

The Journal of the Christian Engineers' Association

CEA Perspective – Summer 2004

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Editorial

John Baden Fuller

As I expect many of you know, CEA grew out of the provision that UCCF made to nurture graduates when they left university and left the fellowship of the University Christian Union. Recently, UCCF decided to concentrate all their effort on their student ministry. Their Professional Groups, of which CEA is one, have become independent or affiliated elsewhere. So we are now an affiliated part of *Christians at Work* and you regularly receive their newspaper, *Net.working*, as well as our *CEA Journal*.

Christians at Work send out all their membership information with the Spring issue of *Net.working*. With the various pieces of information, I nearly missed the request to renew my CEA membership. I hope you did not lose yours. We would greatly appreciate its return. Even if you pay your subscription by direct debit, *Christians at Work* office would like you to sign a membership declaration each year. The CEA committee are very happy that CEA is an associate part of *Christians at Work* so please do return the membership declaration and your annual subscription. Then I am sure that we will all make Gail in the office very happy.

I am sure that our mistakes in the production of this Journal cannot be blamed on Paul Rand who has served us admirably for the last five years as Editor. He even wielded the editorial blue pencil very firmly on some contributions I wrote for the Journal! He has also been a valued member of our committee and we shall miss his wise council and spiritual insight. We pressed him to continue on the committee even though he could not continue as Journal Editor, but he declined. However, we are very pleased to welcome Chris Rasiah to the committee. In the *Committee Report* in the last issue,

Paul told us something about Chris and how he had appeared out of the blue to fill the vacancy for which we give Glory to God. However, the committee is still very small and would be more effective if it had one or two more members. If any member is able to offer to serve on the committee, please let me know. The duties are not onerous, we only meet twice a year and travelling expenses are available.

Further to my article about **Modernism and Postmodernism**, in the Summer 2003 issue of our Journal, opinions have changed and people are no longer tolerant of strongly held beliefs. Writing recently in the UCCF publication **NB** (April 2004) Richard Cunningham, UCCF's new Director of Student Ministries, says that postmodern society, for all its vaunted openness to spirituality, has become intolerant of orthodox belief. Christian students are put under pressure to conform to a secular lifestyle and belief. Christians with strongly held views are accused of intolerance.

CEA has a close and friendly relationship with *Christian Engineers in Development* (CED) and Dick Waller, one of their directors, writes about their experience in Uganda. Fortuitously, when Dick's article arrived on my desk, I also received a Newsletter from the *Uganda Development Services* which is another charity working in a small way in Northern Uganda. Dr. John Maitland wrote about the ICT work that they are doing in the Summer 2002 issue of our *CEA Journal*. In the article I have copied some of the encouraging news of their activities.

Are we being Evangelistic?

John Baden Fuller

What is CEA doing?

As a continuing supporter of UCCF, I was invited to attend one of the thanksgiving services to celebrate 75 years of UCCF and its predecessor IVF. It was an inspiring service but I was disappointed that greater numbers did not attend. We were invited to tea and cakes afterwards. In discussion, as I was trying to explain what CEA stood for, I was challenged, **What is CEA doing to encourage our members in evangelism?** and I found it difficult to reply. Our aims say nothing about evangelism. But I am sure we all accept the need to be evangelistic.

So at the last committee meeting we spent time discussing whether we have been wrong in not stressing evangelism more, and what we can do to remedy the situation. I was shaken by the realisation that I could not give a suitable reply. I could not give details of evangelistic activities that we had supported or sponsored. Directly evangelistic articles are few and far between in our *Journal*. What do we do evangelistically?

Salt and Light

Recently in our Church, we have been challenged to be **Salt and Light**. How can the Church and its members be evangelistic effectively in our community or where we work? In reply we identified activities, such as the local schools, in which we can participate and provide some Christian influence. How can we translate that idea into CEA thinking? Let us be **Salt and Light** among our peers. Look at the first of our aims, which is printed on the inside cover of this Journal. It is to help Christian engineers to maintain a consistently Christian stance in our work. I feel reasonably proud that this is what we have been doing in our activities and in our *Journal* over the years. But is it sufficient? It is all too easy to be complacent, and I am also preaching to myself here. It is good to be salt and light. We can have a reputation for honesty and integrity but do people know that we are Christians?

Can we defend our faith?

Are we always prepared to make a defence to any one who calls us to account for the hope that is in us? (1 Peter 3.15). Can we justify what we believe? How well do we know the basics of our faith and belief? This is something that we hope to address in this and future issues of our Journal. To be in the world and not of it (John 17.13-19) means that if we stay close to Jesus, then the values of the world will not shape our thinking but our Christian values will shape the world around us. To be evangelistic we must not just know the answers but we must engage with the world in which we are working.

Prayer

So how can we be effective? The obvious Christian answer is that we must be steadfast in prayer. The problem is that it all sounds too trite. How many of us manage adequate time for prayer in a busy work/home/family and church schedule? I think that we all wish we could do better. We probably devote too little time to private prayer. But Christian teaching is that great things are worked by prayer. Paul, writing to the Thessalonians, tells them to “pray continually” (1 Thes. 5:17) and Nehemiah prays an arrow prayer while he is in conversation with the king (Neh. 2:4). The devil wants to distract us away from any time of prayer. We need to do our best to be continually in an attitude of prayer. Special times and places are helpful, but we can also pray at any time and whatever we are doing. And as we pray, we move more into the sphere of our personal fulfilment and the centre of God’s purpose.

