

MATO GROSSO STATE UNIVERSITY

MILITARY POLICE

TRAINING, DEVELOPMENT AND RESEARCH CENTRE

COSTA VERDE MILITARY POLICE ACADEMY

PUBLIC SAFETY MANAGEMENT SPECIALIZATION/  
OFFICERS TRAINING PROGRAM

**THE ROLE OF THE TMM SYSTEM IN THE IMPROVEMENT  
OF TRAINING PERFORMANCE ON 1ST YEAR STUDENTS  
FROM THE MILITARY POLICE OF MATO GROSSO STATE**

ÓTONI CÉZAR CASTRO SOARES

Várzea Grande, MT  
2009

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FROM THE MILITARY POLICE OF MATO GROSSO STATE**

*Monograph presented to the Police Officers Training Coordination  
Program – Lato Sensu Post-Graduation compulsory requisite  
for the Public Safety Management Specialization*

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2009

# **THE ROLE OF THE TMM SYSTEM IN THE IMPROVEMENT OF TRAINING PERFORMANCE ON 1<sup>ST</sup> YEAR STUDENTS FROM THE MILITARY POLICE OF MATO GROSSO STATE**

Monograph submitted to the Examining Board which consists of professors from the Public Safety Management Program at the Military Police Academy and who were selected as qualified in granting the **PUBLIC SAFETY MANAGEMENT SPECIALIZATION DEGREE.**

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To my colleagues for the companionship and true friendship.

*"The value of great men is measured by  
the significance of services rendered to  
humanity"*

*Voltaire*

# ABSTRACT

This paper presents two experiments to verify the influence of the TMM System on student performance officers of the 1st year of training course for officers of the PM / MT, occasionally on the psychological variables: concentrated attention, anxiety, aggression, resistance to fatigue and productivity . The methodology for measuring the object of research was the adoption of the experiment "1" (survey of levels of variables, ff exposure to the TMM System) and experiment "2" (identification of levels of variables after the exposure to the TMM System). For the purposes of this research we used 2 sound waves that are part of the larger TMM System and used them in addressing the activity of teaching the military police, making a correlation of the variables proposed by the study required by the office to which students are trained officers. The results are later explained in the methodology adopted to measure the variables studied, before and after, the exposure of the sample to the sounds of the TMM System. Then the final results are presented that were achieved by the research.

Keywords:

TMM System - Performance - Students of the Military Police Official

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# Glossary

<b>CA</b>	Concentrated Attention
<b>ADD</b>	Attention Deficit Disorder
<b>ADHD</b>	Attention Deficit Hyperactivity Disorder
<b>CVMPA</b>	Costa Verde Military Policy Academy
<b>AVE</b>	Audio-Visual Entrainment
<b>BWE</b>	Brainwave Entrainment
<b>CBO</b>	Brazilian Labor Classification
<b>BDE</b>	Board of Education
<b>COL MRP</b>	Colonel of the Military Reserve Pay
<b>CER</b>	Cerebral Stimulation Response (cortical evoked response)
<b>OTP</b>	Officers Training Program
<b>EEG</b>	Electroencephalogram
<b>FFR</b>	Frequency Following Response
<b>FMRP</b>	Faculty of Medicine of Ribeiro Preto
<b>CH</b>	Clinics Hospital
<b>LIO</b>	Labor International Organization
<b>WHO</b>	World Health Organization
<b>PLG</b>	Polygraph
<b>MPMT</b>	Military Police of Mato Grosso State
<b>MPSC</b>	Military Police of Santa Catarina State
<b>QI</b>	Intelligence Quotient
<b>MPTPR</b>	Military Police Training Program Regulations
<b>SAD</b>	Seasonal Affective Disorder
<b>SS</b>	Social Services
<b>PMS</b>	Pre-menstrual Syndrome
<b>ODD</b>	Oppositional Defiant Disorder
<b>MTSUU</b>	Mato Grosso South State University
<b>UPS</b>	University of Sao Paulo

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# INTRODUCTION

For a long period of time, There has been a question about the mystery of sound and of how it influences behavior, especially the feelings and emotions of human beings. Can a particular song alter our mood? Can it assist in physical activities such as in Physical Education? Can it reduce anxiety even depression such as those seen in specific therapy clinics?

There is something extraordinary in that relationship even somewhat mystic since the lack of explanation has not allowed for a more solid and incisive understanding of what science has revealed about its association.

Generally the influence of sound and music in brain activity is unquestionable. Helio Pothin, doctor of physiology and professor in the South of Mato Grosso Federal University, explains the following:

“The thalamus is shaped by several divisions and is located below the cortex, in the central region of the brain. It works by receiving information of the senses (vision, audition, taste and touch) and sends or distributes the information to other sections of the brain, including the cerebral cortex.

The hypothalamus is located below the thalamus and is formed by several nervous nucleuses; each one influences a determined part of the nervous system. In spite of being small, the hypothalamus has an important function in instructing autonomous actions such as hunger, thirst, regulating body temperature, sleep, alertness, gastrointestinal secretion, blood pressure, heart beats, sexual desire and sexual act, etc.

In order to instruct or influence so many functions, the hypothalamus sends its messages through the nerves and hormones through the blood. It sends hormones to the hypophysis gland which controls other glands, including the sexual glands, through hormones as well.

**Therefore, nervous stimulus sent by the ear, which are caused by sound, reach the thalamus in which then sends, as well, nervous stimulus to the centre of emotions, the prefrontal cortex and hypothalamus.**

Since Rock music has its own characteristics, its rhythms are turned into nervous stimulus into an established frequency reaching the thalamus. The thalamus, in turn, sends stimulus in a frequency to the hypothalamus, the prefrontal cortex or any other nervous section in the brain. The hypothalamus understands this frequency as an instruction to influence the perypheral glands, through the hypophysis hormones, in order to release its hormones, which will then increase or reduce the functions of specific organs. Depending on the music rhythm, electrical signals will be sent in different frequencies. Each frequency reaches different sections of the brain and can influence different functions or different behaviors.

**Hence, Rock music, has the power to influence behaviors such as anger, violence, sex and stimulate pleasure dependency. Therefore, it can increase the craving for drugs or behaviors that stimulate pleasure; thus, addiction.”<sup>1</sup>**

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<sup>1</sup> POTHIN, Hélio. *O Poder da Música sobre o cérebro*. Available at: <[http:// www.musicaeadoracao.com.br/efeitos/poder\\_musica\\_cerebro.htm](http://www.musicaeadoracao.com.br/efeitos/poder_musica_cerebro.htm) > Accessed on: 25 May 2009

Studies point out that music has repercussions on the electrical activity of the brain, as it is published by the newspaper agency of University of Sao Paulo:

“Tests carried out by the Laboratory of Neuropsychologists from the Hospital Doctors of the Faculty of Medicine of University of Sao Paulo of Ribeiro Preto, demonstrated the power of music on electrical cerebral activity as well as in increasing voice potential.”<sup>2</sup>

What is the connection of those studies with the Military Police? Why research a subject that is more connected to physics, psychology and neurology in the specialization of Public Safety Management?

If we consider that a policeman is part of the professional category of elevated risk and high level of stress such as stock brokers, flight operators and others, Moraes (1992) affirms that it is then necessary that such agents have higher skills and a sense of balance that must be presented in order to secure the well-being of society. Given that it is complex and with an abundance of several types of stresses, it is then demanded by that professional dedication, high level of concentration and attention during its job performance.

According to the World Health Organization (WHO), the Military Police profession is one of the most stressful in the world. Data from the International Labour Organization (LIO), indicates that those who expose their life to high risk situations are potentially more prone to lasting stressful factors.

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<sup>2</sup> A INFLUÊNCIA da música na atividade elétrica do cérebro. Agência USP de Notícias. São Paulo, 17 oct 2001. Available at: < <http://www.usp.br/agen/repgs/2001/pags/086.htm> > Accessed on: 26 may 2009.

One cannot forget that these reflexes find a way into the personal life of the military police, provoking behavior changes that can go from a simple bad mood, demonstrations of impatience, reduction of concentration, increase of blood pressure, aggressiveness, even the appearance of physical symptoms like headaches, body pain, sleep and appetite changes. In addition, there is also the risk of depression, chemical dependence, mental disorders and even marital separations. All these factors do not only alter the routine of a policeman but also compromises their quality of life.

It is then suitable to show data retrieved from specific services at the Social Work Military Police sector to reinforce that this picture is not distant from the Mato Grosso Police reality.

**Chart 1 -  
MPMT - Social Services - 1<sup>st</sup> trimester, 2009**

<b>Claims</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>Total</b>	<b>%</b>
Dependents of Alcohol/Drugs	51	7	18	76	26
Psychological disorder	48	14	27	89	30
Other claims	8	38	81	127	44

*Source: SAS PM/MT-2009*

A cycle is created in which the police officer takes the stress, loads of work, sleep deprivation, impatience, and bad mood from its existing work and replicates it in the home. This in turn changes the emotional state of a police officer.

It is important and beneficial to have research in areas that contribute to the minimization of the exposed stressful factors and diseases that could improve the life quality of the military police (which as a result will improve the services rendered to society), as well as the social credibility of the Military Police of Mato Grosso State Institution.

Research points out that sounds registered by our hearing is capable of interacting with the brain frequency of the listener; thus, altering it and causing considerable changes for better or worse.

It was during the development of these ideas that the author came across the work of Professor (honorary) Morry Zelcovitch of Toronto, Canada. Zelcovitch developed the TMM System which offers the conditions to the objectives of this monographic research. At last, it works with sounds that are able to provide to the listener concentration improvement, resistance to fatigue, reduction of stress and sleepiness, well-being, among others. It favors a horizon of comparison in the influence of sounds in the improvement of work performance by policemen.

However, how to test it in the military police who works in the most diverse sectors in the capital and in the outskirts, and in a variety of numbers, without disregarding their time off work? What about the control of the police officers during the administration of the tests? These questions substantiated the idea of carrying out the tests with the Officer Students from the Costa Verde Military Police Academy, specifically those enrolled in the 1st year.

Their facilities also qualified for the process of sampling with emphasis to the execution and supervision of the methodology: a pre-established schedule for the tests, place of implementation, physical and mental health tested for admission, and necessary materials already existent such as notebooks, mp3s, and ear phones.

The purpose of this research is to answer the following question: **Does the TMM System have an influence in the performance of 1st year Officer Students enrolled in the Officer Training Program?**

The formulated hypothesis is outlined in the following matter: If the TMM System is a tool that favors, among other advantages, an increase of concentration, productivity, resistance to fatigue and a reduction of aggression and anxiety, then it will show an improvement in the activities done by the 1<sup>st</sup> year Officer students.

