Talking To Vula

The Story of the Secret Underground Communications Network of Operation Vula

by Tim Jenkin

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The Importance of Good Communications

In the mid-'eighties there was a great deal of soul-searching taking place in the ANC. While there had been some spectacular armed attacks against the apartheid regime, the underground struggle had not really taken off. There was very little to show for the years of struggle, only hundreds of activists in the enemy's jails and the loss of tons of precious weaponry.

Discussion raged among comrades at all levels about why the armed struggle had achieved so little and why there was no real underground to speak of. True, mass resistance had reached unprecedented levels and much of this was attributed to the courageous work of ANC activists who had been infiltrated back into the country. Nonetheless, there was no real ANC presence inside the country and the ANC could not legitimately claim to be the leading force behind the mass struggles taking place.

Underground work up to that point had largely been hit-and-run operations. Cadres were trained outside the country, briefed, equipped and sent into South Africa on missions. They carried out their tasks and, if not captured by the enemy, returned to the sanctuary of one of the frontline states. A number of groups had tried to engage in more prolonged activity but the attrition rate was extremely high.

These were the armed propaganda years and the imperative was to concentrate on actions to keep alive the notion that the ANC was present and active in South Africa. There could be no stopping, as a hiatus would be interpreted as defeat. Little attention was thus given to the setting up of internal structures that would have made the war self-sustaining.

Those sent into the country were the ANC's soldiers. The generals remained at base. The soldiers had their orders, so could not become autonomous agents who could plan their own actions. If they had been able to, that would have made them the generals. In any case, their logistical supplies came from outside the country and, because it was so difficult to get anything in, the scope of their operations was extremely limited.

This was the crux of the problem. A rudderless army with nowhere to hide, with no contact with its leaders and with extremely fragile lines of supply. This meant that actions were limited to solitary operations. There was no way this could develop into a sustained onslaught against the enemy. Only the number of actions could increase but, because there were no generals on the spot, these could never be coordinated to achieve any strategic objective.

As the number of armed incidents increased, so too did the number of casualties. It is difficult to understand how it took the leadership so long to begin thinking about changing tactics but for ten years after the Soweto uprising this was the pattern of things. It was only after the Kabwe Conference in 1985 that many came to acknowledge that there was something seriously wrong and that there had to be a radical change in tactics.

Everyone agreed that the underground was ineffectual because there were no proper underground structures and there were no structures because there were no leadership figures based in the country. 'Armed propaganda' could not turn into 'people's war' because the groundwork had not been laid for rooting the 'liberation army' among the people.

Key leadership figures had not been sent into the country because it had always been deemed too dangerous to do so. There was a kind of vicious circle in operation: leaders could not go in because there were no underground structures in place to guarantee their safety; the underground structures could not develop because there were no key leaders in the country.

Sending leaders into the country, however, was only part of the solution. Even if leaders had been sent in, the resources for carrying out the armed struggle would still have had to come from outside the country. And how would the leaders have co-ordinated their actions and issued their orders to the soldiers in the field?

The problem was not so much a political one about who was where and doing what, but a practical one about an almost complete lack of decent communications.

It is astonishing that so few were able to see this, as communications is the most important weapon in any conflict situation. Without good communications the battle is lost even if your side has an overwhelming advantage in physical and human terms. This has been confirmed in countless wars and struggles throughout history. Good communications means effective conduct of a struggle; bad communications means ineffective conduct or defeat.

It could even be said that the entire nature of a struggle is determined by the effectiveness of the adversaries' communications. The side that lacks sophistication in this field will not be able to issue commands to its soldiers and they, in turn, will not be able to coordinate their activities as they will not know what their compatriots are doing and where they should concentrate their efforts. In other words, the fighters will not receive their orders and be left to face their enemy without leadership.

Poor communications had determined the shape of our struggle. It was because our fighters and cadres could not communicate with their leaders and between themselves that the underground never developed and People's War never became a reality.

It is hard to explain how our leadership failed to grasp the importance of good communications, especially as they were trying to lead a struggle by remote control. Perhaps it was that they were too used to seeing all problems and solutions to problems in political terms that they were unable to see that the problem was to a large extent a technical one. Perhaps they had a fear of technical things, a suspicion of things they did not fully understand.