May God bless you as you seek to be salt and light in His name.

John Baden Fuller is an Electronic Engineer and retired as a University lecturer. He is Chairman of CEA and has been a Reader (Local Preacher) in the C of E for over 45 years.

The F Factor

Beverley Shepherd offers some ways through a formidable barrier.

What stops you witnessing for Christ at work? What stops me? it is likely that your answer is the same as mine: the ‘F factor’. The F factor was powerfully brought to my attention at a Diocesan Laity Conference a year ago. Present were 210 lay Christians exploring the theme, ‘Being a Christian@Work’. We split into 14 groups to discuss, ‘What stops you sharing your faith?’ Every group came back with the same one word answer – fear – the F factor. It’s fear of:

- 1 getting it wrong
- 2 not having the answers
- 3 having to address the question of suffering
- 4 failure
- 5 humiliation
- 6 what others might think

So what do we do with the F factor in our lives?

- 1 Do we decide that fear justifies us not doing anything? ‘Let’s just leave it to the confident ones. I’m the wrong personality type...’

- 2 Do we, as Susan Jeffers' book title says, Feel the Fear and Do It Anyway?
- 3 Do we rush in and get it all wrong, demonstrating to ourselves and others that our fears were justified?

Or is there another way?

I wouldn't be writing this article if I didn't think there was a better way. My strategies summarised by four 'Ps: Purpose, Preparation, Prayer and Presence.

Purpose

Why bother? Why put ourselves through the anguish of witnessing? Why not just leave it to someone else? Good questions if we consider this world only.

If I fought wild beasts in Ephesus for merely human reasons, what have I gained? If the dead are not raised, "Let us eat and drink, for tomorrow we die." 1 Corinthians 15:32.

Evangelism only makes sense in the context of eternity. Let me ask you:

- 1 What do you believe about heaven and hell?
- 2 How do these beliefs affect you day to day?
- 3 Do you care about the lost?

I am struck by the fact that Jesus spoke a lot about hell – and usually to his followers. He didn't use it as a threat to non-believers, but as a motivation to godliness and witness for believers.

I tell you, my friends, do not be afraid of those who kill the body and after that can do no more. But I will show you whom you should fear: Fear him who, after the killing of the body, has power to throw you into hell. I tell you, fear him. Luke 12:4-5.

A new take on the F factor? I think so. The thought that I might be responsible if one of my friends died without knowing Christ was very convicting to me in my early 20s. God planted a fear in me that is greater than my fear of witnessing – the fear that those I know and love will go to hell. It's a fear that pushes me beyond my comfort zone, and motivates me to speak.

Take Iris. Iris was the training co-ordinator for a large IT company where I conducted a series of courses. I grew to value her greatly over the months we worked together. Her favourite swear words were 'Jesus Christ', but I was reticent in saying anything for fear of upsetting our friendship.

Then, Iris announced her retirement. In God's wonderful provision, I was conducting training for her company on her final day. I came to the course with a twofold retirement gift: a box of Thornton's chocolates and a book by Michael Green called *Jesus*, which starts with the words, 'For many people Jesus is just a swear word.' (Subtlety was never my strong point!) I explained to Iris that the trainer in me wanted her to know more about a name she often used. A week or so later, I received this:

Hello Beverley,

Just to let you know that the chocolates are nearing the end of the box and the book is interesting. To make me feel less guilty when I want a chocolate, I read the book, so I'm doing well on both counts! Iris.

What is the purpose of witnessing? The same purpose for which Jesus came and died:

For the Son of Man came to seek and to save what was lost. Luke 19:10.

Preparation

Jesus was a trainer – he taught his disciples, he modelled good practice, he set them practical exercises and he debriefed them afterwards. And he didn't expect them to get everything right!

If you or I wanted to learn to drive, we would employ a driving instructor. If we wanted to learn how to sail, we would go on a course, read books, or be coached by someone who knows how – we wouldn't just launch a boat into the sea, set sail and hope for the best. Why is it then, that when the only agenda Jesus left us with is to make disciples, we don't learn how to do it?

J John, one of the foremost UK evangelists, surveyed 1000 evangelical churches and found that only 4% have held any training in witnessing and evangelism in the last five years. No wonder we are afraid – we don't know how to do it! There are some great courses out there, like CPAS's *Lost for Words* and J John's *Calling Out*, that are designed with the fearful in mind. Courses like these help us share our stories and learn how to invite people to events where they will hear more. Let's ask our church leaders to run one!

We can also equip ourselves through self study using books like Michael Green's *Evangelism for Amateurs*.

As Christians and as Church, we need to take training seriously.

Prayer

The minute we start to witness, we enter a spiritual battle, and it is a battle we need to take seriously. We have an enemy, the devil, who does not want to see people saved. And he will attack. Sometimes the opposition is human, but whatever the source, Nehemiah 4 is a great case study on the kind of opposition we may encounter. Firstly, there's ridicule and insults, Nehemiah 4:1-3; then, disillusionment and tiredness, Nehemiah 4:10; thirdly, plotting and covert attacks Nehemiah 4:11; and finally, fear Nehemiah 4:12.

