality of life.
#4 Improved productivity may be a recognized benefit as employees recognize and change behaviour that lowered their performance.
#5 Both your customers, the regulatory body and your employees will see that you are very serious about safety - both the companies safety and theirs.
#6 The program can do MUCH more, from organizing your shift schedules to maintaining your basic employee records.

What's the cost?

The Fit For Work Indicator system is licensed on a yearly basis to a company for a specified number of empoyees or users. This license .....

The **Fit For Work** system requires:

a) a Database file server. (dedicated computer)

b) a number of assessment terminals (number is determined by the number of employees, locations and times they report for work) Each terminal will require both a monitor and a trackball type of mouse.

c) a number of supervisor "Client" PCs.

d) an IT person to marry the system into your existing computer system.

e) booths to carry out the test in privacy.

f) training of ALL company personnel.

Discounts are available depending on length of contract, number of personnel and other factors.
We will be pleased to sit down and discuss your specific needs and provide you with a quote.