When this is put to comrades who were involved in underground work they all confirm that the lack of proper communications was the main hindrance to their work. They felt cut off and their activities could never develop into anything meaningful. The absence of proper communications meant there was a lack of political leadership. This reduced most activities to anarchic actions as they were seldom part of a planned strategy. Many comrades lost faith in the organisation as the lack of contact made them feel that they had been forgotten. Many became so disillusioned that they engaged in actions which often did the cause more harm than good. Others simply gave up because their discipline would not allow them to do their own thing.

My own experience as an underground operative in the mid-'seventies confirms this. Our little two-man propaganda cell could never develop beyond the mandate given to us simply because we could not communicate properly with our handlers. The use of cumbersome book codes and complicated secret inks made us view communications as a tedious activity that was best avoided. Contact was so infrequent and irregular that most of the time we felt that

we were operating in a vacuum. There were instructions but no leadership, acknowledgements but no encouragement.

There is no doubt that our poor communications contributed to our arrest, as was the case for countless others. We were aware of surveillance but could do nothing, for our communications were too slow to be used as a tool for seeking guidance.

Seeking new ways

After escaping from prison in 1979 I ended up in London and one of my tasks as an ANC activist with underground experience was to train others in the skills and techniques of underground work. As their trainer I became the person responsible for handling their communications. Over the years I trained dozens of people but one thing I soon noticed was that there were always fewer messages than people. It was always the same pattern: comrades would go back home feeling enthusiastic and begin by sending a series of messages. They soon came to realise that it was a futile activity as it took so much effort to say so very little and the responses, as few and far between as they were, contained little encouragement and advice. There were only instructions which usually lacked any connection with the reality they were experiencing.

A lot of effort went into training these people but it soon became apparent that there was extremely little return on the investment, simply because the communications were so poor.

I was determined to do something about this so set out to revamp the communications methods being used from London. The first to go were the awful book codes we had always used. In their place I substituted proper numerical ciphers. Next to go were the complicated invisible inks. In their place I substituted ultra-violet, invisible-ink, marker pens and a whole variety of concealment methods including microfilms, secret compartments and audio cassettes.

All of this made little difference though, as it was the manual encryption that still took the time. A short message of a few hundred characters would take all evening to encipher. I tried various schemes to streamline the process but made little headway because it remained a boring, manual task. There was no help from our leaders for they were not concerned with the methods of secret communications. They were only interested in the clear messages that came out of and went into the communications. How the messages were transferred was none of their business. That was the concern of the comms officers like me.

It was at this time, the early 'eighties, that personal computers were becoming affordable. In them I saw our salvation. A computer, I read, was eminently suitable for boring, repetitive tasks - and that's what we had on our hands. The purchase of our first computer led to a revolution in our communications that ultimately made possible operations such as Vula.

Developing an Electronic Communications System for Operation Vula

In the early eighties, at the time I was considering the purchase of a computer to assist me with my secret communications work, I met Ronnie Press. He was an old stalwart of the struggle who had left South Africa in the first wave of exiles in the early `sixties.

Ronnie, with a few others based in the UK, had founded the ANC 'Technical Committee' - a body whose task it was to provide technical assistance for the armed struggle. He had access to computers at the polytechnic where he taught and had also come to the realisation that they would be a powerful aid in communications. The two of us knew very little about programming but set about getting one of his work computers to emulate the manual operations of one of our book codes. While it did what we wanted it did not take us very far as there was no one to communicate with.

In 1984, when prices were low enough, I lashed out and bought my first personal computer. It was quite a pathetic little machine by today's standards but it gave me the opportunity to learn how to write elementary computer programs. Inspired by this Ronnie bought one too, so at last we could communicate with each other. As these were pretty basic machines there was not much we could do with them apart from swapping cassette tapes that held our secret messages. Nevertheless this was a major advance, for what used to take hours to encrypt now took a matter of minutes.

One day Ronnie arrived with a pair of modems. I had never heard of such a thing but apparently they would allow our computers to talk to each over the telephone. This was the breakthrough, I thought, for these devices would allow us to communicate with our operatives in South Africa. No longer would communications be a chore - it would now be fun.

