

# The Journal of the Christian Engineers' Association

## CEA Perspective – Summer 2006

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## Editorial

John Baden Fuller

### Sheep!

Recently, while on holiday in Cornwall, we were driving carefully along a narrow country lane and came to a junction with another lane coming in from the left. Much to my consternation, a farmer with a flock of sheep arrived out of the side road just as we reached the junction. Sheep were all over the road just in front of my car. I thought, good, they will soon be passed, as about half the flock streamed past us. It was not to be however, as the farmer was leading the flock in the other direction up the road in front of me. The two dogs were sent off to round up the sheep who had gone the wrong way past our car. So I settled down to drive slowly following the flock of sheep. Suddenly, a lone solitary sheep appeared standing lost in the middle of the road behind me! I panicked! How could I attract the attention of the farmer. However, my fears were not realised, the farmer saw it and sent off the two dogs to collect the sheep and reunite it with the rest of the flock.

### Meditation

And as I drove slowly behind the sheep, I had time to meditate on the parable of the lost sheep. We all know the story so well. How Jesus the good shepherd left the ninety nine sheep in the sheepfold and went to seek out the lost sheep by searching the hillsides. I thought of the lone lost sheep standing in the middle of the road behind my car and bleating piteously.

What can we learn from this? We often stray from the narrow way and get lost on the hillsides. How we need Jesus to come and rescue us and put us back in the right way. But then I thought, our modern farming methods may give us greater insight to the way God works with us and through us. In the Cornish lane, the lost sheep was actually rescued by two sheepdogs. One appeared to be a young dog. So here was an experienced dog teaching a younger one his craft. In the same way God uses us as his sheepdogs. He is only present in the flesh through us. He uses us to rescue and lead people into the kingdom of heaven. We are his sheepdogs to lead people to salvation and fellowship with God.

## **We are God's sheepdogs**

The parable of the lost sheep teaches us how important we are in Jesus' eyes and the need to turn to Jesus in our need. But my parable of the lone lost sheep on the Cornish lane also teaches us how important it is that we do our bit. We must act like God's sheepdogs to rescue all the people we work with and those around us. Seeing how the experienced sheepdog was guiding his younger fellow, can teach us that one of the best ways of learning how to evangelise our neighbours is to learn from the experience of older and more experienced Christians, to watch them at work and to spend some time working with them.

## **The Holy Spirit**

I am writing this in the period immediately following Easter and it is appropriate that we are able to include an article giving an engineer's view of Easter. However, you are unlikely to be reading this until some time after Pentecost and that is a time when we think about the gift of the Holy Spirit and His work in our lives. It is like the power of forgiveness, we do not know what we are missing until we have experienced it. I was recently reading a comment on the work of the Holy Spirit in an ancient magazine which included a report of a sermon given by Dr. Sentamu, the archbishop of York, many years ago when he was a vicar in London. I would like to share with you what he says about the work of the Holy Spirit in our lives.

- In the gospel of John, we read, Jesus breathed on them and said, receive the Holy Spirit. The Holy Spirit is a ticklish subject. But there is no lasting work of God which is not Spirit directed. Many of us behave like the caterpillar who was enjoying eating his leaves. A beautiful butterfly went past, Ha, he said, you will never catch me flying in one of those trendy things.

## **Reviewing the Issue**

John Baden Fuller

David Kay starts by giving us an engineer's thoughts about *Easter*. Then he gives us *Ten Tips* which ought to be useful to young engineers and others new to the profession. We hope you will feel able to make further contributions to this ongoing topic. We are pleased to be able to print a letter received from Giles Meeham relating to the *Science and Religion* articles in the last issue. Then David Kay has assembled a number of articles on overseas mission topics. Peter Stern highlights what we can learn from the *African Church*. David tells us about the *Mission Aviation Fellowship* and then about a new facility pioneered by *Feba*. Finally, John Baden Fuller has reworked an article originally published in 1999 on the topic of *Stress at Work* which we hope you will find useful. It is interesting to note that, if we had more contributions from others, we should not need to reprint such articles from earlier issues of the Journal.

# Spotlight on the Crucifixion

David Kay

*Engineers may be naturally curious people, and find their imagination is captured by the physical aspects of crucifixion. In this article David looks at some of the details of the crucifixion in the context of the whole event.*

## What do we make of Easter?

I wonder what impact Easter made on us. Was it just a holiday? Have we thought about the events of the first Easter in the last few weeks?

On Good Friday, after attending church, I went to the Wirral coast, where I spotted the *Daily Mail* in a café, and noticed, in particular, the front-page publicity given to Jesus. Inside was a long article about the physical reality of the crucifixion. Some people have apparently been so fascinated by the crucifixion, that they have undergone quasi-crucifixions to experience the associated pain. Whilst any publicity given to Jesus is in principle welcome, concentration on Jesus' physical suffering may simply feed our curiosity instincts, and be a distraction from the overall reality of what happened. Similarly, the recent focus on conspiracy theories surrounding the Passion can have the same effect.