The objective of this work is to present the TMM System (which works with brainwave entrainment), and to verify its influence in the performance of activities exercised by 1<sup>st</sup> year Officer students enrolled in the Police Training Program, specifically on psychological variables such as concentrated attention, anxiety, aggressiveness, resistance to fatigue and productivity.

The work is systematized in the following matter:

**Chapter 1** – Addresses the TMM System, its origin, author, its function and the subject of brainwaves.

**Chapter 2** – Presents the training of the Officer Students, the history of the Academy, the profile of the Military Police student, and the relation of this profile with the variables proposed in the System.



**Chapter 3** – Describes the methodology of the research.

**Chapter 4** – Presents the results and discussions obtained in the application of the System on 1st year Officer Students of OTP.

## **1. THE TMM SYSTEM ORIGIN**

Zelcovitch (2009) notices that from the time as a child he had many problems, such as hearing thousands of voices in his head which he believes contributed to a serious depression. He always found himself getting into trouble and was accident prone. He dislocated his shoulders more than 150 (hundred and fifty) times, not counting the broken bones, shredding of tendons and ligaments and other injuries.

He remembers this time of his life when this phrase became dominant in his mind. "Life is only a disease, for which there is no cure, but death". In view of his difficulties, he would very often think on "how great it would be, to be ... no longer here.

He confesses that something inside of him made him search his inner self, at which point he began to notice that sometimes time seemed to move quicker and more pleasantly than others. Upon this realization, he realized that when this phenomenon occurred the sounds that he was hearing were rhythmical in nature and when time seemed motionless, terrifying, the surrounding sounds were much more out of place from nature.

All of this came to happen during a 15 year odyssey of research in the field of Brainwave Entrainment (BWE). After many years of using it with other peoples work with some limited success, he was determined to discover why the recordings seemed to work, but with little effect, when the research that he read about suggested more dominant effects than what he and others were feeling.

He decided that the best path to understanding would be by being close to an expert in the area. He got in touch with the worlds top researcher and indeed expert in the field of brainwave entrainment, David Siever ([www.mindalive.com](http://www.mindalive.com)), and obtained precious information that he could not have gathered anywhere else.

During this phase of his life, he deepened his studies of the human brain and psyche and began researching the field of brainwaves, noticing, again, that time seemed to go by quicker and more pleasurable than normally.

He received training and is the first and only person in the world that may be termed a "Certified Brainwave Entrainment Engineer". His education is supported by an Honors degree in Psychology with a minor in Sociology. He expresses his desire in helping others to be everything that they can be ... naturally, without the use of dangerous medication.

## **1.1 THE TMM SYSTEM**

The TMM System was developed by Professor (honorary) Morry Zelcovitch and has scientific grounds based on brainwave entrainment. *Entrainment* is a term that was picked up by physics which simply means the tendency of two vibrating bodies joined to vibrate in harmony. For example, a tuning fork when struck and put near another it will cause the second one to vibrate in the same frequency of the first one. In the brain, entrainment of brainwaves (BWE) occurs.

Professor (honorary) Zelcovitch (2007) explains that the brain is made up of approximately 100 billion nerve cells, called neurons. Neurons have the capacity to transmit electrochemical signals, and to better understand it, he suggests thinking of it as a super-computer.

This super-computer is able to communicate with the rest of the body, transmitting electrical signals by using chemicals named neurotransmitters. If these chemicals or neurotransmitters are out of balance, the person will not manage to reach its full potential. This activity has been measured by scientists by looking at the electrical current from the surface of the brain using Electroencephalogram (EEG) technology which measures those discharges and records them as brainwave patterns.

He asserts that the individuals state of mind is determined by their brainwave activity. These brainwaves can be put into groups in accordance to the frequency range that is directly connected with the person's state of mind.

**Beta** (13Hz - 30Hz) is the state of normal, wakeful consciousness. When working, driving, speaking, etc. ... it is in Beta. A high activity of Beta frequency sometimes is associated with anxiety, panic and stress.

**Alpha** (8Hz - 12Hz) is the state of light relaxation, calm and focused mind. The Alpha state is called the high learning state, because the brain seems to be more receptive and opened to new information. People who meditate tend to do do in the Alpha state.

**Theta** (4Hz -7Hz) is the state of deep relaxation. Dreams and deep meditations are frequently associated with the state of Theta. Additionally, recent research indicates that this state might actually be the optimal learning state.

**Delta** (0,5Hz - 3Hz) is the slowest brainwave pattern. Research shows that maintaining awareness in Delta pattern it can open the way to the unconscious. Strong evidence exists as well that this may be the state where mental and physical healing occurs as well.

What if there was a way of training the brain to go to these different states spontaneously? Is it possible to induce the brain to any state of consciousness desired?

During contacts, Zelcovitch (2009) teaches that all brainwave patterns are important to mental functions. Due to the current life system, it has become more and more difficult for the body and the mind to return to a state of tranquility. This is the biggest reason to relearn or to train the way in which to recover full health and to rejuvenate.

Experiments and research in the effects and applications of BWE are being carried out in universities and between health professionals and educators.

Some benefits of BWE can include... the aid of concentration, creativity, memory, relaxation, motivation, more deep conscience, promoting long term emotional growth, clarity in ideas, stress and ache relief, help with Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD), learning, energy / vitality, inspirations, intuition / perception, objectivity / attention, solution of problems and, much more.

One of the easiest ways of stimulating the brain is through the ears by exposing them to a firm and precise pulsed/beat patterns. These patterns of sound work naturally with the brain and can produce incredible effects. The tendency of the brain to tune into and match to the external stimulus's frequency is called Frequency Following Response (FFR).

The author of the System suggests that it is easier for the brain to begin with a frequency close to the state of the listener and then to gradually vary it to the desire state. As our brain keeps on increasing its exposure to the stimulation, the FFR becomes responsible for a remarkable and totally natural change. The brain is led to create new neural pathways, changing the standards of transfer of perception of information and creating new ways of experiencing the world.

His research is linked to the studies of Professor (honorary) David Seiver CE, whom he finds to be the world-wide leader in these studies for he has been doing it and recognized as so for over thirty years. The following citation provides an insight to the understanding of this renowned scholar:

"Since the discovery of photic driving by Adrian and Matthews, in 1934, much has been discovered on the benefits of Brainwave Entrainment (BWE) or Audio-Visual Entrainment (AVE), as it is commonly known today. Studies are now available on the effectiveness of AVE in promoting relaxation, hypnotic induction and restoring somatic homeostasis, plus improvement cognition, and for the treating ADD, PMS, SAD, migraine headache, chronic pain, anxiety, depression and hypertension."<sup>3</sup>

In this article, Siever presents an historical entrainment, as well as, it illustrates the functioning of its audio-visual program and how it positively influences the way of living. This program is similar to the TMM System, however with the addition of a visual stimulant concomitant to that of sound.

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<sup>3</sup> SEIVER, Dave. *Audio-Visual entrainment: History and Physiological Mechanisms*. Available at: < <http://www.mindalive.com/articleone.htm> > Accessed on: 12 May 2009.

Another discovery from Professor (honorary) Seiver was to use brainwave entrainment in his program AVE (Audio-Visual Entrainment) to relieve pain and to improve and lessen the effects of anxiety and fear.

"A great quantity of sets of temporomandibular disorders and myofascial disorders are activated in relation to anxiety and fear as answers for challenging tasks, auto-criticism and daily stress. AVE as a passive meditation seems to effectively relieve these symptoms."<sup>4</sup>

In another study Seiver illustrates like his program AVE, based on brainwave entrainment that it can help in the treatment of affective disorders by removing the job of anti-depressants.

"Seasonal Affective Disorder (SAD) affects people from all nations, and not only those who are near to the poles of the Earth as might be thought. The treatment of SAD has been traditionally treated with the use of anti-depressants, and, more recently with light box therapy. Audio-Visual Entrainment (AVE) has also been shown beneficial in the treatment of this genetically based effective disorder and it's related to anxious, depressive, and dietary conditions."<sup>5</sup>

Seiver defends the efficiency of his program in aiding in the improvement of attention and learning.

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<sup>4</sup> SEIVER, Dave. *Audio-visual entrainment*. Available at: < <http://www.mindalive.com/articletwo.htm> > Accessed on: 12 May 2009

<sup>5</sup> SEIVER, Dave. *Audio-visual entrainment: the application of Audio-visual entrainment for the treatment of Seasonal Affective dirorder*. Available on: < <http://www.mindalive.com/articlefour.htm> > Accessed on: 12 May 2009

"A variety of disturbances, such as anxiety, depression and Oppositional Defiant Disorder (ODD), are very often co-morbid with ADD, thus creating a plethora of complications in treatment procedures. Audio-Visual Entrainment (AVE) is helpful in the treatment of ADD/ADHD. AVE has a great influence on the large diffusion of the dominant cortex in terms of frequency. AVE also has shown to produce dramatic increases in cerebral blood flow. Several studies involving the use of AVE in the treatment of ADD/ADHD and its related disorders have been concluded. AVE as a treatment modality for ADD/ADHD has produced wide-spread improvements, including secondary improvements in IQ, behaviour, attention, impulsiveness, hyperactivity, anxiety, depression, ODD and reading level. In particular, AVE has proven itself to be efficient and affordable in children's treatment with special needs in a school setting."<sup>6</sup>

In view of the proposed study, and to conclude to the contributions from this researcher, let's review a passage from an article which establishes the neurobiology of the affective disorders and the clinical relation of audio-visual entrainment.

"The author discusses the origins of mood and aggression from a neurobiological and evolutionary / genetic point of view. Affective disorders pertain to emotional disorders, more commonly depression, anxiety and mania. Affective disorders have deep effects on violence, the ability to love, sleep, health, sexuality, longevity, ethics and so much more. Trauma is the neurologic/ somatic / social outcomes of the perception of life events. (...). Audio-visual entrainment plays a part in raising the perception threshold and in recovering from affective disorders, whether they are trauma-based or not. The aftermath of trauma and affective

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<sup>6</sup> SEIVER, Dave. *Audio-Visual Entrainment: Applying Audio-visual Entrainment Technology for Attention and Learning*. Available at: < <http://www.mindalive.com/articlethree.htm> > Accessed on: 12 .May 2009.

disorders are so profound that all approaches that might help in the recovery must be considered".<sup>7</sup>

## **1.2 TMM SYSTEM SOUND WAVES**

The TMM System is formed by several sounds or sound waves that are able to promote inner-self improvement in human beings through the entrainment of brain waves,

- 1 - Isochronic and Monaural Waves - Neural Synergy;
- 2 - Isochronic and Monaural - Eden Energy Waves Dynamics;
- 3 - Emotive Brainwave Hypnosis
- 4 - Good Night, Sleep Well
- 5 - Schumann Resonance Meditation
- 6 - Subconscious support for Health and Wellbeing
- 7 - Subconscious support to Subliminal Prosperity
- 8 - Whole Brain Gratitude Meditation

Professor (honorary) Zelcovitch uses them in accordance with the clients he sees and takes into consideration the desired objectives, since each one will bring considerable reflexes to the brain activity.