How to respond? Look at the model of the Israelites:

In response to ridicule and insults, they prayed, Nehemiah 4:4-5,9. To fend off disillusionment and tiredness, they kept watch, Nehemiah 4:9. To face plots and covert attacks, they armed themselves, Nehemiah 4:13,16,18,21. The weapons of faith, the gospel, salvation and truth are powerful indeed, Ephesians 6:10-20. In response to fear, they exercised faith: 'our God will fight for us!' Nehemiah 4:20.

This is not a call for more prayer meetings, valuable though they are, but a call to more personal intercession for the lost, and to prayerfully support each other. I know that as people have prayed for me, I have been given opportunities to witness that have surprised me. And, similarly, as I have prayed, God has also opened doors.

I was conducting a series of courses for a large communications company. To convey management commitment to the course content, a senior manager attended each course. One of them, Jan – a very laid-back Dutchman – was particularly supportive and attended six of the four-day courses. I wanted to speak to Jan about Christ but was afraid – I didn't know how to start. And so I prayed. A little while later, Jan arrived at one of the courses with a gift for me – a mug on which were the words, 'The European interoperability Lab'. He explained that this was the last course he would be attending as he was transferring to the El Lab; hence the gift.

Spontaneously I exclaimed, 'I don't have a gift for you' and then without thinking, I picked up the 'Why Jesus' booklet he had seen me use as part of my introduction to each course. I signed it with love and gave it to him. He sat there and read it. God answered my prayers.

My prayer is not that you take them out of the world but that you protect them from the evil one. John 17:15.

Presence

*Jesus said, 'All authority in heaven and on earth has been given to me. There fore go and make disciples of all nations, baptising them in the name of the Father and of the Son and of the Holy Spirit, and teaching them to obey everything I have commanded you. **And surely I am with you always, To the very end of the age**'.* Matthew 28:18-19.

We are not alone – Jesus, through his Holy Spirit is with us.

Using the concordance at the back of my Bible, I studied the word 'afraid' and was struck by the overwhelming number of times God addresses our fears with the promise of his presence and his equipping. For example, in Genesis 26:24, he says to Jacob: *Do not be afraid, for I am with you.* In Exodus, he encourages Moses: *I will help you speak and will teach you what to say, Exodus 4:12.* In Deuteronomy, he encourages the nation: *Do not be terrified; do not be afraid of them. The Lord your God, who is going before you, will fight for you.*

In Psalm 56, David expresses his trust in God's faithfulness: *When I am afraid, I will trust in you.* So does Isaiah: *I will trust and not be afraid. The Lord, the Lord is my strength and my song; He has become my salvation.* Isaiah 12:2. And Jeremiah: *Do not be afraid of them, for I am with you and will rescue you.* Jeremiah 1:8.

Similarly, Jesus encourages the despairing Jairus: *Don't be afraid, just believe.* Mark 5:36, and his disciples on the eve of his death: *Peace I leave with you, my peace I give you. Do not let your hearts be troubled and do not be afraid.* John 14:27.

So too the writer to the Hebrews re-affirms God's Old Testament promises: *'Never will I leave you; never will I forsake you.'* So we say with confidence *'The Lord is my helper; I will not be afraid. What can man do to me?'* Hebrews 13:6.

We need the strength to face our fears as we follow Christ's commission to make disciples. We can find the strength we need through:

- 1 understanding the **purpose** of witnessing – saving people from hell;
- 2 being **prepared** and trained;
- 3 being **prayerful** as we engage in a spiritual battle; and
- 4 being confident of God's **presence** with us.

For each of us, my prayer is that our F factor should not be **fear**, but **faith** – faith in the one true and living God who commissions us, equips us, protects us and goes with us into his world. Amen.

Beverley Shepherd

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An Engineer Looks at the Gospel – or What I Believe and Why

John Baden Fuller

My designs work!

As an Engineer, I design things and they usually work. The criterion for my trust in the design equations is whether they work. Most engineers cannot undertake the advanced maths which derived the design equations originally or write the advanced computer programs which now do the designs. We are happy to use design procedures or equations which have been derived by others. Provided the designs work, we use the design procedures with confidence.

We use design formulae

Although, as an academic and a researcher, I was nearer to originating the design procedures than most engineers, I have always applied principles and formulae which someone else has derived. As far as I am able, I try to understand the derivations so that I do not make the mistake of applying the principles in conditions in which they do not work. However, my ultimate test for the justification of the principles is whether they work. As long as they work, I continue to use them and my customers and I are happy! My attitude to Christianity is similar. It is an experimental science! I find it completely logical. If I believe, God reveals Himself to me. It works!

and Mathematics

I like the tidiness and precision of mathematics and I have specialised in the theory of electromagnetism. I am not a mathematician and I could not tell you why the mathematics works, but it does. I have found the manipulation of vector differential operators within the study of electromagnetic fields particularly satisfying. If you calculate the behaviour of electromagnetic waves, e.g. radio waves, at any frequency of interest to engineers, you find that theory and experiment agree. The theory works and so we have the confidence to apply the theory to practical problems. We make devices and the devices work according to the theory. Excellent!