Getting the modems to work properly was a nightmare as neither of us knew anything about the vagaries of digital communications. It made us realise that using computers to communicate with South Africa would not be as easy as we'd first imagined. How would the communicating parties know when the other side had a message to send? Also, would not the mere act of communicating, especially with encrypted messages, endanger the user in South Africa? How too could we get the equipment to our activists at home? In any case, only those with access to electricity and phone sockets - usually white comrades - would be able to use computers for communicating.

These uncertainties dampened our enthusiasm but we managed to set up a link between London and Bristol, where Ronnie lived, using an electronic mail service. We showed this to our chiefs but failed to impress because everything went wrong on that occasion. They gave our project their blessing, but what we wanted was not moral but financial support.

On one of his regular trips to Zambia, Ronnie took his computer and modem to see if we could communicate between Lusaka and London. The test failed miserably as the crackle and echo on the line drowned the modems' pathetic signals. The Lusaka chiefs were impressed with the speed and ease with which the computer enciphered and deciphered messages but were quick to realise that it would have no immediate practical application. No one would be able to use it as a computer would be out of place in a township and those who would be in a position to use them would not last long if they communicated with Zambia.

We continued to improve our communications system but without a concrete application it did not progress very far. Our initial enthusiasm waned as there appeared to be no way of bridging the gap between ourselves and users inside the country.

Our next project was one that led to the breakthrough we had been waiting for. We had received a request, as members of the Technical Committee, to find a way for activists to contact each other safely in an urban environment. Ronnie had seen a paging device that could be used between users of walkie-talkies. A numeric keypad was attached to the front of each radio set and when a particular number was pressed a light would flash on the remote set that corresponded to the number. The recipient of the paging signal could then respond to the caller using a pre-determined frequency so that the other users would not know about it.

Since the numbers on the keypad actually generated the same tones as those of a touch-tone telephone it occurred to us that instead of merely having a flashing light at the recipient's end you could have a number appear corresponding to the number pressed on the keypad. If you could have one number appear you could have all numbers appear and in this way send a coded message. If the enemy was monitoring the airwaves all they would hear was a series of tones that would mean nothing.

Taking this a step further we realised that if you could send the tones by radio then they could also be sent by telephone, especially as the tones were intended for use on telephone systems. Ronnie put together a little microphone device that - when held on the earpiece of the receiving telephone - could display whatever number was pressed at the sending end.

Using touch-tone telephones or separate tone pads as used for telephone banking services two people could send each other coded messages over the telephone. This could be done from public telephones, thus ensuring the safety of the users.

To avoid having to key in the numbers while in a telephone booth the tones could be recorded on a tape recorder at home and then played into the telephone. Similarly, at the receiving end, the tones could be recorded on a tape recorder and then decoded later. Messages could even be sent to an answering machine and picked up from an answering machine if left as the outgoing message.

We gave a few of these devices, disguised as electronic calculators, to activists to take back to South Africa. They were not immensely successful as the coding still had to be done by hand and that remained the chief factor discouraging people from communicating.

The next step was an attempt to marry the tone communications system with computer encryption. Ronnie got one of the boffins at the polytechnic to construct a device that produced the telephone tones at very high speed. This was attached to a computer that did the encryption. The computer, through the device, output the encrypted message as a series of tones and these could be saved on a cassette tape recorder that could be taken to a public telephone. This seemed to solve the problem of underground communications as everything could be done from public telephones and the encryption was done by computer.

While working on this system in early 1987 I was called down to Lusaka to train a group of activists in the use of some specialised radio equipment. While there I was approached by Mac Maharaj, now Minister of Transport. He had heard that we had been experimenting with computers and various methods of secret communications. I demonstrated the use of the tone pad system using radios and we agreed to set up a trial system using the telephone model between London and Lusaka.

The system worked, but as our computerised version was not ready the coding was still done by hand and this limited the amount of information that could be transferred.

Later in the year Mac visited me in London and explained that the ANC was planning to send leadership figures into the country but that this could not take place until a suitable communications system was in place.

This surprised and pleased me for Mac was the first ANC leader I had come across who had the foresight to realise that nothing serious could happen in the underground until people could communicate properly. He was happy with our tone pad system but wanted to use computers to do the encryption as hand coding would be too limiting.

I promised to investigate but explained the fundamental problem of attempting to communicate secretly with computers: it was too dangerous to use a computer from a listed telephone and simply not possible to take one into a telephone booth. Our computerised tone system could be the answer but we were having major problems getting it to work reliably.