In the actual monographic study, the author will only be using two of the waves of the System, Isochronic or Monaural Neural Synergy and Isochronic and Monaural Eden Energy Waves Dynamic. This will take upon the peculiarities of the research according to the co-director suggestion; creator of the System.

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<sup>7</sup> DAVE, Seiver. *Audio-visual Entrainment: The Neurobiology of Affective Disorders and Clinical Applications of Audio-visual Entrainment*. Available at: < <http://www.mindalive.com/articlefive.htm> > Accessed on: 12 May 2009



### **1.2.1 EDEN ENERGY WAVE DYNAMIC**

Eden Energy Wave Dynamic is a wave projected to help with the inevitable loss of action, motion, and which has a tendency to happen in any type of program of self-help or personal development.

This recording has a different and distinct pattern that goes to each of the two hemispheres of the brain separately. It increases the levels of energy, while it simultaneously, silences the voices that have a tendency to stagnate ones being because of its influence in thinking too much or causing fear.

This allows the user not only to develop, but also gives them a brain exercise that can contribute in the reorganization of the brain to a higher level of functionality.

It must be heard with the help of stereo ear phones so that each hemisphere of the brain registers its stimulating frequency while paying attention to the objectives of its creation. Half varies in Alfa frequency while the other half in Beta frequency.

The System makes the recordings available to the user in a variety of stimulation patterns which include varying pitches as well in order to accommodate the users personal taste which can factor in to the overall effectiveness of listening.

## **1.2.2 NEURAL SYNERGY**

This recording is specifically designed to help in reorganizing the brain to a higher level, and thus allow the user to execute more complex tasks in a simpler way than before.

It starts its zone of influence in Beta frequency and then moves to Theta levels, thus facilitating the user to reach the desired improvements.

The system makes the recordings available to the user in a variety of stimulation patterns which include varying pitches as well in order to accommodate the users personal taste which can factor in to the overall effectiveness of listening.

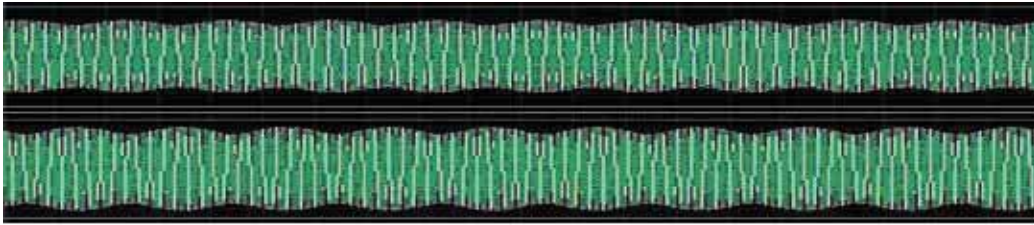
## **1.2.3 ISOCHRONIC AND MONAURAL**

The isochronic tone has a beat that is shaped as a square (the pulsation is completely separate), and the monaural goes up and down each one joined at the bottom in a gentle transition (similar to waves on a lake or the ocean).

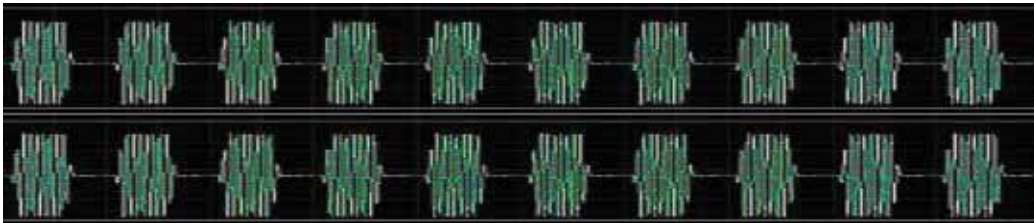
Theoretically, the Isochronic tones are "stronger" and the monaural tones are gentler on the mind/body system.

The main difference between these two tones of sound waves is the shape of the difference between the "peaks" and "valleys" of the wave which determines the reaction of the brain to the stimulating sounds according to graphic representations measured from a sample of 1 (one) second to a frequency of 10 (ten) Hz.

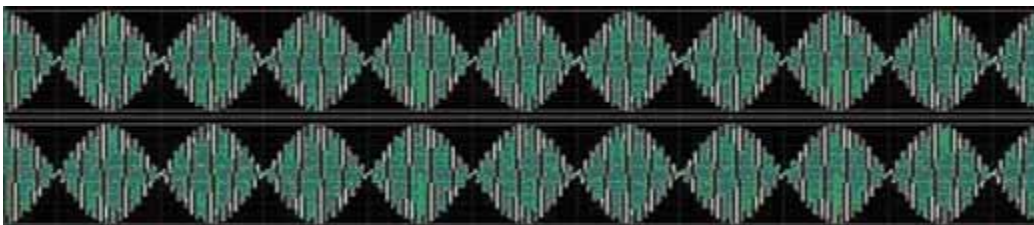
## **BINAURAL TONES**



## **ISOCHRONIC TONES**



## **MONAURAL TONES**



Zelcovitch takes a close look at the binaural tones and realizes that there is a very small difference between the peak of the wave and its lowest side. It is the size of the difference between the highs and lows of the wave that determines the strength of the brain reaction to the stimulating sounds. He explains that it is for this reason that his system uses the isochronic and monaural stimulation patterns, As they are much more efficient than the binaural tones and other types of stimulation. The waves produced by isochronic and monaural tones are much more evident in its highs and lows and therefore, much more efficient with respect to entrainment.

The two models might deliver different sensations between people. Studies illustrate that the entrainment is more effective if the listener likes the sounds heard.

This means that if the user likes the Monaural better than the Isochronic, it is possible then that that one will produce better results, though the first is stronger.

Therefore, the creator of the system mentions that what is important is the pleasurable adaptation of one tone to another so that it provides better results.

By taking this into consideration, the author exposes the reader to the implementation of Costa Verde Military Police Academy, the Official Student and the student professional competence profile and how it connects to the various job duties.

## **2. MPMT TRAINING EDUCATION**

The legality of teaching in the circle of the *Corporation* was submitted to several hearings, according to the document<sup>8</sup> prepared by the Costa Verde Military Police Academy (CVMPA).

Initially, Law no. 4.024/1961 which established the regulations and the national curriculum basis which would leave the education of the Military Police at a Federal level, contributed to the integration of the Institution using the models established by the Ministry of Defense.

In 1969 the Federal Constitution attributed to the Union the competence to legislate on Education and Training of all Military Police. This was because the constitution defines the Military Police as "*Auxiliary Strength and Army Support*". However, Law no. 5.692, 11.08.1971, which establishes the regulations and the basis of national education, it appealed for a specific law in the Military Education.

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<sup>8</sup>EMBASAMENTO legal. **Diagnóstico da Academia de Polícia Militar Costa Verde – PMMT**, pg. 14, Várzea Grande, March. 2005.

Hence, on basis of Article 68 of the Federal Law no. 5.692 signed on 03.01.94 under Law no. 6.388, it established the Education system of the Military Police of Mato Grosso State (PMMT). The system's purpose is to provide to its respective applicants training for the job functions including other predicted tasks of the organization, as well as providing education to its members through planning, co-ordination, control, execution and evaluation.

## **2.1 COSTA VERDE MILITARY POLICE ACADEMY**

Costa Verde Military Police Academy was founded under Law no. 5.177 on the 27 of November of the year of 1987, as described in article 1, *"in verbis"*: *"Art. 1 - Funded the Military Police Academy of Mato Grosso State"*.

Its foundation was due to the necessity of having officers educated with the professional characteristics needed to attend to the peculiarities of Mato Grosso State and the pledge from Pinto Martins Côrrea, Colonel of the Military Reserve Pay, who highly contributed for this dream to become a reality.

It is interesting to note, that even though, "in paper" the Academy was already existing, it only became official through Decree no. 3.145 on 06 of July of 1993, which added the location of the Military Police Academy as per the following, " Art.1. The Military Police of Mato Grosso State is now operational and resides in the municipality of Varzea Grande - Mato Grosso".

In a documentary analysis<sup>9</sup> , it demonstrates that the Academy's activation coincided with the *Officer Intensive Training Course* that sheltered officers from the Brazilian Army which later would be part of the police curriculum of the Military Police of Mato Grosso State.

Nevertheless, the first group of officer students selected through the university entrance exam, during the time managed by the Federal University of Mato Grosso, which was the "Pioneer" that properly enrolled and selected, on the 01 of March of 1994, completed its military academic period after the end of three years, 1996.

The years went by and presently the Academy teaches its fourteenth Officer Training Program; it continues to deliver leaders and managers from the Military Police-Mato Grosso.

The name given to the Military Police Academy is the name of the district from the city of Varzea Grande where the institution is located, Costa Verde.

## **2.2 OFFICER TRAINING PROGRAM**

The afore-mentioned document<sup>10</sup> , written by the Academy, reveals that the Training Program for Officers is part of the higher education level for Junior and Intermediate Officers, with duration of three years, in which the officer students will be constantly selected and educated on moral, intellectual and professional technical competence. It raises military police aptitudes by guarantying a better condition in health and physical energy which are essential to an Officer. To regulate the military academic activities,

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<sup>9</sup>CRIAÇÃO da Academia de Polícia Militar. **Diagnóstico da Academia de Polícia Militar Costa Verde – PMMT**, pg. 9-11, Várzea Grande, March 2005.

<sup>10</sup>REGULAMENTO do Curso de Formação de Oficiais. **Diagnóstico da Academia de Polícia Militar Costa Verde – PMMT**, pg. 14-15, Várzea Grande, March 2005

the Decree no. 3.144, of 06.07.93 (OTPR) was instituted which regulates the Officer Training Program Regulations of Mato Grosso State.