Christianity is an experimental science

Now, what has this got to do with the gospel? For me, Christianity is an experimental science. I read the Bible and listen to what Christians say. I do not need to know the why's and the wherefore's of the gospel. I only need to know that, if I apply gospel principles, it works! But I also find Christianity logical. I hear about Jesus being God, about my sinfulness, my separation from God and my inability to help myself. I also hear about Jesus' death on the cross and taking the punishment for my sins. And the fact that as a consequence, God has forgiven my sins and cleansed me from all the contamination of sin and unrighteousness. I am now clean and worthy to come to God and be with God. It is not my cleanliness that counts, but I am wrapped in the cleanliness and worthiness of Jesus.

Christianity is Logical

I find Christianity satisfying because I find it logical. For example, in the account of the Transfiguration, a glorified Jesus is joined by Moses and Elijah (Lk. 9:29-31). To me it seems completely logical that Moses and Elijah never died in the normal way (Deut. 34:5-6 and 2 Ki. 2:11). Their bodies were spirited away by God so as to be available to appear supporting Jesus at his transfiguration. I am sure that God is not limited in what he can do, and Moses and Elijah could have

appeared even if they had have died and been buried in the normal way. However, God allows logical happenings such as this one to occur so as to satisfy our inbuilt needs. As people with logical minds, we find we live in a world built on logical principles so we can relate to a God who reveals himself to us in a logical way.

An illustration

Our relationship with God is illustrated by the story of a rather naughty small dog. One day when he was out for a walk with his master, he went wandering off on his own into a muddy thicket and fell into a trench partially filled with water. He got the shock of his life because the sides of the trench were so steep that, however hard he tried, he could not get out. The more he struggled, the more he splashed about, the muddier he got. It was only when his master found him, picked him up by the scruff of the neck, cleaned him down and placed him back on firm ground that he was saved from his predicament. We are like that. While we are apart from God, the harder we try by our own efforts to get to God, the more we get into difficulties and drift away from God. We cannot cleanse ourselves from our own unrighteousness. We have to let God do it for us.

My response

All I have to do is to accept the fact that Jesus is capable of bringing me to God. I need to be sorry for my sins, be prepared to give them up, and to accept Jesus as my God and Lord of my life. I have to accept what somebody else tells me about myself, about Jesus and about what God has done. But it works! I believe the story. I am influenced by the lives and conduct of the Christians who told me about Jesus, so I put my trust in God and in Jesus and find it works. I believe. God does what the Bible said He would. He comes into my life in a completely new way. I hear. I believe. It works! Christianity suddenly has meaning for me. I find my outlook on life changes and I want to read the Bible to find out more about God and this Jesus who has made such a difference in my life. I want to join with other Christians worshipping my new-found God and learning more about Jesus. For me Christianity is completely logical. It satisfies my engineering mind set. It all makes sense. What is more, it is an experimental religion. It Works! And it is immensely satisfying.

John Baden Fuller is an Electronic Engineer, now retired. He is Chairman of CEA and has been a Reader (Local Preacher) in the C of E for over 45 years. First printed in the CEA Newsletter, Spring 2000, p. 21.

Some Engineering Reminiscences

Percy Hammond looks back at the beginning of his career in Engineering

I am a bookish and ham-fisted sort of person and occasionally that gives me a bad conscience. After all, engineers should be practical, hands-on people. What makes it worse is that I have a cousin who is a 'real' engineer, good with his hands as well as his head. Yet here I am, a retired engineer, attempting to write an article for an engineering journal. Moreover, bad conscience or not, I am pleased to be an engineer and I have enjoyed my career in engineering.

Cambridge University

It all started with a wartime engineering course at Cambridge. I had won a state bursary in engineering, which also secured a place at one of the colleges. Because of the war we were given a tough concentrated course lasting two years instead of the usual three. The best thing about that course was the teaching in small groups, typically of two or three students. This teaching was called

'supervision' and we could choose our own friends and, within reason, our own supervisor. Generally we had one hour's supervision per week.

The supervisions were largely student-led. We asked the questions and the supervisor responded. Often the questions related to problems that had arisen in lectures or in trying to solve the large number of question papers that accompanied the lectures. The supervisor would take a blank sheet of paper and help us to assemble the data and choose the relevant variables. Then, almost miraculously, the solution appeared and there was no need for the supervisor to continue his explanation. At other times we asked for a detailed calculation to trace a missing factor of 2, or a δ that had gone astray. The success of this type of instruction depended on the amount of work we had done. If we had no questions we were told politely, but coldly, to go away and come back better prepared next time.

It was no doubt an expensive form of teaching in terms of the supervisors' time and effort. He could send the students away if they were unprepared, but in return, if he failed to be on top of the subject matter, he had to do his homework for next week! However, when the students and the supervisor co-operated, this was an extremely effective way of learning. Certainly its results remained with me throughout my career. I learned to concentrate my mind on those aspects of a problem which were dominant and so to simplify a messy situation. It also taught me that all my solutions were approximations and that there could be no 'theories of everything'. It helped me to steer a middle course between an overweening confidence that there were easy solutions and abject despair that life was just too complicated. I believe that such a middle course is the mark of being an engineer.