Ronnie and I had thought about using modems in the same way as our tone device but the problem was that modems worked in pairs. The modem signal could not be recorded on tape because one modem had to be talking directly to another before anything would happen.

By chance a friend gave me an acoustic coupler that he was about to throw out. This is a special sort of modem that clips onto a telephone handpiece instead of being plugged into a wall socket. I was using this one day when I happened to lose the connection with the remote computer. I noticed that, despite this loss of contact, the message I was sending continued to be sent, unlike what would have happened had I been using a normal modem. Could it be true that these devices did not require another modem at the other end to work?

To test this hypothesis I wrote a little program to send some computer output to the modem. Sure enough the sounds came out of the modem's speaker. These I recorded and played back into the microphone end of the modem while running a communications program on the computer. Eureka! The characters appeared on the screen. I had done with a modem what we were attempting to do with our tone machine.

This seemed to be the real breakthrough. I adapted our encryption program to work with the acoustic modem and recorded the output on a tape recorder. This I took to a public telephone booth and played back to my answering machine. Then I played the answering machine 'message' back into the modem and the computer deciphered it successfully. As the plaintext message appeared on the screen I realised that we had finally discovered an absolutely safe method of communicating with the underground using computers.

The next problem was to adapt our encryption program to work reliably with this system. When two computers are communicating in the normal way through modems they 'talk' to each other and if an error is detected the receiving computer can ask the sending one to resend the message or the part of the message containing the error. But with our system you had a computer talking to a tape recorder - a completely dumb device. We knew well that if an encrypted message got corrupted while being sent, then everything following the point of corruption would be garbage. And over a distance of ten thousand kilometres there were sure to be errors.

After a lot of serious programming I managed to develop a system that could ride over errors. You could not recover the text where the corruption occurred but all was not lost if errors occurred. The message continued to decipher to the end.

After fine tuning this system I demonstrated it to Mac. He was so pleased that he adopted it immediately. We tested it from Lusaka and our conclusion was that if it worked from there it would work from anywhere!

After a few more meetings with Mac I got a clearer picture of the operation being planned. This was no Mickey Mouse affair. The amount of preparation and security involved indicated that for once the comrades were deadly serious. Mac was insistent that nothing could happen until the communications had been sorted out.

Around this time - early 1987 - I was introduced to Conny Braam, the head of the Dutch Anti-Apartheid Movement. She appeared also to have been informed of the planned operation and was assisting with background preparations. We were brought together to discuss communication methods. She had been investigating some commercial encryption and communications devices. One of these, a pocket-sized 'encryption computer', was particularly impressive. To send a message you simply held the device on the mouthpiece of a phone and played the code to another similar device on another phone. We tested this with an answering machine and it seemed to work fine.

To be absolutely certain if these devices were going to work from South Africa we needed to send someone in to test them. We also wanted to know everything about the South African phone system: whether there were card phones, the dimensions of phone handpieces, what the local phone plugs looked like, whether there were suitable public phones, and so forth.

Conny found a suitable playboy type that no one would suspect of being a 'spy'. I briefed him on what we needed to know and told him where to find it. A short while later he was sent in on his mission.

Our 'spy' did a magnificent job. He photographed public telephones, located nearly every suitable phone in Johannesburg and Durban and brought back a number of 'samples' that he pulled out of sockets and ripped out of phone booths!

Most exciting of all, he found out that radio telephones had just been introduced in South Africa. These were huge monsters, very unlike the dainty cell phones in use today. The batteries used to power these phones were so heavy that they could only be used in a motor vehicle. However, after negotiating with a dealer he found that it would be possible to mount one of the units in a suitcase. If we could get one of these our underground operators would be able to communicate safely using computers from just about anywhere.

Tests with the communications equipment showed that Conny's dedicated coding/transmission machine was hopeless. It simply didn't have the power of our unconventional acoustic modem/tape device, which worked a charm.

After assessing the results of our 'spy's' mission Mac concluded that the radio telephone would be so useful that it was essential to get one. But how to do it? There was no one in the country who could get the phone and it was going to cost around R16,000.

Fortunately the ubiquitous Conny had managed to find a sympathetic KLM air hostess who was working on the Amsterdam-Johannesburg route. She was willing to do just about anything for us, including smuggling into and out of the country whatever we wanted.