The following are some of the mandatory requisites in the registration of the candidate: passing grade on the university entrance exam, up to date with its electoral obligations, civilian status, up to date with the military service, no criminal record, Brazilian born, among others.

In this competition the best candidates will be selected in the aspects of intellectuality (through the university entrance exam) and physical (odontologist and psychologist), according to regulations and standards practiced. Along the three years, students will be constantly evaluated and selected so that skills or personal difficulties are found, and conditions for improvement if necessary. The purpose is to help on their professional progress by working with each one of them who presents less progression on designated functions.

Being an institution of education, one of the ways to evaluate is to check the students knowledge by administering mandatory regular testing and a final test, practice or theoretical, in accordance with the course.

Another form of evaluating the student is verifying their adaptability (confidential character), which will be carried out by a judging commission which judges on school behaviour, moral attributes, military police spirit and physical capacity.

## 2.3 OTP EQUIVALENCE TO A BACHELOR'S DEGREE<sup>11</sup>

Some officers enrolled in the Academy went through some difficulty time due to having the program be compared to a university level degree. This was resolved by the Board of Education through subsection no. 253/96.

Along the same page, in 09.12.2003, through subsection no. 428/003, the Board of Education recognized the OTP as a Bachelor's Degree in Public Safety, and retroactive the decision to the candidates of the year 2000.

## 2.4 PROFESSIONAL COMPETENCE PROFILE

Dival Pinto Martins Correa, MPRP Colonel, published the ordinance no. 02/DE/96<sup>12</sup> from 08.11.96, which discusses the subject in question, and thus as per article 1, *in verbis*, "Art. 1. *The professional competence profile **STANDARDS** are approved for the psychological examination for the Officer Training Program candidates, attached to this... "* (originally in italics)

The material that is according to the present ordinance follows a psychological teaching guideline created by the team of the Academy:

"The Psychological Evaluation is a procedure which allows to investigate specific characteristics of the personality and aptitude of a person (...).

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<sup>11</sup>EQUIVALÊNCIA do CFO ao nível superior. **Diagnóstico da Academia de Polícia Militar Costa Verde – PMMT**, pg. 16, Várzea Grande, March 2005.

<sup>12</sup>POLÍCIA MILITAR MT. Portaria nº. 002/DE/1996 de 08 de novembro de 1996. Aprova as normas do perfil profissiográfico para o exame psicológico dos candidatos ao Curso de Formação de Oficiais. In: **Boletim Interno Comando Geral, PM-MT**, n. 775, p. 6124, 6 mar. 1997



In the case of the Military Police for the Officer Position, a description and analysis were conducted to determine the requisites and characteristics that the applicant must possess. In other words, once the information for the job position given by the institution is obtained and the characteristics needed for the job are established, a professional competence profile is outlined containing the psychological attributes necessary.”

The following quote explains that even though the Military Police of the State has its tangent peculiarities off what Junior and Intermediate students must possess for executing the demands of their job, it exists a national parameter, in other words, the Brazilian Labour Classification (CBO)<sup>13</sup>, linked to the Ministry of Labour, describes the qualifications required by officers, 2nd and 1st lieutenants and Captain of the Military Police (competence given by the OTP) besides attributing a code.

**“0203-05 - 1st Lieutenant of the Military Police / 0203-10 – 2nd Lieutenant of the Military police**

Platoon commander, coordinates ostensible, reserved and veiled policing; advisory body, human resources and logistics, participates in action planning and operations, executes case and administrative military proceedings, acts in the co-ordination of social communication; promotes technical studies and professional training.

**0202-05 - Captain of the Military Police**

Commands operations of ostensible police officers, plans actions of ostensible policing, and develops communitarian policing. In addition, manages police stations and reinforces command, enforces disciplinary action and is part of the Military Judicial Police.

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<sup>13</sup>CLASSIFICAÇÃO brasileira de ocupações. Available at: <<http://www.mteco.gov.br/cbsite/pages/pesquisas/BuscaPorTituloResultado.jsf>> Accessed on: 14 July 2009.

In relation to the document from the psychology sector at Costa Verde Military Police Academy, it emphasizes an element of vital importance of this project; in other words, the topics assessed by the Military Police-Mato Grosso professional competence profile for the officer career are:

- 1 - Interpersonal relationship
- 2 - Leadership
- 3 - Initiative
- 4 - Adaptability
- 5 - Verbal fluency
- 6 - Skill, Agility
- 7 - Logical reasoning
- 8 - Sociability
- 9 - Emotional maturity - Promptness
- 10 - Emotional balance
- 11 - Appropriate Tolerance to Frustration
- 12 - Insight Capability
- 13 - Attention
- 14 - Memory.

The following is the proceeding adopted by other Federal States when selecting candidates, such as from the respectable Military Police of Santa Catarina<sup>14</sup> , which presents the following as part of their professional competence profile:

1. Emotional Control (self-control)
2. Anxiety
3. Anguish
4. Impulsiveness
5. Self-confidence
6. Resistance to Frustration
7. Potential of Cognitive Development
8. Aggressiveness
9. Work Disposition
10. Initiative
11. Leadership Potential
12. Sociability (interpersonal relationship)
13. Flexibility of Conduct (flexibility)
14. Creativity
15. Verbal fluency (communication)
16. Signs of Phobia
17. Responsibility
18. Ambition
19. Assertiveness
20. Courage
21. Discipline
23. Perseverance

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<sup>14</sup>PERFIL *profissiográfico exigido na avaliação psicológica*. Accessed at: < [http://www.acafe.org.br/new/concursos/cfo\\_pmsc\\_2009/download/Avalia%C3%A7%C3%A3o%20Psicol%C3%B3gica%20-%20perfil%20profissiogr%C3%A1fico.pdf](http://www.acafe.org.br/new/concursos/cfo_pmsc_2009/download/Avalia%C3%A7%C3%A3o%20Psicol%C3%B3gica%20-%20perfil%20profissiogr%C3%A1fico.pdf)> Access at: 19 jul. 2009.

In view of the psychological tests available "Concentrated Attention" and Polygraph, the author lists the variables to be checked as samples: concentrated attention, aggressiveness, anxiety, fatigue and productivity.

For this reason, the professional competence profile of the PMMT was chosen, as described below:

6 - Skill / Agility. Capability to show agility, cleverness, quickness.

10 - Emotional balance - Control. Must have the capability to control aggressiveness, but while at work be able to show it appropriately when necessarily. He could present anxiety during difficult situations and of higher pressure, but controlled, avoiding panic. He must have control of his own impulses but without losing initiative.

11 - Appropriate Tolerance to Frustration. Capability for tolerating limits, daily activities and subordination to orders. Resistance and firmness during consecutive failures but with the ability for self awareness by finding opportune and productive moments that tests his tensions and stresses. Capability of being creative though frustrated and depreciated.

12 - Insight Capacity. Capability for noticing his own attitudes; to face the demanded situations such as potential and difficult ones.

13 - Attention (awareness). Capability of spontaneous attention on daily activities.

These definitions are part of the psychological requisites demanded for the military officer position, which deserves a more specific approach in relation to these variables in comparison to those verified as samples in that research.

Category number 6 (six) with the variable research on fatigue, in other words, student capability in resisting fatigue so that he manages to perform his academic activities. This category is fundamental in the academic exercises and even more under the police exercises which often exceeds 24 (twenty four) continuous hours.

Category number 10 (ten) with the variables of anxiety and aggressiveness, characterizes the ability of the student when faced by countless unusual and unforeseen situations resulting from the profession, in which he can maintain control of anxiety and aggressiveness in acceptable situations. The police officer in his daily tasks must demonstrate an emotional effective control on his conduct. He is also able to maintain the levels of anxiety and aggressiveness in a manner that do not compromise his ability to act or when situations arise.

Category number 11 and 12 with the variable productivity, in relation to the student, that he is able even during circumstances in which he stands out "victoriously" or "defeated" to keep on producing quantitative and qualitatively. The amount of work, the exhaustive journey, the social pressures and the compromise of being 100 % (hundred) correct on the attitudes, creates considerable obstacles for a police officer and as such, his training must contain exercises that test his behavior so that his productivity does not drop.

Category number 13 with the variable concentrated attention, essential for the operational performance of the officer, since any final police exercise, attributes to his vital condition, his capacity of perception and observation, especially during the rescuing of lives.

As such, it is then understood that the possible variables to be assessed under the psychological tests are specified in the professional competence profile from the Military Police-Mato Grosso, under its professional team of psychology. It is clear that the proposed objective in this research is only to verify the influence of these variables before and after being exposed to the TMM System.

### **3. MATERIALS AND METHODS**

This is an experimental research with the objective to verify the influence of The TMM System in the performance of 1<sup>st</sup> year officer students enrolled in the Officer Training Program at Costa Verde Military Police Academy. The research was conducted on 21 (twenty one) 1<sup>st</sup> year students registered at Costa Verde Military Police Academy.

The research was subjected to two experiments called Experiment "1" and Experiment "2". Experiment "1" is comprised of psychological tests, Concentrated Attention and Polygraph, before exposure to the TMM System. Experiment "2" is comprised of psychological tests, Concentrated Attention and Polygraph, after exposure to the TMM System, in which its intent is to check the level of the following variables: concentrated attention, anxiety, aggressiveness, productivity and fatigue.

### 3.1 POLYGRAPH TEST

The polygraph test represents an analysis of the lines traced in paper which reveals the personality of those tested. The creator of this test in Brazil was Doctor Agostinho Minicucci:

“The polygraph test was created and prepared by Professor Salvador Escala Milá from the Psychotechnical Institute of Barcelona, Spain. In Brazil, the validation of this technique was performed by Professor Agostinho Minicucci while he was the Director of the Faculty of Philosophy, Sciences and Letters of Botucatu and Teacher of Psychology (1960). He introduced in this school, the Centre of Studies of Graphoanalyses (Writing Analyses) and Graphic Tests, where it conducted studies to validate this technique. Its use was spread more widely in the 70. (...) The polygraph test can be defined as personality evaluation on basis of graphic expression. The sheet of paper represents the world in which the individual places himself effectively and the way he connects to the outside world; through the lines traced. While writing, we project on paper symbolic forms, vivid to us, which express our inner life, in other words, we modify the traditional or calligraphic forms in accordance with the conscious ideas and the unconscious images that determine our personality. The sheet of paper acts as the world where we evolve, and each written movement is symbolic of our behaviour in this world. We can reckon then that all movements, all human gestures are rich in meaning and compete for the expression of the personality as a whole.”<sup>15</sup>

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<sup>15</sup>VISÃO geral dos testes psicológicos. Available at: < [http://www.estacio.br/site/psiconsult/cursos/2003\\_1/visaogeral\\_testepsicologicos.pdf](http://www.estacio.br/site/psiconsult/cursos/2003_1/visaogeral_testepsicologicos.pdf)> Accessed on: 19 July 2009.