Industrial Apprenticeship

At the end of the two years we had interviews to decide what part we were to play in the war effort. I was interviewed by C P Snow of 'The Two Cultures' fame and he decided to send me to an industrial research department. When I presented myself there, nobody had heard of C P Snow, nor did they have a high opinion of Cambridge graduates. They had no intention of putting me into the research department. Instead I was told to go into the town and buy a boiler suit (with my precious clothes coupons) and to start next day as an apprentice in the switch gear machine shop. There I was allocated a capstan lathe and found myself the only man in a shop full of women. I was told to cut up some pieces of steel and was then left to my own devices.

I soon turned rebellious and when my rebellion reached a dangerous level I was transferred to an equally uncongenial, but different, department. There followed 18 months of frustration and boredom. Most of the time my fellow apprentices and I hid out of sight and played cards. We also picked up some scraps of information about industrial practice and, more importantly, about the lives and attitudes of British workers. Our contribution to the war effort was negligible. It was a curious kind of negative education and from an engineering point of view almost useless.

Christian Activities

However, it had some useful side-effects. Several of my fellow apprentices had been members of Christian student societies and with ample time and youthful energy we threw ourselves into Christian work both inside the factory gates and outside in local churches. We organised a Christian union in the firm, which held meetings out of office hours. It is generally unwise to speak of success and failure in Christian activities, but these meetings were often poorly attended and seemed to have little result. On the other hand they formed us into an effective team for organising other more fruitful activities.

One of these was a united children's mission involving various churches in the town. Several of us who were C of E also had the privilege of being part of a growing congregation in a mission church on a housing estate. The Vicar gave us freedom to arrange the services and other activities under cover of being Lay-readers in training.

Design Department

Having watched the clock for a year and a half I next found myself in the design department for rotating machines as an assistant to the man in charge of generators for hydroelectric schemes. That was a marked change for the better. My boss was a friendly Scotsman, who was also a superb engineer.

Integrity

There were two important lessons he taught me about engineering practice. The first was the need for integrity. The thrust bearing for one of his large vertical-shaft generators ran hot on test. It had an ingenious design of which my chief was justifiably proud, but the oil temperature exceeded the specified value. There was heavy pressure from the management to ignore the temperature reading and to deliver the generator to the customer, but he would not budge until he had modified the oil circulation arrangement and reduced the running temperature. This took several months and the tension could be felt, but in the end the firm had a superbly designed thrust bearing. Typically, my chief was severely reprimanded and he was told that in future thrust bearings would be designed by another factory. We kept our ears open. The new design failed catastrophically on test and the entire rotor had to be rebuilt to our previous design. My chief had a favourite saying: 'the engineer is the buck-acceptor'!

Intuition

The second lesson I learned in that design office is that human knowledge is never wholly explicit. One of my duties was the calculation of the magnetic flux distribution in these generators. When I had done my calculations my chief would look at the figures quizzically and suggest that they needed to be modified. Invariably the test results came closer to his intuition than to my calculations. Of course his intuition relied on experience, but that was not the whole story. I think there is something called 'physical insight' which enables an engineer to organise a whole set of implicit bits of knowledge into a coherent whole. This is a creative skill that cannot be reduced to mathematical formulae or to computation. I have used a lot of mathematics and computation in my work and have at times even been accused of being a mathematician, but I treasure the remark of my Cambridge supervisor who said, 'Your mathematics is poor, but you have some physical insight.'

Optimism

Another aspect of engineering that is worth mentioning is that it is essentially an optimistic pursuit. Optimism prevails in spite of frequent references to Murphy's Law that anything that can go wrong will go wrong. Reference to that law is only a mask for the optimism engendered by working in a team towards a useful end. In my lengthy years as an academic I have frequently noticed that the engineering faculty was an essentially happy group of people, whereas the arts and the natural and social sciences were afflicted by misery. Only the medical staff were prepared to share the engineers' enjoyment. The joint dinners of the engineering and medical professors were a wonderful contrast to the bickering and infighting of academic life. Probably the reason for engineers and medics to enjoy each other's company was, that in spite of much doom and gloom, they knew that they were doing something useful.

Return to Cambridge

After three years in the design department I became restless. The calculations I did were repetitive and would today be done by computer programs. Moreover there never seemed to be time or incentive to seek a basic understanding of the electromagnetic processes involved. There was no creative work, no colleagues interested in fundamentals and worst of all no books or professional journals. In retrospect I think that the firm had no effective management. Like the greater part of

British heavy industry the firm was living on its past and was heading for extinction. My Christian involvement suggested that I had some teaching ability. I applied for a post at the local technical college and was turned down. Then I applied for an assistant lectureship at Cambridge and was successful. So I became an academic- and I have loved it!

Christianity is compatible with Engineering

Do any of the features of engineering that I have mentioned have a specifically Christian aspect? I think it would be unwise to claim too much. Nevertheless it is significant that the values of good engineering practice fit well into the values of the Bible. Moreover the complexity of engineering discourages intellectual pride. While it would be wrong to suggest that an engineering career leads to Christian faith, I believe that engineering places no obstacles in the way of Christian commitment. I find that a great cause for thankfulness.

After a period as a lecturer at Cambridge University, Professor Hammond moved to be head of the Electrical Engineering Department at Southampton University until his retirement. He is a Reader (local preacher) in the Church of England.