I went over to Amsterdam to find out if she was willing to go on a special 'shopping trip' for us to get the phone. She was honoured to be asked and pleased that she would be doing things more exciting than pure courier work.

I had managed to convince the telephone supplier in Johannesburg that I was a British businessman who needed the telephone for my 'business' and that a 'friend' would be passing through Johannesburg to make the purchase for me. My problem, I explained to him, was how to pay the bills as my work required frequent, quick trips to South Africa. The dealer was so keen to make the sale that he worked out a scheme whereby the phone could be registered in his name but could physically be in my possession. All we had to do was 'top up' his bank account every month and everyone would be happy!

On her first trip the air hostess was unable to get the phone because her plane was late. The second time the salesman didn't show up but finally she got it. For her it was a major victory as she felt she had let us down on the previous occasions.

Back in London we made the final preparations for the start of Operation Vula, which was due to begin in July or August 1988 when the first operatives were to be smuggled in. Among those in the first group was Mac Maharaj.

I had two new phone lines installed in my flat: one for incoming calls from South Africa and Lusaka, the other for the South African operatives to pick up messages directed to them. On both I connected specially doctored answering machines that could record and play messages for up to five minutes without cutting off. The system would work more or less the same from Lusaka as from South Africa, except that there was no need to use public phones in Lusaka.

It was hard to believe that this rickety system would work under real conditions. Only when it was tried by the comrades after they got into the country would we know.

Vula Starts

In the early months of 1988 Mac Maharaj and 'Ghebuza' (Siphiwe Nyanda) were readying themselves to be infiltrated into the country as the first group of Vula operatives. To most people, however, Mac was a very sick man who was suffering from a serious kidney ailment. He hobbled around on a stick and failed to turn up for the string of important meetings that leadership figures were expected to attend. It was said that he was about to go to a sanatorium in the Soviet Union to wait for a kidney transplant. Ghebuza was also withdrawing

from his regular activities because he was about to go on a long 'officer training course' in the Soviet Union. No one other than the President, Oliver Tambo, and a few others involved in the preparations for Vula knew the truth. So tight had the security around the preparations been that no one doubted what they were told about Mac and Ghebuza.

The two had been well prepared with a range of professional disguises and false documents. An extremely contorted route had been worked out for the pair to reach South Africa from Zambia. Indeed they would depart for the Soviet Union where their appearances and identities would be radically altered. They would even leave a 'trail' so that people could confirm that they had been seen in that country. From Moscow they would fly to a few European cities to fuzz the trail, from where they would move on to east Africa and ultimately to Swaziland where they would be assisted to hop the border into South Africa. Everything along the way was well prepared and well rehearsed.

Back in London the communications equipment stood idle waiting for Vula to start. The first ring of the telephone attached to the 'incoming' answering machine would signal the start of the operation we had all worked and waited for so long.

Although we had thoroughly tested our equipment it was hard to believe that it was really going to work under the actual conditions for which it had been designed. Yes, messages had been sent successfully from South Africa but only from the 'ideal' conditions of a comfortable hotel room. A public telephone was different. Would not the sounds of the street, the dropping of the coins and other extraneous variables not distort the delicate computer messages and render the system worthless? Real life was different to the laboratory, we well knew.

As Mac and company would not have the computers on arrival in South Africa - they were due to be smuggled in later - we had set up a voice-mail system linked to a tone pager at the London end for initial communications. This allowed the comrades in South Africa to deposit voice messages in an electronic 'voice bank', and when they did so we in London would get bleeped. We could listen to the message from any phone - though we only used public phones for security - by punching in a special code on the dial buttons. We could also leave messages but there was no way the comrades would know there was one waiting for them except by dialling in periodically to check.

I started carrying the pager from the beginning of August 1988, for I knew that from around that time the comrades would be in the country. A date in the second week of August had been set for Mac to meet Antoinette, our KLM courier, who was going to hand over the radio telephone she had earlier acquired.

Suddenly, one day in the first week of August, the pager began to bleep. Could this be the start of Vula, or just a wrong number? Sure enough, the familiar voice of Mac played out of the voice 'mailbox'. He wanted to clarify some final details about the planned meeting with Antoinette, but more than that it was a message to tell us that they were safely in the country. I quickly informed Lusaka of the good news.