The execution of the test consists in tracing lines in a blank sheet of paper (A4) with a pencil in a fixed manner (from top to bottom) after pre-determined models (lines printed in the paper). The duration is five minutes and for each minute the applicator gives a sign and the person being tested traces a line in the paper and they continue until it ends.

After the tracing, each person tested counts how many lines it managed to do in the stipulated time and is then up to the psychology technician to analyze the written lines in quantitative and qualitative level.

### **3.2 CONCENTRATED ATTENTION TEST**

The psychological test of Concentrated Attention checks the capacity of directing or focusing the attention, in a determined time, in order to distinguish small details.

“The Concentrated Attention Test is a national publication by Suzy Vijande Cambraia, published by *Vector Psico-Pedagógica Publisher*, whose objective is to assess the capacity of the individual in maintaining his concentrated attention to work for a period of time. It is made up of stimulus organized lines; the individual must recognize which stimulus are the same as indicated by the patterns in the model. It is carried out in 5 minutes so that the ability to work can be measured quickly and how attentive is to the task”.<sup>16</sup>

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<sup>16</sup>KROTH, Idione. **Estudo sobre o Perfil Psicológico de um Grupo de Operadores de Telemarketing em uma Empresa de Call Center**. Palhoça: UNISUL, 2007. Graduação (bacharelado em psicologia), Faculdade de Psicologia, Universidade do Sul de Santa Catarina, 2007.



The test was carried out in five minutes and the participants looked at three pictures while attempting to identify, between other ones and soon after the psychologist technician signals to stop, the highest possible number of check marks of the figures seen in the determined time. It was up to the technician to register the quantity of figures marked correctly, the omissions (figures that should be marked and were not) and the level of classification in accordance with the test correction chart.

### **3.3 1st YEAR OFFICER TRAINING PROGRAM STUDENTS**

The 1<sup>st</sup> year Officer Training Program is made of 31 (thirty one) students, of whom, 21 (twenty one) are from Mato Grosso State and 10 (ten) are from South of Mato Grosso State.

The 1<sup>st</sup> year OTP students were selected by the open competition that included medical, psychological and physical evaluation known to the author. Another relevant factor was that OTP already had notebook's and / or mp4 including ear phones thus facilitating the use of the sounds.

Nevertheless, the main factor for selecting them was the assurance that they would not cause big embarrassments to this research during the two weeks period which there could not be any absences in any of the sessions that took place two times a day. Obviously this was very difficult in the military police unites due to their schedule of days off, changes to services (captures, operations), among others.

It is important to mention as well that since the Officer Training Program is offered at the Academy and the author is one of the instructors of that institution, the Commander and his pedagogic team provided full support to this research academically and time availability; after all, the time spent on formatting the monograph, including tests, was approximately one month and a half, of which fifteen days was spent on study travels.

For these reasons if a police officer would be absent to any of the sessions it would compromise the results of the research.

### **3.4 EXPERIMENT "1"**

The research was conducted with 21 (twenty one) officer students from the 1<sup>st</sup> year Officer Training Program, Costa Verde Military Police Academy, situated in Varzea Grande-MT. The tests were conducted by psychologist, Célio Heli Batista on the 29 of June of the current year (2009), at 07:45 in the main room.

The participants mentioned above participated initially on a psychological test called CA (Concentrated Attention) and, as the name suggests, the aim was to identify the participants' level of attention.

Next they were subjected to a polygraph (PLG) psychological test which is an evaluation of the personality with the possibility of raising numerous variables; however, for this research the variables in question are anxiety, aggressiveness, fatigue and productivity.

### **3.4.1 PROCEEDINGS**

Firstly, the students received a project orientation instructed by the author at which time they were advised of the requirements of being subjected to psychological tests in verifying the levels of specific psychological variables. In addition, after formal voluntariness of each student (see attached Volunteer Acceptance Letter) and the collegiate (see attached for Ethical Regulation as per Art. 3rd, §2º Monograph Regulations), the psychological evaluation was hence scheduled.

The same psychology technician applied the CA and PLG tests that were carried out for approximately 45 (forty five) minutes, and thoroughly explained the details of implementation and file completion. During all the phases, the technician was accompanied by the researcher.

### **3.5 EXPERIMENT "2"**

In this experiment, differently from experiment "1", the 1<sup>st</sup> year students before being tested were submitted to the sounds of the TMM System. They heard two of the sound waves from the system, Neural Synergy (Isochronic or Monaural) and Eden Energy Wave Dynamics (Isochronic or Monaural), for a period of two weeks, twice daily.

They heard the sounds twice a day at 06:40 am and 4:00 pm, during two weeks, each one for the duration of 30 (thirty) minutes. They heard the energy dynamic in the morning and the neural synergy in the evening period. The technology used for the listening of the sounds was mp3 or notebooks, with the use of ear phones.

It was necessary the adaptation of time-tables for the sessions, given that on the weekends, students were employed in policing in the capital (03/07 to 05/07 and 10/07 to 12/07); thus, there was a need to revise the time-tables previously established. During these weekends, they heard the waves of energy dynamic for one hour and a half after waking up and the neural synergy in the afternoon, in their rooms, without the supervision of the researcher.

During the weekdays, the researcher accompanied them in the listening room in the morning, as well as in the afternoon.

Once the period of exposure to the TMM System ended, the research sample went through a retest, with identical proceedings to subchapter 3.4 applied on the 14 of July of 2009 at Costa Verde Military Police Academy by psychologist, Célio Heli Batista, from 8:00 to 08:45 am.

### **3.6 PRE-TEST**

During the period of familiarization with the material, the author exposed himself to the sound tests for one month and a half; and, in constant contact with the creator of the TMM System established a methodology of comparison according to the research performed.

It is important to note that the same sensations experienced by the author on the monographic test were shared by the students, especially, increased attention and sleep reduction.

## **4. RESULTS AND DISCUSSIONS**

### **4.1 EXPERIMENT "1" RESULTS**

On the 29 of June of 2009, Costa Verde Military Police Academy, two psychological tests were performed on the participants, CA and PLG, which provided the following data:

*>> see next page >>*

**Chart 2 –  
Experiment “1” Concentrated Attention Test Results**

Students	CONCENTRATED ATTENTION CA		
	Points	Omissions	Level of Classification
1	133	14	A. High.
2	85	02	MD
3	121	04	High.
4	81	17	MD.
5	105	07	A.MD.
6	98	06	High.
7	145	02	MD.High.
8	71	75	MD.
9	119	03	High.
10	101	14	A.MD.
11	137	10	MD. High.
12	101	08	A.MD.
13	103	09	A.MD.
14	109	02	A.MD.
15	112	06	High.
16	66	24	MD.
17	130	06	MD. High.
18	98	00	A.MD.
19	115	11	High.
20	92	35	A.MD.
21	100	04	A.MD.

**Note:**

MD – Medium; A MD – Above Medium; High – High;  
A High – Above High; M. High – Medium High.

### Chart 3 – Experiment “1” Polygraph Test Result

Students	Polygraph Test PLG					
	No.1	No.2	No.3	No.4	No.5	Total
1	151	164	124	135	137	711
2	85	105	118	120	118	546
3	170	169	151	167	155	803
4	52	54	71	61	55	293
5	98	97	120	137	179	631
6	111	131	131	131	132	636
7	106	114	104	102	104	530
8	47	50	51	56	51	255
9	127	117	123	131	123	615
10	182	133	144	146	154	759
11	122	127	136	120	117	622
12	69	69	82	96	77	393
13	148	142	148	154	133	725
14	154	154	152	150	154	764
15	58	52	63	59	75	307
16	91	99	112	85	96	483
17	157	149	153	169	164	792
18	121	112	113	119	114	579
19	105	115	100	105	100	525
20	117	130	118	146	114	625
21	58	63	73	66	71	331

**NOTE:** no. 1 – number of lines traced in the 1st minute; no. 2 – number of lines traced in the 2nd minute; no. 3 – number of lines traced on the 3th minute; no.4 – number of lines traced on the 4th minute; no.5 – number of lines traced on the 5th minute; Total – total number of lines traced in 5 (five) minutes.

And as such, this was the data checked in the Concentrated Attention “CA” test and Polygraph “PLG” in Experiment “1”.

## **4.2 THE TMM SYSTEM AUDITION**

As stated, the methodology employed in this research predicted that between Experiment "1" and Experiment "2", the participants were subjected to the TMM System sound waves, with selective tones and variations of the System, two times a day during two weeks, from the 29 of June to 14 of July of 2009, as illustrated below:

>> *see next page* >>



## Chart 4 – TMM System Listening Table

STUDENTS	29/06		03/07		04/07		05/07		06/07		11/07		12/07		13/07		14/07	
	M	A	M	A	M	A	M	A	M	A	M	A	M	A	M	A	M	A
01	06:40	16:00	06:40	17:00	12:30	16:00	12:30	17:30	06:40	16:00	14:00	16:00	15:00	17:00	13:00	17:00	06:40	-
02	06:40	16:00	06:40	17:00	12:00	16:30	13:30	15:30	06:40	16:00	15:00	16:00	19:00	06:00	12:00	00:15	06:40	-
03	06:40	16:00	06:40	17:00	13:00	16:30	14:00	16:24	06:40	16:00	11:30	16:10	15:00	03:00	13:15	01:45	06:40	-
04	06:40	16:00	06:40	17:00	11:20	16:26	11:00	17:00	06:40	16:00	13:00	16:36	12:15	16:10	13:00	17:20	06:40	-
05	06:40	16:00	06:40	17:00	11:00	14:30	10:30	15:30	06:40	16:00	12:00	18:00	11:00	15:00	12:00	17:00	06:40	-
06	06:40	16:00	06:40	17:00	09:18	12:56	11:32	17:20	06:40	16:00	13:00	18:30	15:13	18:32	12:22	22:00	06:40	-
07	06:40	16:00	06:40	17:00	08:41	20:20	16:30	17:33	06:40	16:00	14:12	16:33	12:11	16:33	08:03	18:22	06:40	-
08	06:40	16:00	06:40	17:00	13:00	14:53	10:27	14:53	06:40	16:00	11:45	16:43	13:23	15:55	07:10	19:00	06:40	-
09	06:40	16:00	06:40	17:00	13:00	17:00	12:00	16:30	06:40	16:00	14:00	18:00	13:00	19:00	13:00	18:00	06:40	-
10	06:40	16:00	06:40	17:00	11:20	16:50	12:13	-	06:40	16:00	14:20	16:32	12:00	17:40	12:45	18:30	06:40	-
11	06:40	16:00	06:40	17:00	11:25	18:54	12:00	15:40	06:40	16:00	11:45	17:10	12:00	17:00	13:00	18:00	06:40	-
12	06:40	16:00	06:40	17:00	11:05	16:03	12:32	19:03	06:40	16:00	13:10	15:42	14:39	16:30	11:16	20:06	06:40	-
13	06:40	16:00	06:40	17:00	11:33	16:12	11:38	17:14	06:40	16:00	11:59	16:28	12:02	16:01	11:52	17:12	06:40	-
14	06:40	16:00	06:40	17:00	11:24	15:45	11:40	15:25	06:40	16:00	14:00	15:55	10:54	16:30	11:19	-	06:40	-
15	06:40	16:00	06:40	17:00	10:00	16:00	11:06	15:00	06:40	16:00	11:30	15:40	13:22	16:02	09:00	18:04	06:40	-
15**	06:40	16:00	06:40	17:00	10:10	17:14	05:59	13:36	06:40	16:00	06:11	16:30	06:49	16:20	-	17:30	06:40	-
17	06:40	16:00	06:40	17:00	10:00	15:00	10:00	15:00	06:40	16:00	10:00	15:00	10:00	15:00	10:00	15:00	06:40	-
18	06:40	16:00	06:40	17:00	11:45	15:50	12:10	16:00	06:40	16:00	12:30	16:40	12:00	17:25	12:10	19:00	06:40	-
19	06:40	16:00	06:40	17:00	10:17	16:00	12:30	17:00	06:40	16:00	12:00	15:00	12:00	17:30	12:40	19:10	06:40	-
20	06:40	16:00	06:40	17:00	15:00	08:30	14:30	03:00	06:40	16:00	14:00	05:00	14:00	03:30	12:00	17:00	06:40	-
21	06:40	16:40	06:40	17:00	10:30	14:19	11:50	19:00	06:40	16:00	12:40	15:20	11:50	15:10	12:20	17:30	06:40	-

Obs. ID – Isochronic Dynamic Waves; MD – Monaural Dynamic Waves; INS – Isochronic Neural Synergy; MNS – Monaural Neural Synergy; The numbers indicate the tonality of the sound waves available in the System.; M – Mourning; A – Afternoon; \* – The student finished listening in the afternoon of 05/07. \*\* – The student finished listening in the morning of 13/07.

## **4.3 EXPERIMENT "2" RESULTS**

When the phase of listening ended they were tested again (retest) to check the level of influence of the system in the variables: concentrated attention, aggressiveness, anxiety, fatigue and productivity.

### **4.3.1 CONCENTRATED ATTENTION TEST RESULTS**

The retest was carried out on the 14 of July of this year (2009), at CVPMA starting at 08:00 and finishing at 08:45 am, in which it was observed that 95.23% (ninety five point twenty three) increased their concentrated attention, after being exposed to the System.

A total of 66.66% (sixty six point sixty six) of the test was omitted due to students not fully completing the test.

The "CA" test is made up of figures that are shown to the students and then mixed with other figures. The task is to identify them as quickly as possible in that determined set. The omission is identified in the correction when the person being evaluated did not check a figure that should have been checked.

In this sense, it is possible to conclude that a total of 95.23% increased their attention and a total of 66.66% besides improving their attention it increased the quality of their attention, which if taken into consideration with the police work it is of great relevance.

The same example described previously (66.66%) is of the students who changed their level of classification with the respective sounds audition of the System. These classifications are supplied by the data on the test, which is characterized of charts that, on basis of pre-determined data, establishes the levels of classification: middle, above average, high and very high.

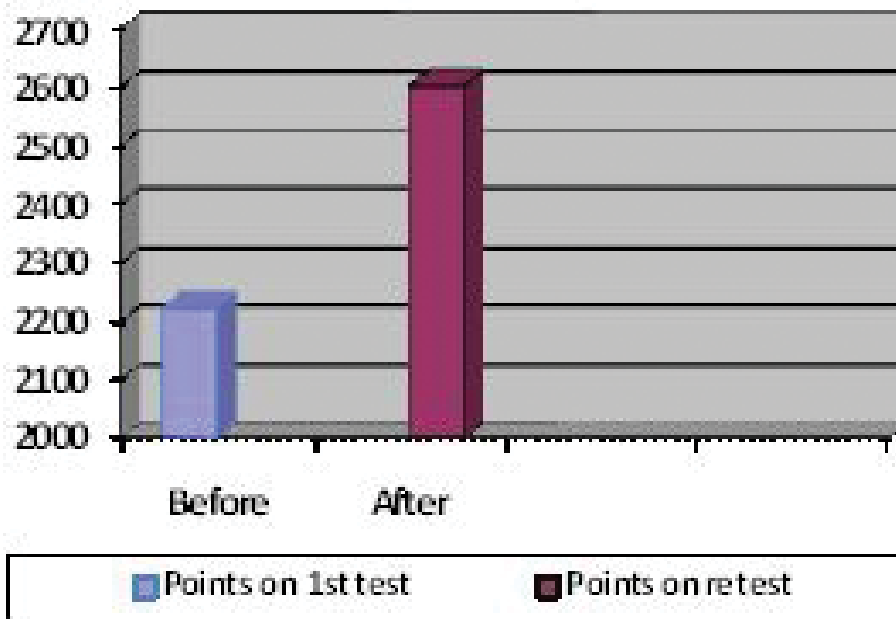
The following charts and graphics illustrate the visibility of the data retrieved:

### Chart 5 – Experiment “2” Concentrated Attention Test Results

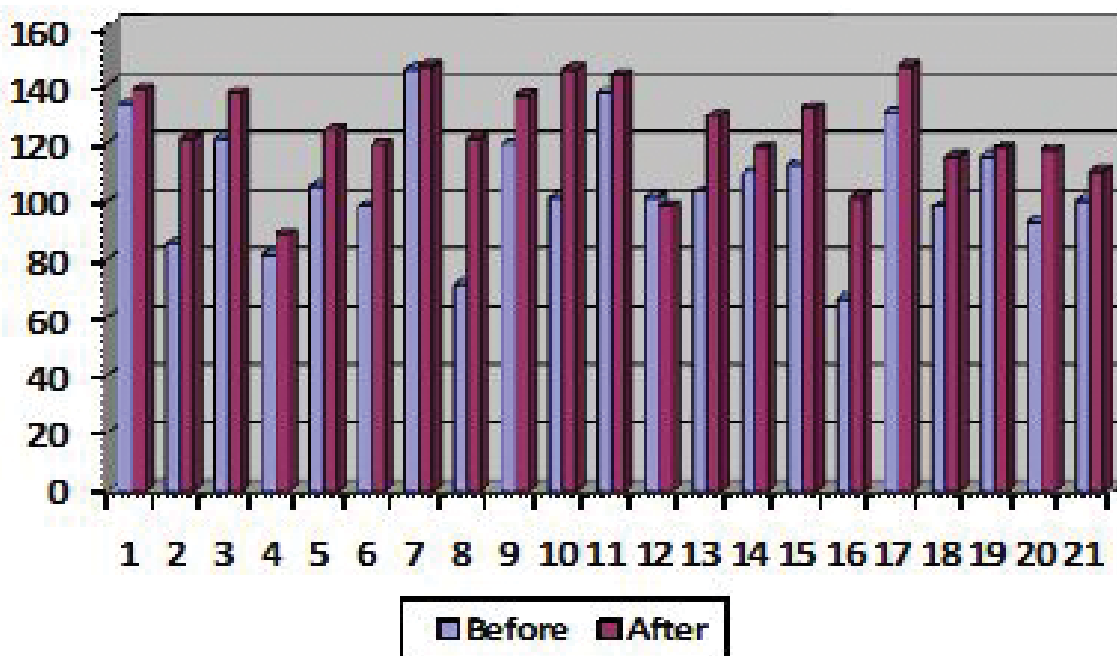
STUDENTS	CONCENTRATED ATTENTION TEST CA		
	Points	Omissions	Classification level
1	138	05	MD. High.
2	121	12	MD. High.
3	137	03	MD. High.
4	88	11	A.MD.
5	124	03	A. High.
6	119	06	High.
7	146	01	A.High.
8	121	26	A. High.
9	136	02	A. High.
10	145	02	A. High.
11	143	04	A. High.
12	98	00	A.MD.
13	129	03	MD. High.
14	118	02	High.
15	132	07	MD. High.
16	101	44	A. MD.
17	146	01	A. High.
18	115	02	High.
19	118	07	High.
20	117	17	High.
21	110	08	High.

**NOTE:** MD – Medium; A MD – Above Medium; High – High; A High – Above High.

**Graphic 1** – Collective points obtained in the Concentrated Attention test before and after exposure to the TMM System.



**Graphic 2** - Collective points obtained individually from each applicant on the Concentrated Attention test before and after exposure to the TMM System.



### 4.3.2 POLYGRAPH TEST RESULTS

The polygraph test was carried out on the 29 of June and 14 of July of this year, and the retest, after listening to the respective sounds of the System, the following numbers were registered:

**Chart 6 –  
Experiment “2” Polygraph (PLG) Test Results**

Students	Polygraph Test “PLG”					Total
	No. 1	No. 2	No. 3	No. 4	No. 5	
1	162	141	161	192	190	852
2	126	139	140	159	152	716
3	200	132	190	154	165	891
4	70	76	62	71	66	345
5	177	177	188	132	201	935
6	143	137	167	178	192	843
7	144	129	123	128	129	686
8	113	166	105	103	103	530
9	128	125	116	122	146	637
10	176	184	170	150	149	829
11	144	155	154	150	146	749
12	92	92	98	90	87	459
13	172	167	170	171	163	843
14	97	94	93	112	100	496
15	61	58	63	98	126	406
16	119	115	140	148	151	673
17	179	173	172	186	185	895
18	115	106	112	113	113	559
19	133	123	117	135	139	647
20	194	201	196	190	193	974
21	85	88	73	89	83	418

**Note:** no. 1 – number of lines traced in the 1st minute; no. 2 – number of lines traced in the 2nd minute; no. 3 – number of lines traced in the 3th minute; no. 4 – number of lines traced on the 4th minute; no. 5 – number of lines traced in the 5th minute; Total – number of lines traced in five minutes.