Something of Myself

Nick Stroud *answers some questions*

Why are you an engineer? I studied maths and physics for A levels and wanted to do something practical with the subjects. I was certain that I did not want to follow an academic career. I think that I must have discussed the option of doing engineering with friends and may have had some suggestions from the Careers advice staff. If I remember correctly, at the end of the 70s, the prospects for electronic engineering were bright. However, even in the pre-University fees era I am sure the fact that there were sponsorships available for engineering students may have had an influence on my decision making.

How has being a Christian affected your work? I find this a challenging question as in some ways an honest answer might be, little. I would struggle to define any way that the outputs for which I have been responsible have any discernible Christian perspective. However I believe that the approach I adopt to achieving these outputs does reflect a respect for individuals and an interest in their viewpoint which flows from an understanding of the love that Christ has for them. On one occasion, as I was facing options for future jobs, I sought and obtained a strong sense of God's guidance for one of the routes I was considering. It was a difficult decision to follow at the time, but one which, as I look back, was right for me.

Would you recommend engineering as a career (& why)?

I would thoroughly recommend engineering as a career. Not only have I had a rewarding and varied series of jobs as a result of my engineering training, but there are also many opportunities for engineers to make a practical mark on our society. The computer on which I write this has been designed by engineers: the car I drive, the phone I use, the DVD I watch, the planes I fly in – all produced by engineers. **Engineering is a wonderful and varied profession.**

Nick Stroud is a member of the Defence Logistics Organisation and is responsible for commercial policy, governance and improving performance management and the process used for procurement. This is a job which does not directly call upon an engineering background, but does require more general project management experience.

God's guidance

John Baden Fuller *gives a short history of the committee*

God leads in many different ways. The CEA committee appears to exist because God leads by coincidences. CEA was founded as a professional group of UCCF in 1981 by David Coton who acted as its secretary. When he had to give up I was asked, out of the blue as far as I was concerned, by UCCF to become Chairman of CEA.

It seemed right to form a committee to run the association. The idea was aired in an editorial in the Journal and Simon Wigglesworth, Lewis Lack and Nick Stroud all wrote offering to help. They, together with Michael Duckenfield who had contributed some articles in the Journal, were invited to form a committee which met in 1988. I was confirmed as Chairman and Nick was appointed Treasurer. We have now both held these posts for 16 years! Lewis Lack became editor of the Journal.

The committee continues to meet twice a year and reports regularly in the Journal. Membership has fluctuated between four and five. At the March 1989 meeting, the principle was accepted that membership of the committee should rotate as new members offered to come on to the committee, but we have never had sufficient offers to serve on the committee for this principle to work. The committee usually feels that an additional member would enable it to be more effective.

In Spring 1992, Simon Wigglesworth resigned from the committee having had to miss two meetings. In the Autumn, Richard Riggs joined the committee. With Richard replacing Simon, although that was not our planned idea, the committee remained at five. *We had hoped that an additional member would enable the committee to expand its activities.* In 1993, a letter was received from Jeremy Rawlings asking us whether we could organise a conference for the Association. The chairman's reply was simple – 'We would love to. Come and join the committee and help us organise one.' So in October 1993, Jeremy joined the committee and we had our one and only conference in September 1994!

In October 1994, both Lewis Lack and Michael Duckenfield resigned from the committee. Lewis had increased responsibility in his job and increasing visits abroad. Michael resigned because of ill health. Jeremy agreed to take over the job of Journal editor in 1994. The committee was now reduced to four members. In 1998, Paul Rand joined the committee, bringing some much needed young blood into our meetings, and bringing our number up to five again. He also agreed to take over as Journal editor. In Spring 2000, Jeremy Rawlings resigned from the committee and we were back to four. He had pressures of other responsibilities and felt that he had contributed all he could to the committee.

David Kay had contributed to the Newsletter a number of times, and joined the committee in 2001. However, in the Spring 2002, Richard Riggs felt it necessary to resign from the committee bringing it down to four. At the Christians at Work conference in 2003, we met Christopher Rasiah who showed interest in joining the committee.

Unfortunately, at the same time, Paul Rand resigned from the committee due to increased responsibilities at work and family commitments. As he said in the editorial of the last issue of the Journal, 'It is encouraging to see how, as one committee member decides it's time to resign, God always seems to provide somebody new.' Praise the Lord! But we are still only a committee of four, and as Chairman, I am combining those duties with that of Secretary and Journal Editor. Two of us have been committee members for 16 years. Is it now time for some new blood and new ideas? What do you think? What can you do about it?

Imagine by Mark Greene – Book Review

John Baden Fuller

Imagine is a booklet written by *Mark Greene* of LICC, which was originally published as part of the *Idea* magazine of the *Evangelical Alliance*. It is now available on the internet at www.eauk.org/imagine.

Imagine puts forward a possibility of what might happen if we really believe in God's power to transform people's lives and are gripped with joy and gratitude by the difference Christ's love had made to our lives. We have, Greene argues, the people to show and share the Gospel with our nation, but we have failed to envision, train support and resource them for a life of mission in our country today.

How does God want me to be good news to the people I spend my days with? Imagine what will happen when we discover our resources in Christ and learn to be channels of lavish blessing to our fellow citizens, wherever we meet them. At work, it is necessary to maintain Christian integrity and sanity in a changing and increasingly pressurised environment of stress, long hours and job insecurity. In our personal spiritual life, it is in understanding and maintaining a fruitful relationship with God.