## Jesus refuses to be drugged

Upon reading through the biblical accounts of Easter, one or two things caught my attention. First, Jesus was offered a drink of wine mixed with gall on the cross (see Matthew 27v34), but he refused it. He was faced with a decision that he could not spend hours mulling over (no pun intended!). He probably felt that accepting the drink would mar his sacrifice. In rejecting the drink, he was not, of course, saying, "I like the pain"; rather, he was choosing to give God greater glory.

Why was he offered the drink? Maybe the soldiers had an ounce of compassion, and also thought their gesture would salve their conscience. The impact of Jesus' behaviour on these soldiers and everyone else who witnessed his suffering is a most important element of the crucifixion, and, to be understood properly, must be seen against the wider context, which includes what happened after Jesus died.

## But later He accepts a drink

Later on, Jesus, experiencing the terrible effects of dehydration, said, "I thirst" (John 19v28). Did this statement represent a moment of weakness, when his own needs came to the fore? This time he accepted the drink offered to him – sour wine, which presumably was vinegar. In doing so, he did not materially lessen his suffering, as he was about to die anyway. Maybe the liquid he received gave him the strength to utter his final words on the cross: "It is finished". This interpretation is in line with the principle of being a servant that characterised his whole life. In saying "It is finished" Jesus was referring to his life's work, and especially to the bearing of the world's sin on his shoulders.

## Conclusion

So, as we consider again the events of Easter, are we satisfying our curiosity instincts, or do we seek inspiration? Focusing on what people did to Jesus feeds the former. Focusing on what Jesus did for people feeds the latter.

In conclusion, it is almost impossible to follow someone unless you feel inspired. The cross must never be worked around; it is central. Nevertheless, without the resurrection no-one would have been able to believe that Jesus was really God's Son, and there would have been no possibility of receiving the life-giving Holy Spirit. Praise God that it all worked out well!

## **Tips for Engineers**

### **We need your Comments**

We are considering placing an article on the CEA website on this topic, with young engineers particularly in mind. Ten topics (see below) forming the basis of these tips have already been identified, and some draft ideas have been produced. We now want *your* ideas, especially if you like the idea of drawing upon many years experience to help other people. Your contributions will feed into the final material, subject, of course, to any necessary editing and selection of text, should the response exceed what we can cope with on any particular aspect.

### **The ten topics are as follows:**

1. Recognise the privilege of working in engineering
2. Seek out other Christians, whatever the extent of their engineering appreciation
3. Be aware of the extra pressures a Christian engineer can experience
4. Remember that engineering can be quite a difficult challenge
5. Recognise that engineering is a genuinely Christian vocation
6. Recognise that engineering is constantly in change mode
7. Do not expect to get by in engineering without disappointments and frustrations
8. Guard your prayer life – do not let engineering activities squeeze it out
9. Remember it is not the “Caring” profession, but people still need care
10. Look for ways of helping others, both engineers and those of other disciplines

Please send your ideas and contributions to me (see inside front cover for contact details).

David Kay

## **Letter from Giles Meehan**

I have a few questions in response to the two articles about creation in the *Perspective* Winter 2005/6 Journal.

I agree completely with the “Science and Religion” article being so positive about the relationship between science and Christian faith, and with the evidence pointing clearly to an intelligent creator rather than chance and natural selection. Also the Bible is obviously not a scientific text book with details of physical/biological mechanisms and processes. But surely that cannot mean that the things which it says are true (when understood correctly) can be subjected to scientific *theories* which change with the seasons? As you say, theories “come and go, but God's Word remains for ever.”

But all tenable views about the origins of the earth, other than God's 6-day creation about 6,000-10,000 years ago, must require there to be death in the world before the Fall. That means the physical death of plants and animals (and logically probably the mortality of man too), before man rebelled against God. Can this be reconciled with an understanding of what the Bible says? Genesis says that before the Fall, God's creation was "good", all animals were vegetarian, and there were no thorns and thistles. Did God then use death as part of his "creative" process, using natural selection to allow weaker kinds to be wiped out by stronger and fitter kinds in a hostile ("not good") environment?

Man was not supposed to die, but to live forever. But as a result of his rebellion, spiritually he died then (losing the close relationship with God he was designed for), physically he started to die then ("dying, you will die"), starting to age and degenerate until much later he would actually die. When Jesus came, he died (physically) to break the curse of death on man. If there was death before the Fall, then it is not remedied by Jesus' death on the cross and his resurrection. Similarly, where then is our hope for Jesus' return, the resurrection, and the creation of a new heaven and earth, which all of creation groans and longs for? The idea of billions of years to explain the fossil record also suggests there was probably no literal global flood in the time of Noah. Which may question how seriously we should consider God's judgement and/or salvation?