Experiment "2" demonstrates an increase of the variable productivity of 90.47% (ninety points forty seven), and only two students who represent 9.53% (nine point fifty three), a small reduction not worth to notice.

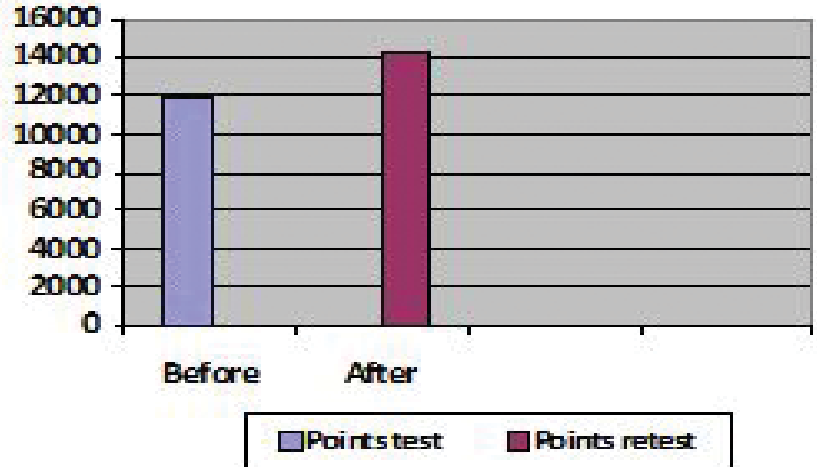
It is noticeable as well a reasonable improvement, 28.57% (twenty eight point fifty seven) of the productivity line, a decrease, meaning an increase to resistance to fatigue.

It is very noticeable though the percentage of 61.90% (sixty one point ninety) of those who maintained a productivity line similar to the initial lines which represents an enormous advancement, since the students had finished two weekends of intense work and still maintained the rhythm of their academic activities, among other tasks. The logic would be just the opposite, in other words, after an intense work load, and for not doing their usual Academic routines, they should have been exhausted; meanwhile, the numbers show that more than half of the group managed to control these rates and around 30% (thirty) increased.

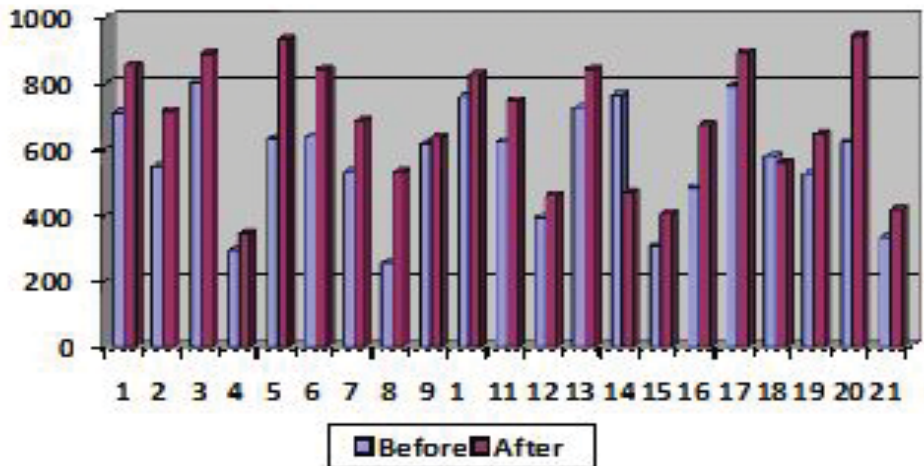
The variables of aggressiveness and anxiety did not suffer significant alterations, which represent a considerable gain, because the students worked two weekends policing the capital and were still attentive to their academic activities. This rather could have brought an increase of aggressiveness and anxiety, promoted by stress due to the work load that during that period of the research was expanded, just as for example on the finals of the *Corporation*.

Graphic number 3 and 4 gives us a better visualization of what has just been discussed:

**Graphic 3** – Collective points obtained in the Polygraph “PLG” test before and after exposure to The TMM System.



**Graphic 4** – Collective points obtained individually from each applicant in the Polygraph “PLG” test before and after exposure to The TMM System.



## **FINAL CONSIDERATIONS**

With the calculation of the data it was clearly understood that the students of this research, and with the listening of the TMM System sounds, managed to increase their concentrated attention, resistance to fatigue and productivity. This is impressive since the variables anxiety and aggressiveness remained without significant alterations even during daily routine interruptions. Instead, it represented a gain because it is similar to have a police officer work exhaustively and, due to the present technology, maintain the same balance before conducting his work.

Certainly we have not obtained data that is more solid and convincing, since during the weekends the listening of the sounds was not supervised by the researcher.

Another obstacle that deserves to be mentioned was the absence of a deeper evaluation of each participant, since Professor (honorary) Zelcovitch suggests to begin with a close frequency of what the listener is and to alter it gradually up until reaching the expected objectives.

The proposed objectives were reached since the TMM System, is a brainwave entrainment methodology, presented circumstantially, as well as, the influence of the System was tested in the performance of the 1st year officer students while executing their own activities, incisively in the variables concentrated attention, productivity and increase of resistance to fatigue. There was stability in the anxiety and aggressiveness variables.



The hypothesis of the research was confirmed because the influence of the System made an improvement, psychologically proved, in the variables proposed, which defined the performance of the students.

It is important to note that the objective of the author, regarding this research, was not to "invade" or refer to titles that he does not possess (psychology, medicine, physics), but only, as part of management of Public Safety, "to open a window" and to give visibility to possible technological instruments that could be used by the Military Police with a high performance of efficiency, as the collected data demonstrated.

As a professional of the Public Safety and instructor of police shutting exercises, the author knows about the necessity of a product that, such as TMM, it acts as the biggest investment of the Institution, which is Man; improving its quality of life, providing the condition that will have positive and direct repercussions in the employment of its services to society and to the image of the PM.

We intend to continue this study by looking at other variables that would need more time due to the complexity of the psychological tests and its relation to the activities performed at the PMMT, in the sense of looking for something that improves the performance of the military police.

We thus suggest the following:

That the present monograph be analyzed by a multidisciplinary team of psychologists, neurologists, Public Safety Management staff in which the researcher would participate as co-helper.

That a deeper analysis is conducted on the System and that a study is done on how to implement it in the Institution that even though it is not a panacea, could be utilized as an instrument to improve the quality of life of a Military Police.

## BIBLIOGRAPHY

A INFLUÊNCIA da música na atividade elétrica do cérebro. Agência USP de Notícias. São Paulo, 17 Oct. 2001. Available at: < <http://www.usp.br/agen/repgs/2001/pags/086.htm>> Acesso em: 26 mai. 2009.

CASTRO, Clarindo Alves de. A INFLUÊNCIA DAS TÉCNICAS MNEMÔNICAS NO AUMENTO DA QUALIDADE DAS INFORMAÇÕES DA ATIVIDADE POLICIAL MILITAR. Várzea Grande: UNEMAT, 2008. Especialização (Gestão Organizacional de Segurança Pública) Universidade do Estado de Mato Grosso, 2008.

CLASSIFICAÇÃO brasileira de ocupações. Available at: <<http://www.mtecbo.gov.br/cbsite/pages/pesquisas/BuscaPorTituloResultado.jsf>> Accessed on: 14 July 2009.

DIAGNÓSTICO da Academia de Polícia Militar Costa Verde. Várzea Grande, March 2005.

FURASTÉ, Pedro Augusto. Normas Técnicas para o trabalho científico elaboração e formatação. 14.ed. Porto Alegre: S.N., 2008.

GUIMARÃES, Liliana Andolpho Magalhães; GRUBITS, Sonia (orgs.). Saúde Mental e Trabalho, vol. I.- São Paulo: Casa do Psicólogo, 2000.

I-Doser. WIKIPEDIA, Encyclopedia. Available at: <<http://pt.wikipedia.org/wiki/Idoser>>. Accessed on: 17 April 2009.

JACQUES, Maria da Graça; CODO, Wanderley (orgs.). Saúde Mental & Trabalho – Leituras. – *Petrópolis, RJ: Vozes*, 2002.

KROTH, Idione. Estudo sobre o Perfil Psicológico de um Grupo de Operadores de Telemarketing em uma Empresa de Call Center. Palhoça: UNISUL, 2007. Graduação (bacharelado em psicologia), Faculdade de Psicologia, Universidade do Sul de Santa Catarina, 2007.

LIMONGI FRANÇA, Ana Cristina; RODRIGUES, Avelino Luiz. Stress e Trabalho: uma abordagem psicossomática – 3ª ed. – São Paulo: Atlas, 2002.

MARCONI, Marina de Andrade; LAKATOS, Eva Maria. Metodologia Científica. 5.ed. São Paulo: Atlas, 2008.

MORAES, L. F. R. & KILIMNIK, Z. M. *As dimensões básicas do trabalho, qualidade de vida e stress: uma análise em profissões de impacto na sociedade*. Belo Horizonte: CEPEAD/UFMG, 1992. Relatório de pesquisa.

PERFIL profissiográfico exigido na avaliação psicológica. Available at: < [http://www.acafe.org.br/new/concursos/cfo\\_pmsc\\_2009/download/Avalia%C3%A7%C3%A3o%20Psicol%C3%B3gica%20-%20perfil%20profissiogr%C3%A1fico.pdf](http://www.acafe.org.br/new/concursos/cfo_pmsc_2009/download/Avalia%C3%A7%C3%A3o%20Psicol%C3%B3gica%20-%20perfil%20profissiogr%C3%A1fico.pdf)> Accessed on: 19 July 2009.

POLÍCIA MILITAR MT. Portaria nº. 002/DE/1996 de 08 de novembro de 1996. Aprova as normas do perfil profissiográfico para o exame psicológico dos candidatos ao Curso de Formação de Oficiais. In: Boletim Interno Comando Geral, PM-MT, n. 775, pg. 6124, 6 March 1997.

POTHIN, Hélio. O Poder da Música sobre o cérebro. Available at: <[http://www.musicaeadoracao.com.br/efeitos/poder\\_musica\\_cerebro.htm](http://www.musicaeadoracao.com.br/efeitos/poder_musica_cerebro.htm)> Accessed on: 25 mai. 2009.

SEIVER, Dave. Audio-Visual Entrainment: History and physiological mechanisms. Available at: < <http://www.mindalive.com/articleone.htm>> Accessed on: 12 May 2009.