The book has 10 sections: **1.** Imagine is about a possibility. **2.** Can you make a difference? **3.** The UK in a state: opportunity knocks. **4.** The Church in a state. It is failing to meet the needs of its members, never mind the fringe. **5.** The road to irrelevance (i) the culture block, (ii) the great divide. **6.** The great resource, us. **7.** Let my people go. What can each one of us do? **8.** Learning to live, living to learn. A disciple is an apprentice and a practioner. **9.** Your country needs you. 'Lord, how can I make a difference for you today?' **10.** Your turn to speak. The document ends with an invitation for us to respond.

This is an important document that is freely available on the Internet and I would encourage every member to download a copy and study it. The full text of *Imagine* is available online at www.eauk.org/imagine.

CED Comes of Age in Uganda

Dick Waller

CED

CED means Christian Engineers in Development – as the name suggests, we use engineering skills in the name of Christ for the benefit of the poor in the developing world. Our members are mostly engineers either engaged in or enthused by development, but we also receive support from non-engineer individuals and from groups such as churches.

In Uganda

In this year, 2004, we shall have completed 18 years' unbroken service in Uganda, so you might say we have "come of age" there. Starting at Musaka, we have tackled needs across the country from Kabale in the far south-west to Kapelabyong in the north-east. Since 2002 we have been engaged in the first two projects for the north, both at Gulu. Our efforts have ranged from small rural water and irrigation schemes to restoration of the urban water supply at Ngora. We do other things as well, but

water and sanitation predominate. “Coming of age” is an opportunity both to look back on experience gained and lessons learned, sometimes painfully, and to look forward to new ways of working and new forms of partnership.

Maturing

Starting with project-specific inputs, sometimes just “trouble-shooting” assignments, we have moved forward to longer involvements in partnership with both local and international NGOs, increasingly shouldering for them the task of writing project proposals to be used as vehicles for fundraising. The first large project was the Karamoja-Teso programme of 38 dug wells, 2 restored dams and some spring tapplings. These were part of efforts by our partner, ChIPS*, to encourage peace between the two peoples.

Local talent

At one time we employed British engineering graduates to undertake fieldwork and supervise construction, to the extent that during the 1990s we often had one and sometimes two graduates in Uganda with an office in Kampala. Our policy is to prefer local employees so that they can gain experience and we can save donors’ money. With Ugandan technical staff becoming more available and the projects further flung, we have moved on to the current situation in which we have a Ugandan engineer supervising work on several projects in the south and west while our local partner has provided its own engineer to do the same in Gulu under our management.

We also try to use technology that can be maintained locally, preferably incorporating components that are manufactured locally as well. This has led us to restore embankment dams using ox-drawn scoops made by the local blacksmith, but has not prevented adoption of more sophisticated plant where justified, e.g., for the task of pumping water for a complete town over several kilometers where there was no alternative, more convenient source. Lessons learned include two experiences of embezzlement by Ugandans, one of them ordained. Have we been naïve or unlucky? In both cases the loss has largely been made good, but has wasted time and left us feeling saddened.

Funding

Outside Uganda, we have managed to keep pace with rapid change in the policies and procedures of funding agencies, sometimes even more bewildering than income tax. We have also had to embrace new sources of funding. When the National Lottery arrived we debated for a time, but then reasoned that it was legitimate to use even gamblers’ money if they were prepared to give it to us: the Lord was providing and several thousand people saw the benefit. More recently, we have been struggling, like many others, to understand and tap the enormous and rather sluggish development fund operated by the European Union.

This necessary interest in fundraising and in the background policies and legislation has led us to join BOND (British NGOs in Development), an association of over 275 organisations, which is a mixture of “trade” association and advocacy forum, encouraging the sharing of information and experiences. BOND coordinates NGO responses to, and interaction with, DfID and the EU. Last year CED played an active role in exploring ways of improving the relationship between DfID and small NGOs. We are now helping to explore the possibility of setting up a liaison forum among British NGOs with interests in Africa. This more active participation at the “frontiers” of the world of NGOs helps to make our Christian standpoint better known and should ensure that we and others are better informed.

The future

Returning to Uganda, “coming of age” has given us the confidence to build on our longstanding relationship with the Province’s Planning, Development and Rehabilitation Commission to spread

over 5 Dioceses at once the very successful catchment tank system we have been using. This provides ferro-cement tanks to collect rainwater from roofs in places too remote from good sources to be served in other ways. We are also preparing to assist our local partner in Gulu to embark on a large Resource Centre whose main purpose will be to redress the marked decline in education and social responsibility during the long years of civil war. The principal beneficiaries will be children escaping or released from the clutches of the Lord's Resistance Army and/or orphaned as a result of the conflict. The project has drawn us into human issues which we have had to understand in order to undertake planning. Engineering is always ultimately for people and it is through relating to people that CED has advanced, with the Lord's encouragement, to its position today.

Dick Waller is a Director of CED. For further information about CED, contact Isobel Waspe, tel 01233 327448.

* ChIPS is Christian International Peace Service founded by Roy Calvacoressi.