Now, plants and animals can certainly adapt to their environments, by a process of mutation and natural selection (where certain types do not survive). But these mutations can only lose (or change) information/DNA rather than adding, and only ever produce the same kind (species or closely related species). E.g. dog breeding – you always lose information (lose variety), and you always get dogs!! But there is no scientific evidence that plants and animals have ever evolved into increasingly more complex or new kinds. The fossil record does not show intermediate kinds, but only examples of those creatures we still see living today plus those now extinct, and does not support Natural Evolution – as Darwin himself admitted! Also, is there any scientific mechanism for adding information to DNA or producing increasing complexity?

In conclusion, I find it difficult to believe that "evolution" is biological science. Along with geological uniformitarianism, dating methods based on circular arguments, and some interpretations of the fossil record, it is still the result of conclusions from unproven hypothesis built on unproven hypothesis. And although Denis Alexander pointed out that it is not a philosophy, it *is* inseparable from the secular philosophy which produced it. Many of the keenest proponents of evolution insist that everything must be explained *within* nature, and refuse to accept any possibility of anything being true which cannot be measured and understood by man (strictly, an unscientific adherence to Materialistic Rationalism). This may be to remove from science the need for God, or to remove "superstition" from "reason", but if God is true, then doing this is bad science! As Christians, we should embrace science and praise God for his wonderful creation. But can we believe an idea like evolution? May God graciously teach us.

*Giles Meehan is qualified in Structural Engineering and Dynamics, and is currently engaged in some film and TV production work for the Internet.*

## **Poles Apart**

### **What the Church in the West has to learn from the African Church**

A reflection on what the Church in the West has to learn from the African Church by *Peter Stern*, a director and trustee of CED, following an Anglican Church study day on mission.

## **Differences**

Many of us in the 'West' are not aware that today only 38% of church members in the Anglican Communion are white compared with 62% non-white, yet those who are white still tend to take leadership for granted, often adopting patronising attitudes towards non-whites. A church-warden's wife in East Sussex was heard to remark: "Isn't the reason that so many Africans are Christians is because they are not educated?" While it is true that a very large number of children in many countries in Africa do not go to school, every country in Africa today has universities and colleges of higher education, and as education as we understand it was introduced through Christian missions, a large proportion of the educated people in African countries are Christians.

## **Misconceptions**

Today many African people visit countries in the West and many visitors from the West visit countries in Africa, yet each side still has very different views of the other. A commonly held concept in African countries is that Christianity is a white person's religion which originated in the West. It is true that the Christian faith was introduced into many countries in colonial times by missionaries from Western countries, which has tended to obscure the fact that Jesus lived and ministered in the Middle East where the first churches originated. A misconception commonly held by people in the West is that Africa is a country, rather than a continent of many different countries, cultures, languages and traditions.

## **Worship**

A major difference between worship in Africa and worship in the UK is the atmosphere. In our climate, churches have doors which are closed during worship for many months of the year, whereas in warmer latitudes doors and windows are usually open. This, together with the natural charm and friendliness of so many people from Africa, leads to a greater sense of warmth, informality and community which African people miss when they join us in worship. Some years ago I was part of a small group from the diocese of Winchester visiting the diocese of Busoga in Eastern Uganda. We had travelled by air to Nairobi and then on by road through Kenya to the Uganda border, where we arrived on a Sunday morning. By arrangement an engineer employed by Water Aid in Busoga District met us with a Land Rover at the border and drove us to a church at Entebbe, where we found an ongoing service at which the Bishop was ordaining new priests. We hoped to slide into the back of the church unnoticed, but as soon as the Bishop saw us, he stopped the ordination to give us a warm welcome and introduce us to the congregation. This would never have happened in a church in this country, simply because our priorities when strangers arrive late at a service are different. An incident that would have been observed by the Ugandan congregation was that the Water Aid engineer, a South African, did not accompany us into the church, but left because he had other priorities (probably golf) for a Sunday morning.

Another feature that marks the difference between the church in Africa and the UK is the time spent at worship. Our services are carefully scheduled time-wise, punctuality is important and sermons are usually short. In Africa the starting time is not rigid and may be delayed for late-comers, and services often run for two hours or more. Many members of African congregations may have had to walk long distances to church, and without the many other activities that we find to do on a Sunday, they would be disappointed with a short time for worship.

## **Poverty**

A very important difference between churches in the West and in Africa is the widespread poverty in Africa, which has persisted in spite of 30 or 40 years of economic aid and technical assistance. A few years after the incident in Uganda described above, the same bishop was staying in a parish in Southampton, and one day his hosts took him on a trip across the Solent to Cowes. What really

staggered the bishop were the thousands of expensive boats owned and used entirely for pleasure. Back in Uganda the only boats seen on Lake Victoria were used to support families' livelihood through fishing and sometimes transport.