SEIVER, Dave. Audio-Visual Entrainment Available at: < <http://www.mindalive.com/articletwo.htm>> Accessed on: 12 May 2009.

SEIVER, Dave. Audio-Visual Entrainment: The application of audio-visual entrainment in the treatment of Seasonal Affective Disorder. Available at: < <http://www.mindalive.com/articlefour.htm>> Accessed on: 12 May 2009.

SEIVER, Dave. Audio-Visual Entrainment: Applying Audio-Visual Entrainment Technology for Attention and Learning. Available at: < <http://www.mindalive.com/articlethree.htm>> Accessed on: 12 May 2009.

SEIVER, Dave. Audio-Visual Entrainment: The Neurobiology of Affective Disordersa Neurobiologia de Desordens Afetivas and Clinical Applications of Audio-Visual Entrainment.. Available at: < <http://www.mindalive.com/articlefive.htm>> Accessed on: 12 May 2009.

SEVERINO, Antônio Joaquim. Metodologia do Trabalho Científico. 22.ed. São Paulo: Cortez, 2002.

VISÃO geral dos testes psicológicos. Available at: < [http://www.estacio.br/site/psiconsult/cursos/2003\\_1/visaogeral\\_testepsicologicos.pdf](http://www.estacio.br/site/psiconsult/cursos/2003_1/visaogeral_testepsicologicos.pdf)> Accessed on: 19 July 2009.

ZELCOVICH, Morry. Who would no want to use this new cientifically proven technology to finally unlock your subconscious mind, and literally attract luck, wealth and health into your life? Available at: < <http://www.quantum-mind-power.com/>>. Accessed on: 20 April. 2009.

ZELCOVICH, Morry. Reprogramme/Reedueque seu cérebro para uma qualidade de vida melhor. Personal Message. Message received <[capottoni@uol.com.br](mailto:capottoni@uol.com.br)> on the 25 May 2009.

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**VOLUNTEER ACCEPTANCE LETTER**

I, Wilson Pereira Padilha Neto, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Óttoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Wilson Pereira Padilha Neto – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Alexssandro Marcondes Fretag, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

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Alexssandro Marcondes Fretag – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Abner James Lopes Campos, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

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Abner James Lopes Campos – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Anderson Santana da Silva, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Anderson Santana da Silva – PM Student



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**VOLUNTEER ACCEPTANCE LETTER**

I, Aroldo da Silva, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Aroldo da Silva – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Bruno César Marques Kawahara, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

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Bruno Cesar Marques Kawahara – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Cleison Honório Nazario, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Cleison Honorio Nazario – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Daniel Dias de Brito, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, accept to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Daniel Dias de Brito – PM Student

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I, Eros de O. Machado Pessoa dos Santos, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

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Eros de O. Machado Pessoa dos Santos – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Gleison Dias dos Santos, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Gleison Dias dos Santos – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Heryk Henryk de Deus Pereira, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

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Heryk Henryk de Deus Pereira – PM Student

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**VOLUNTEER ACCEPTANCE LETTER**

I, Jéssica Cristina da Silva, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Jessica Cristina da Silva – PM Student



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**VOLUNTEER ACCEPTANCE LETTER**

I, Junior Cleiton de Araújo Cunha, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Junior Cleiton de Araujo Cunha – PM Student

**MATO GROSSO STATE UNIVERSITY  
MILITARY POLICE  
TRAINING, DEVELOPMENT AND RESEARCH CENTRE  
COSTA VERDE MILITARY POLICE ACADEMY  
PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Leonardo Domingos Gaspareto, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Leonardo Domingos Gaspareto – PM Student

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COSTA VERDE MILITARY POLICE ACADEMY  
PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Lucas Maciel, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Óttoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Lucas Maciel – PM Student

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TRAINING, DEVELOPMENT AND RESEARCH CENTRE  
COSTA VERDE MILITARY POLICE ACADEMY  
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**VOLUNTEER ACCEPTANCE LETTER**

I, Luis Cláudio Loiola Nunes, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Luis Claudio Loiola Nunes – PM Student

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PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Raissa Helena Amorim Farinha, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Raissa Helena Amorim Farinha– PM Student

**MATO GROSSO STATE UNIVERSITY  
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TRAINING, DEVELOPMENT AND RESEARCH CENTRE  
COSTA VERDE MILITARY POLICE ACADEMY  
PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Ronaldo Reiners, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Óttoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Ronaldo Reiners– PM Student

**MATO GROSSO STATE UNIVERSITY**  
**MILITARY POLICE**  
**TRAINING, DEVELOPMENT AND RESEARCH CENTRE**  
**COSTA VERDE MILITARY POLICE ACADEMY**  
**PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Salomão Fernandes Ferreira, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Salomão Fernandes Ferreira – PM Student

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MILITARY POLICE  
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COSTA VERDE MILITARY POLICE ACADEMY  
PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Tiago Fernandes Luz, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Óttoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Tiago Fernandes Luz – PM Student



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COSTA VERDE MILITARY POLICE ACADEMY  
PUBLIC SAFETY MANAGEMENT SPECIALIZATION**

**VOLUNTEER ACCEPTANCE LETTER**

I, Tulio Aquino Monteiro da Costa, 1st Year Police Officer Training Program student, Costa Verde Military Police Academy, understand the details of the research stated by MP Captain Ótoni César Castro, responsible for the selection of the participants registered under the Officer Training Program I, **accept** to participate as a volunteer of the above-mentioned research titled "The role of the TMM System in the improvement of training performance on 1st year students from the Military Police of Mato Grosso State".

Várzea Grande-MT, 25th of June of 2009.

Tulio Aquino Monteiro da Costa- PM Student



GENERAL COMMAND  
TRAINING, DEVELOPMENT AND RESEARCH CENTRE  
SUBSECTION NO. 12 CCDP/PMMT OF 20 OF OCTOBER OF 2008  
POLICE MILITARY TRAINING PROGRAM  
(CEGeSP/CAO/PMMT/2009)

**MINUTES SESSION NO. 001/APMCV/CAO**

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On the twenty six day of the month of June of the year two thousand and nine, Costa Verde Police Military Academy (CVPMA) in the main Command office room, located in the city of Várzea Grande, State of Mato Grosso, attended **TEN CEL PM ANTÔNIO RIBEIRO LEITE, PROF. MsC LÚCIA REGINA DE SOUZA, CAP PM DARWIN SALGADO GERMANO and CAP PM ALESSANDRO GONÇALVES G. FERREIRA**, President, Faculty Member, Course Co-ordinator Representative and Member of the Student Body /Ad hoc Secretary, as per Art. 17 of the Public Safety Management – C.A.O, dated 03 of February of 2009, opened session for the deliberation of the Research Project, presented by Official Student **ÓTONI CÉZAR CASTRO SOARES – PM CAP** with basis on §2º, Art. No. 3 of the Monographic Regulation. The presence was confirmed of the Officer Student, after the Document analyses. The President opened session informing the individuals present of the objective of the session, the work proposal of submitting OTP Students to the “TMM” method, and then followed by mentioning of his preoccupation for not disclosing the names of the scientific project, such as informing the amount of work load that the OTP Students would have, including the preoccupation of such fact would interfere in the results of the research, knowing that they possess only 6 months of active service and only one supervised traineeship. The Official Student made known that such sounds given to the students could carry some type of risk to them. The word was then given to PM CAP DARWIN who showed preoccupation on the individuals chosen, which are 20 (twenty) students from a total of 7000 (seven thousand) military police officers, regarding the Behaviour of the Military Police and not of the Students from the CVPMA. Sequentially, Professor LÚCIA took into consideration the problem of lack of time to implement the research, and as part of the Board of Examination of the Monograph analyzed of the sample in question, inclusive brought out the following question posed to the Official Student: Why not have qualified professionals rather than Students? As well, the Professor demonstrated preoccupation on the dissemination of the research as well expressing doubt on the sounds of the method that would be applied. The word was then given to the Member of the Student Body who questioned if the OTP Students volunteered to the research, and if there would be a legal document accepting the terms of volunteerism, as well as, requested that CAP ÓTONI be present during the research so that he would have better understanding of it. PM CAP ÓTONI began by demonstrating to the members the method selected for the “TMM”, inclusive by demonstrating some of the sounds used, emphasizing that the sounds do not harm the hearing of human beings, and as well divulged that the Students from CVPMA were chosen since they have gone through a physiotechnical test in

which no psychological problems were revealed; and since such Students went through that exam not so long ago, and if there was another sample they would have to be submitted to another exam, and due to the short period of time it would cause problems to the execution of the research. In addition, the Official Student mentioned that his research would not be regarding stress, but would be kept under the variables of aggressiveness, anxiety, fatigue, among others. He also mentioned that he had been in the OPT Main Room and explained the ethical questions of the research and obtained formal acceptance from the students as well that his theme would not be regarding the Military Police but rather limited to the CVMPA method where the Students would demonstrate efficiency as per the research in question. **Once all the present individuals spoke, and no other questions were posed for discussion, it was deliberated the acquisition of the Collegiate the authorization or not for the research to be done on human beings, and its credibility. Thus, the following were the votes presented by the President and Members:** **1)** TEN CEL RIBEIRO LEITE approved after the following demands: a) that time off be given to the Students and that the research be integrated with ESFO by finding alternatives that would not harm the Students; and b) that the data from the research be restricted to CVPMA and its disclosure to be prior analyzed by the Collegiate; **2)** PM CAP DARWIN approved the project with the same demands as the President of the Collegiate; **3)** PROFESSOR LÚCIA approved the project with the same demands as the President of the College; **4)** CAP GONÇALVES approved the project as long as the project is approved with the demand that the research be directed to the Collegiate with the formal science of the volunteer Students. It is to be known that, I, **ALESSANDRO GONÇALVES GUIMARÃES FERREIRA – PM CAP**, *Ad hoc Secretary*, wrote and signed the following document, along with the President and Members.

**ANTÔNIO RIBEIRO LEITE – TEN. CEL. PM**  
**College President**

**LÚCIA REGINA DE SOUZA – PROF.<sup>a</sup> MsC**  
**Faculty Member**

**DARWIN SALGADO GERMANO – CAP PM**  
**Course Coordinator Representative**

**ALESSANDRO GONÇALVES G. FERREIRA – CAP PM**  
**Member of Student Body**

**ÓTONI CÉZAR CASTRO SOARES – PM CAP**  
**Official Student of the C.A.O./2009**