Uganda Development Services

In the Summer 2002 issue of our Journal *Dr. John Maitland* wrote about the IT work being done by *Uganda Development Services (UDS)* to bring IT facilities to a remote area of Uganda. Now we have received encouraging news of the difference UDS is bringing to people's lives. In their latest Newsletter, their Chairman, *Mark Sherard*, writes:

Fairy stories do come true – Jack & the Beanstalk

I visited the home of Francis Kayima, up a dusty bumpy road 15 miles north of the UDS Centre at Kamuli, and 80 miles north of Kampala. Completely rural and utterly simple. He has demonstrated what he and his 'Agents' teach the farmers. His enthusiasm is infectious – enthusiasm about the difference the information supplied by UDS is making. His maize is a new variety UDS had introduced: higher yield, quicker harvest, drought-, pest-, and wind-resistant (and no it's not GM!). We also saw rice grown on dry lands, good post harvest handling techniques and composting, real advances for farmers, made possible by UDS.

We heard the experience of a man who sold his cow to buy the seed to grow the new variety of maize – when harvest came he was able to buy three cows to replace the one he had sold. 'Jack and the Beanstalk', yes; but not a fairy tale – one of the many examples I saw of how UDS has been able to help farmer's families boost their income.

Helping rural women

Small loans are great to support rural women in their struggle to keep families alive and get them educated. Repayments are without default and they save at the same time. The turnover of the little businesses increased and income was added to the family. On this small beginning, we want to build a programme that will help women and girls overcome their inequality with men and the injustices that arise from this.

The UDS centre in Kamuli

Now the UDS Development Centre at Kamuli is really impressive! Every space is used in the rented double shop front with living quarters behind. Goretti busy with customers in the shop and inputting documents for them on her computer. Young people reading and studying in intense silence. Self-

motivated. Not bored. Young Geoffrey diligently looks after the library and a room with loads of agricultural information that Francis Kayima and others use. Then there was Howard, leaning over one student after another explaining a point on the computer screen or keyboard.

Internet connectivity

Satellite communications are too expensive to be used by an impoverished society like that in Kamuli. However, UDS has been given an in- memoriam gift of £5000 which they are intending to use to bring a broadband internet connection to their office in Kamuli. This will pay for a 50 mile radiocommunications link together with three months running costs. This will be the beginning of what they hope will be an IT opening in the city. Kamuli serves a population of 600,000 of whom 50% are under 15 years of age. The internet connection could be used in schools by downloading the necessary information and taking it to the school on a laptop computer.

Vision for the future

Plans for innovative initiatives abound, like a Centre to process information. Then to repackage information, much needed by the rural poor, so it can be communicated, understood and applied easily using every means available, from voice to print, to video, drama and computer.

Thanks are due to UDS for permission to reprint the information given in this article. For further information, please phone John Maitland on 08707 744 256 or visit the website www.ugandadev.com.

CEA Membership Survey

Christopher Rasiah

Geographical Spread. Starting with the Winter 2002/03 issue of the *CEA Journal*, reference was made to a membership survey conducted by David Kay. One of the comments by members who were contacted was that they would like opportunities to meet other members. When we analysed the membership by geographical spread, we found that you are all rather evenly distributed. The number of members in each English county is shown on the accompanying map. I hope that you will find it interesting and useful. It does show that there are only a few clusters of members. However, if you do live in an area showing a number of members, and would like to contact your CEA neighbours, Gail in the Christians at Work office can arrange introductions. The Data Protection Act prevents us circulating members details to other members without their permission. However we can forward a letter inviting them to contact you, if you send a suitable letter to the office. We would appreciate it if you could include an appropriate number of stamped envelopes. Alternatively, we can give publicity to your name and address in the next issue of this *Journal*. In that case, please write to the Editor. Name and address are inside the front cover.

Meetings of Members. As can be seen from the map of geographical spread, there are no clusters of members that would justify a centrally organised local meeting for members. That is for local initiative. However, we have attempted to make use of the *Christians at Work* annual conference as a time when we could also hold a meeting for our members. When we joined *Christians at Work*, we welcomed an opportunity to participate in their Annual Conference and were encouraged to arrange some of our own activities. However, apart from the CEA committee, we have not been aware of CEA members attending those meetings, so do come and meet a few other CEA members.

Committee Report – February 2004

Nick Stroud

Your committee met on 28th February 2004 at **John Baden Fuller's** home in Leicester. This has proved a welcoming venue for the last few meetings. Roughly equidistant for all the other members of the committee and with the advantage of a good lunch provided for us.

We acknowledged the significant input that **Paul Rand** had made to our Association both through his membership of the committee and in his role as Journal editor. We thank him for his contributions over the years and his family for allowing him to undertake this work.

Chris Rasiah, who had observed the committee at work at the October 2003 meeting, agreed to be a member and was duly welcomed.

A significant amount of time at the meeting was spent on the subject of the Philosophy and Aims of CEA. **John** had been challenged about what CEA was doing to encourage members to be evangelistic. We reviewed the aims in the light of this challenge and although we did not feel that a change to the words was necessary we certainly felt that the challenge had merit. John has covered this in more detail in his article.

We also reviewed the ideas that some of you had put forward to **David Kay** during the membership survey he had conducted. David reports on this part of the committee meeting elsewhere in the Journal.

We discussed preparations for CEA involvement in the Christians @ Work conference in June. We provide a seminar speaker and a leader for an engineers group during the small group session at the start of the conference.