How is it that some countries in South East Asia, which were at much the same economical level as many African countries 40 years ago, are now so far ahead in economic terms? This is usually explained as a combination of historical factors such as slavery, the colonial systems, civil wars and genocide, the prevalence of corruption at all levels of public administration and, more recently, the aids pandemic. While these may all be valid, it is still difficult to understand why many countries in Africa are so far behind. But whatever the causes, poverty is a very significant difference between the churches in the West and in Africa.

Another major difference which came to the fore at the last Lambeth Conference was the polarisation of attitudes within the Anglican Communion over the issues of homosexuality and the consecration of same-sex partnerships. While it was regrettable that bishops on both sides made some very uncharitable statements about their opponents, these are all issues that the whole church needs to take very seriously. We have much to learn here. How is it that a few dioceses in the Episcopal church of the United States can introduce measures which cause discord with the 98 dioceses of the church in Nigeria?

## **Global Christians**

In the creed of the Anglican Church we proclaim "We believe in one holy catholic and apostolic Church." St Paul says in Ephesians 2v14, "Christ is our peace, who has made us one, and has broken down the barrier which divided us." Clearly unity should be an important feature of Christian discipleship, but now after 2,000 years we are still very severely divided. However, today the prospects are more encouraging than they have been in the past. There is now dialogue between the Eastern Orthodox and the Roman Catholic Churches, between the Roman Catholics and the Anglicans, and between the Anglicans and Non-conformist churches. Within the Anglican Communion there is a need for patience and humility in seeking solutions to our present divisions, particularly over the issues which separate some of the American Episcopalians from the majority of Anglicans in Africa and Asia.

To be a global Christian at the beginning of the 21<sup>st</sup> century must be our target, but it is still fraught with problems. Meanwhile there is a great deal that we in the Anglican church in the UK can do to help this on its way. Every time there is an exchange of visits between members of parishes in this country and members of parishes in African countries, people can grow in mutual understanding. We on our part can discover and appreciate the values and achievements of other cultures, so different from our own. We can join in the efforts being made throughout the UK to "Make Poverty History". We can be thankful that this movement is opening our eyes to many of the causes of poverty in Africa, and try to understand why our government and other western governments find it so necessary to protect very high standards of living in the West at the expense of allowing the peoples of African countries to benefit economically from their resources in minerals, agricultural production, and industry.

We can also try to appreciate the enormous diversity of the Christian Church throughout the world, recognise the sophistication of non-western cultures, and help if only in a small way to work towards the resolution of the problems which divide and separate, so that one day "one faith, one baptism and one Church" will become true.

For further information about CED, contact Mrs Barbara Brighouse, tel. 01844 290642, e-mail: [admin@ced.org.uk](mailto:admin@ced.org.uk).

# **Flying for Life**

David Kay

## **Overview of MAF**

From flying teams of doctors who perform life-changing surgery to evangelists who share the Gospel with those living in spiritual darkness, Mission Aviation Fellowship (MAF) brings physical help and Christian hope to some of the world's poorest people. With over 130 aircraft in more than 30 countries, MAF is reaching the unreached every day of every week. MAF staff are not evangelists or doctors, but MAF planes provide safe and efficient travel to the people they serve. MAF pilots land in remote areas, reaching communities, which could take days or weeks to reach by road.

## **An aircraft engineer's role**

Tim Derbyshire began life with MAF as an aircraft engineer. Excited about MAF's work, he enthuses, "All the passengers we fly and the organisations we support make a difference to so many people. Our regular monthly medical and evangelistic safaris save lives. Churches are planted and the Gospel proclaimed in remote areas that are not easily reached by road". Now serving as a Quality Manager in Tanzania, he spends much of his time at his desk, collating statistics, investigating manuals for anything unusual and keeping the maintenance work under review. Although often impatient to get his hands dirty again, he knows that his role is vital as it allows MAF aircraft to continue their life-saving flights.

## **Teamwork at MAF**

As IT specialists in Kenya, Paul and Fiona Waugh know the importance of using their professional skills to help keep MAF planes in the air. Paul explains, "We serve behind the scenes, providing support with hardware or software". Working as part of the support team enables MAF's vital work to continue. Pilots can continue flying for missions and aid organisations who are supporting sick or suffering people like four year-old Ramadan. Aarno Alanne flew a team from Christian Blind Mission to Moyale, a remote border town between Kenya and Ethiopia. Ramadan was diagnosed there with bilateral congenital cataracts and flown back to hospital in Nairobi to receive specialist surgery. A successful operation restored the sight in both eyes and he was soon impatient to get home and ride his bicycle.

## **Engineering training**

As far as the availability of experienced engineers is concerned, MAF found that today's industry is not producing engineers trained in the kind of aircraft that MAF operates. MAF's response was to set up an engineering scholarship. Apprentices train at Missionary Maintenance Services (MMS) in Coshocton, Ohio, for 30 months. They take the examinations for the Federal Aviation Administration airframe and power-plant mechanic licence, gaining the necessary qualifications to become aircraft engineers.

From day one an MMS apprentice is a productive member of the mission community. Mission aircraft are repaired, overhauled or modified under the supervision of licensed trainers. On top of training, rapid response trips to repair aircraft that require special assistance enable apprentices to put their experiences into action. They fly out with their trainers to undertake these assignments, dramatically reducing the down-time of the aircraft. On completion of their training, apprentices will be posted overseas to their first assignment with MAF.

MAF has a network of volunteers throughout the UK who visit churches and community groups to present the work. MAF is a registered UK charity, and a member of the Evangelical Alliance.

MAF can be contacted at: Castle Hill Avenue, FOLKSTONE CT20 2TN. Tel: +44(0)1303 850 950, e-mail: [maf@maf-uk.org](mailto:maf@maf-uk.org), website: [www.maf-uk.org](http://www.maf-uk.org).

## **Have suitcase; will broadcast**

### **Christian radio broadcasting**

David Kay

Today there are many organisations worldwide involved in Christian radio broadcasting. One of these organisations is Feba, which communicates the gospel through the use of radio and programme follow-up in Africa, Asia and the Middle East. Modern technology has played a significant part in developing this form of ministry, not least for Feba, where developing a suitcase studio is currently one of the main activities in the engineering department.

Feba UK's engineers have produced a ready-to-use mobile studio which can be hand-carried to any location. On the outside it looks like an ordinary case that you might take on holiday. Open the lid, however, and you have a ready-made studio! Designed by Feba's engineering team and weighing less than 20 kg, this compact little kit contains mixer, computer, mini-disk recorder, CD player, microphones and speakers – in short, everything you need to produce a radio programme. The studio is ideal for beginners to use, and costs only around £3,000 (including parts and assembly).

### **The perfect answer**

Traditionally Feba has focused on static studios, but small portable studios open up many new possibilities for programme production: getting a studio up and running quickly, perhaps in sensitive areas where you do not want to be noticed; being able to move on quickly, if required.

Many of Feba's audiences live in remote rural areas. Some programme presenters have to travel long distances to a studio, and gathering people together to record discussions or songs can be a complex and costly business. The suitcase studio provides the perfect answer, as Feba can carry out recording in all sorts of places. People can even listen to Feba broadcasts in prison – in countries as far apart as Turkey, Ethiopia and Pakistan.

Programming teams in Africa, with its huge rural population, are delighted with the new facility. Feba staff in Mozambique are using a suitcase radio for music recording among the Sena people, and another has gone to Chiconono in the north of the country, where Feba and a partner mission are planning an FM ministry to the Yao people. A further studio has been delivered to a partnership making programmes for the nomadic Afar, who inhabit a barren desert region of north-east Ethiopia, Eritrea and Djibouti.

As well as overcoming problems of geography, the suitcase studio meets a vital need for security. The very first one produced in 2001 went to a country in the Middle East where it would not be safe to make Christian programmes openly. Today Feba's partner there is making programmes in the privacy of his home. Now the Middle East team is making plans to send a studio to Iraq, where co-workers will make programmes designed to encourage and equip the Christian church.

The studio has generated excitement not only in the Feba world but also among other Christian groups. One new user is the London-based Christian group TMC Communication Network. Just starting out in radio, they're using it to train staff in radio techniques and to make pilot programmes for potential outlets including hospitals and prisons.

Feba engineers have the capacity to produce two suitcase studios a month, and are planning new features for future models. The next version will allow transmission using a simple FM antenna. Its advent may prove timely, as radio regulations are relaxing in a number of countries – including Pakistan and India, which are actively encouraging community radio. Also on the agenda is the option to run the studio on internal batteries or solar panels – a perfect antidote to the power cuts so prevalent in developing countries. In addition, an even smaller version is under consideration. “We're working on a studio that could be carried on to a plane as cabin baggage,” says Feba UK's Principal Engineer, Charles Randall.

The engineering department consists of four engineers, who have a broad range of backgrounds. As well as providing a pool of expertise for general studio engineering support for the various Feba production studios around the world, the engineers put together studio equipment systems and design studio facilities. They do not have clearly segregated roles, but aim to develop a broad spectrum of skills. Their strengths lie in different areas – IT, system design, music recording, etc.

Feba is a registered UK charity, and a member of the Evangelical Alliance. Feba UK can be contacted at: Ivy Arch Road, WORTHING BN14 8BX, UK; Tel: + 44 (0)1903 237 281; e-mail: [angela@feba.org.uk](mailto:angela@feba.org.uk); website: [www.feba.org.uk](http://www.feba.org.uk).

## Stress at Work

John Baden Fuller

*Some years ago, Mrs Sheila Stephen gave a talk at the IEE in London on the topic of Stress at Work. John Baden Fuller wrote a paper, based on her talk, which was published on the IEE web site at the time. A shortened version was published in the CEA Newsletter in the Spring 1999. John Baden Fuller has reworked the contents of the paper to produce this second edition.*

### Introduction

Stress is a subject of national concern. Research some years ago estimated that in the UK alone, 270,000 people take time off work every day because of job related stress. Managers can identify consequential costs. But there are wider concerns in the community. The creation of greater health and wealth for a fortunate minority has deprived many others. Quality of life and health have become issues. The trouble with stress is that it is like the weeds in our gardens. It is insidious. It creeps up on us. It changes our lives. Most of us do not realise that it is happening to us until that *last straw* event which makes us aware of how bad we feel. But, by then it is too late. The toll has been taken of our health, our relationships and our families.

Although it is often used loosely in popular parlance, stress is a word with a technical meaning. There is a distinction between pressure and stress. *Pressure* is the input or start of the process. *Stress* is the outcome, or possible response to pressure. Pressure is a stimulus and we all need it, otherwise we would not have got out of bed this morning, or got to work on time. Pressure is needed if we are to get that job completed in time. Pressure can lead to positive growth, but excessive pressure causes excessive stress. It is useful to think about it in terms of the old-fashioned pressure cooker. We all have our bursting point and we all have a point at which too much pressure causes stress and too much pressure is bad for us.

## The Physiology of stress

Stress is a physical condition. It is physiological. Most people are not aware of how wonderfully connected we are, our minds, our bodies, our spirits and everything else. We are very much whole people. The Bible says that we are fearfully and wonderfully made, and those who work with people who are suffering from job stress know how true that statement is. The physiology of stress is defined as a *flight* or *fight* mechanism. Imagine what would happen if a lion was to burst in on you now. Your body would immediately tense up because messages of danger are sent from the brain to various parts of the body. Hormones begin to circulate to prepare us for action, either *flight*, we run away, or *fight*, we engage in battle. Our whole bodily functions undergo an enormous change. As a result we actually feel different physiologically.

When the emergency is over and we have taken action, our body returns to its natural state of rest and digest. Stress is not always bad. It is a natural reaction to danger. Stress causes us to be more alert. It causes the adrenaline to flow. It gives us added strength and alertness to fight or to run away. However, after the action is over we need to rest and recover. The problem for us is that we may never get the chance to recover. Twenty-first century threats and changes and challenges are very different in their nature and duration than to being able to fight or deal with a wild animal. This is important when it comes to stress management. If our bodies don't have a chance to return to the state of rest and digest, those major organs that are acting differently under stress, themselves come under stress and we can damage our immune systems and our major organ functions. We become vulnerable to stress related illnesses. We need to take control and action to get our bodies back to the state of rest and digest.

## Personal signs of stress

Most people are not aware that stress manifests itself in our whole being. It isn't something that just affects our feelings or our work output. The typical signs and symptoms of stress listed below show how it affects us. Suffering from one or two of these symptoms does not mean that we are under stress and we are going to have some difficulties, but suffering from up to five of them could be an indicator that we may be suffering clinically from stress. It is very often the physical signs that spur people to go and visit their GP.

- *Emotional signs:* mood swings, worrying, anger, guilt, feeling drained, no enthusiasm, nervous, apprehensive, loss of confidence, helplessness, lack of self-esteem, lack of concentration, withdrawal into daydreams.
- *Behavioral signs:* accident prone, poor work, increased irritability, increased smoking, increased drinking, drug taking, increased eating, loss of appetite, change in sleep pattern, loss of interest in sex, poor time-management, impaired speech, withdrawal from supportive relationships, taking work home more often, too busy to relax, self neglect, (many of these are features of modern society!).
- *Physical signs:* palpitations, pain or tightness in chest, indigestion, breathlessness, nausea, twitches, tiredness, aches and pains, skin rashes or irritations, susceptible to allergies, clenched fists or jaw, fainting, colds and infections, recurrence of previous illnesses, bowel problems, rapid weight gain or loss, tension, change in menstrual pattern for women.

## Signs of stress in work

There are some helpful ways for recognising stress in ourselves and in others. Managers particularly need to recognise stress. Managing a large number of people and their work is a most stressful activity. It often appears to be easier to get on with the job oneself than to oversee other people doing it but, if we are management, we are responsible for other individuals and their work.

- *Stress signs:* loss in productivity or performance; high levels of errors or accidents; high levels of lateness, absenteeism or sickness; non cooperation; excessive anger at minor irritations; clashes with colleagues; obvious level of tension or anxiety; a fatigue, weary or despondent air; hyperactivity; inability to slow down or relax; lack of care with personal appearance.

People under stress often work even harder and yet become more unproductive. Pre-existing stress makes you more likely to succumb to additional stress factors. Our fit to our job is also relevant. Quite a lot of job stress comes from people being in the wrong job. They are square pegs in round holes.

## **Our personality affects our reaction to stress**

Our liability to stress is governed by factors in our own personality which we are born with. There is a distinction between a type A personality and a type B personality. A type A person does five jobs at once, can answer the telephone and write a report on the computer at the same time and can rush around being more productive than most people in a day. They get impatient at traffic lights and can't stand being in queues. That is the downside. The upside is that they are the charismatic achievers of this world. They are also slightly more prone to stress. The type B personality is the laid back person who just reads the newspaper if he is stuck in a queue. Whose attitude is 'that doesn't matter, that job can be done tomorrow, we don't need to do that today'. The downside is that the type B personality is probably much less likely to go and look for support from other people. Some personalities are more susceptible to stress than others.

## **Stress at work**

Stress is the biggest occupational hazard we face. It is having a noticeable toll on British industry. Managers at all levels are under stress. Some particular causes of stress among modern workers are:

- new management techniques, long hours, bullying, workaholic cultures and the relentless pace of organisational change, downsizing, job satisfaction or dissatisfaction, work overload or underload, time-pressures and unrealistic deadlines, long hours, taking work home, the global market economy, travel, flipping from one country to another, lack of power and influence, lack of control over the working environment, meetings, conflict of beliefs, threat of job loss, move with job to progress career, unsympathetic or incompetent boss, difficult relationships with colleagues, unrealistic objectives, conflicts over work and family values, feelings of being undervalued, promotion prospects, rates of pay, office politics, lack of consultation and communication in time of change and information overload.

One edition of the Sunday Times carries as much information as an individual gleaned through his entire life in the 17th century.

## **Stress management**

*Identify, act and control.*

We need to think about stress and its effects. We have a responsibility to do three things, to *identify*, to *act* and to *control*. *Identify* those things which can be changed. Then *act* to change them. Where things cannot be changed, we need to learn to keep them in proportion and take positive steps to *control* their effect on us. These are the key words when we come to stress management, *identify, act and control*.

We need to balance coping mechanisms and sources of pressure bearing in mind our own personalities. It is possible to do this. It is what we work to achieve. There must be a balance between pressure and the mechanisms for coping with the pressure. In times of stress, we can benefit

enormously by looking at our situation differently and by learning what has come to be called *decatastrophising*! Are we looking at a mountain in which case it is a catastrophe or are we looking at a molehill in which case it isn't and it can be managed.

Managers ought to provide support to the work force to try to alleviate or reduce the causes of stress. We need to be realistic, offer support, praise, value, give credit to staff, and avoid blaming and scapegoating. If we can identify a scapegoat either within or outside the organisation, we can transfer our responsibility to someone else and we don't have to do anything about the problem.

We can summarise stress management into four categories: *cognitive, physical, personal and emotional*.

## **Cognitive**

We can make ourselves feel sad by recalling a sad event or a sad story or picture. Similarly, we can make ourselves feel happy. We can change our feelings by our cognitive functions. When we become stressed, we lapse into what can be called *black and white thinking*. It's either the best thing since sliced bread, or it's a total disaster. Nothing appears in shades of grey. We get into black and white thinking and the negative thinking keeps us stressed and depressed. So a very positive exercise is to untwist the negative thinking of all or nothing. We can learn to challenge our *all or nothing* thinking. Rome was not built in a day, so how can I expect to get that project written up by the end of the week? I must not let myself feel that, if I can't, I am a disaster or a failure. I can get there! I can do it! When under stress, we often make generalisations. This is particularly so with young people who are under stress. We get up in the morning, and everything is bad and it's going to be bad for the rest of the day. Of course, if we expect it to be bad, it will be bad. We need to learn to control our thinking. Is life bad, or am I just having a bad day? If I am just having a bad day, tomorrow might be better.

When we are under stress, we start to see the whole of the rest of the world, through our own particular stress. We therefore discount anything positive that happens. We do not remember the 97 good things that happened; we just remember the three bad things. We use a mental filter and discount positives. We jump to conclusions. We magnify or minimise situations or difficulties. In stress management we learn to challenge each of these tendencies. We can learn to say, 'Is this a mountain or a molehill? Am I seeing everything through the eyes of my stress? How would somebody else view this situation? Am I discounting the good things that happened today and only taking home the remembrance of the bad things?'

Under stress we get involved in emotional reasoning. We analyse our feelings, and insert lots of *should* statements, usually attached more to ourselves than to other people. We can learn, sometimes on our own, but also with the help of other people, to challenge the compulsions. 'Who said you should have the report written by the end of the week?' 'Who said you should have the kitchen floor scrubbed by 8.30 every morning?' Where are those messages coming from? They come from ourselves. We label ourselves when we are under stress. We can personalise and take the blame for every wrong or bad thing that happens. If we are going to deal with ourselves cognitively in stress management, we need to learn how to challenge each and every one of these tendencies. They are all there to a lesser or greater extent depending how stressed we are.

## **Physical**

We are fearfully and wonderfully made. It has been known for a GP to prescribe exercise to a patient under stress or with mild depression. The reason is that exercise uses up the hormones released to enable us to combat the threat of physical danger. The body then reverts back to its normal state of rest. Jogging, brisk walking, or swimming are the sorts of exercises to help our bodies deal physically with the effects of pressure and stress. They are very effective indeed. However, they must be used

sensibly with moderation. It is also important to minimise the use of unhealthy compensators such as, hitting the Mars bar, or the whiskey bottle, or the cigarette packet, or whatever else it might be which we often do when under stress. These just put our physiology under more stress.

We need healthy eating together with simple relaxation techniques. Relaxation calms the body down and helps the body revert back to the position of rest. When our body is relaxed, our mind slows down, our heart stops palpitating, our breathing reverts back to normal and we are less likely to hyperventilate. As our mind stops racing, so our cognitive functions are able to take more control over our stress. We feel better and think differently about our stress. Doing a simple relaxation exercise for ten minutes actually produces beneficial chemical changes within the body even if we don't feel better at the end of it.

Physical exercise and relaxation techniques also increase the body's stock of hormones that help us feel good. So we all need sleep, leisure and creativity. We may think that we are too busy for hobbies, but if we can lose ourselves in something creative, we can put aside our thoughts and worries and difficulties. We also need lots of laughter. You may have heard of the man who claimed to have laughed himself out of cancer. He got every comedy video available and arranged laughter therapy sessions for himself. He believes it was due to that therapy his cancer went into remission.

## **Personal**

What we are seeking for our own personal stress management is a knowledge of how to balance our expectations. Type A people will be striving for a fantasy level of output and need to learn how to target expectations and performance to the probable and the possible. We all know about the tyranny of the urgent. We must learn to use time management to sort out the important from the urgent.

Do we separate our work from our home life? Many people have a strategy of doing something completely different when they come home from work so as to leave its problems behind. Some play a tape on the journey home. As soon as they hear that tape, they know they are leaving work and getting ready to be at home. At work, make a conscious effort to have a lunch break in a room separate from where you work so that you can actually switch off. Working from home can bring with it lots of stresses and strains. Have one room in the house set aside for work, so that the rest of the house is not affected or contaminated by the problems and difficulties that may arise.

Exercising our communication skills and seeking social support is beneficial. When we are under stress, we often cut ourselves off from the very things that are most helpful to us, particularly other people. 'A burden shared is a burden halved'. Sometimes we get really worked up, everything seems to be going wrong and we are at the end of our tether. It may even be so bad that we feel like screaming. But sit down at coffee and have a good talk about our problems to a sympathetic listener. Then after we have got it off our chest, we can go back to work and feel better. That is the great benefit of having someone to share with us and to listen to us. Learn to say NO! We do not like to use the word *no* in case we get passed up, forgotten about or not remembered, but it can be very important. These sound very simplistic little techniques and strategies but they can become very effective.

## **Emotional**

As well as people being square pegs in round holes in their jobs, some people find that they can't be themselves at work, and that puts them under enormous stress. We often feel that we have to keep up an image that goes along with the job, creating within ourselves internal conflicts. We need to enhance our self-image. Keeping in touch with our feelings, and learning how to manage them, is very important in stress management. Having somebody whom we can trust, whom we share our feelings and emotions with, can be very helpful. We need to seek support and express emotions appropriately in a safe setting, possibly with a counsellor. We need to learn to be assertive without

being aggressive. Don't ditch your belief systems. We all have belief systems. They keep us going. They help us function in our lives. Quite often, under extreme stress, and particularly under trauma, our belief systems are shattered or challenged. If we don't work on those belief systems which are keeping us going now, they can actually be part and parcel of our breakdown. But if we ditch them, along with our stress, we will be in trouble. We may not give enough significance to our faith. We need to be sure that it is intact, because it helps us cope with stress and distress.

## Conclusion

Stress is a physical as well as a mental condition. We can help ourselves avoid excessive stress and its associated physical and mental difficulties by taking corrective action, some of which may be very simple. We can actually quantify stress. Pen and paper exercises can be very useful and help us identify the various components in our particular job stress. It can involve external things like a new computer system but also involve internal things like our own belief systems and all sorts of other team dynamics. Such a list can be very helpful. Then we can take measures to alleviate the causes of stress and to minimise their effect on us. We must *identify*, *act* and *control*. We *identify* the causes of stress; we *act* to remove them as far as possible, and we attempt to *control* their effect on us. Last but not least, a lot of it is up to us. Make time to be yourself. Managing stress is our responsibility. We need to make changes. The saying is true, 'If you always do what you've always done, you'll always get what you've always had'. There is a well known Chinese proverb, 'The journey of a thousand miles begins with one step'. So, if we are going to manage our stress, we need to take the first step and we need to do it **NOW!**

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