The meeting with Antoinette went successfully and Mac got his telephone. After that there were a string of 'voice bank' messages but very little real information could be transferred with the limited set of codewords that had been established beforehand. It was clear that Mac was getting frustrated by the non-arrival of the communications equipment. As Antoinette was due in Johannesburg again in two weeks we decided to buy another laptop and send it in with her, complete with all the other bits and pieces needed to communicate.

This was handed over to Mac on her next visit to Johannesburg. I expected Mac to begin communicating immediately but the receiving equipment in the London 'communications centre' remained silent for another week. I grew increasingly sceptical that it would ever be used: 'It's too complicated. Give them a few more weeks and they'll throw the whole lot out and start speaking in whispers over phones again. I know these guys!'

Then suddenly on the last day of August, as I was sitting hacking away at another program on my computer, the 'receive' phone started ringing. The answering machine played its usual outgoing message and then the yellow 'receive' light came on, followed by the familiar high-pitched tone of a computer message. It was music to my ears. I tried to picture Mac cowering inside the acoustic hood of some grubby public telephone in Durban. I could see him nervously holding the little speaker against the mouthpiece of the phone while looking worriedly over his shoulder. His heart must have been racing like mine. It was hard to believe that the sound I was hearing so clearly was coming from a small tape recorder ten thousand kilometres away.

I quickly played back the message into my computer and proceeded to decipher it. As the plaintext message appeared on the screen I leapt for joy. There it was - Vula's first message - as clear as daylight. Now we're in business!

As I was reading the printout the phone rang again. Another message. After that there followed another three. Five messages in the first go and all of them deciphered okay. 'Boy, these guys sure mean business' I thought.

There were a few corruptions in the messages but the error-handler had coped well. In all cases it was possible to guess the lost words from the context. I joined all Mac's messages into one and sent the file down to Lusaka. 'That's the quickest any serious message has ever reached our leaders' I realised as I was sending it.

The received messages were typically Mac: not a sign of emotion, just straight down to business. It was clear that he had already been extremely busy. There were details of how he was spending the money that he had taken in and which had been brought by Antoinette, how he had found an untraceable way of registering vehicles (I hope, as the Minister of Transport, he has now forgotten how to do this!), details of the setting up of a propaganda project, a list of publications he wanted from London, proposals for setting up bookstores in Durban and Johannesburg, progress in setting up a reception committee for Nelson Mandela in case he was released from prison, details of meetings with key MDM leaders, and so forth.

The next day I prepared a response for Mac and placed it on the 'out' answering machine. That same day he picked it up and the next day came a reply. This time the message contained some emotion. Mac was excited at the prospects of being able to communicate with the leadership in such a short time. However, there had been some problems. He had not been able to pick up my message using a public telephone as the sound of the coin-drops had corrupted it too badly. He'd had to use a private phone to retrieve the message - and that wasn't good for security.

If the comrades had been in Johannesburg this would not have been a problem as they would have used the radio telephone, but as it did not operate in Durban where they were based it was quite serious. As I was pondering how to solve this problem another message arrived from Mac. He had discovered in the city a number of public telephones that used phone cards. Apparently Telkom had implemented a pilot project to test the viability of introducing card-operated public telephones. From then on we never looked back.

The Link Begins to Pay

Within a couple of weeks of the establishment of the computerised communication link with South Africa the value of good communications began to show - much sooner than anyone had expected. For the first time in the history of the underground struggle there was a group of operatives inside South Africa in dynamic contact with the leadership outside. What this meant was that there could be true dialogue between the soldiers and the generals. No longer did you have a situation where blind commands were issued which the soldiers obediently had to carry out. The leaders were now properly informed of the situation inside the country and any suggestions they made could be corrected by those 'in the field'. Mac and Ghebuza could air their ideas with the leadership and the latter in turn could ask for more information

before any decisions were taken. In short, there could be true political leadership instead of one-sided military orders.

The link not only served as a channel for dialogue and information transfer but also for a number of other purposes such as making requests, issuing criticism and arranging meetings.

Most requests were for money, documents, additional equipment for communications and the like. When the first request for weapons appeared on my screen my eyes stood out on stalks. I had seen the comrades packing some light weaponry when I was in Lusaka in June but now they were asking for an arsenal: AKM automatic rifles, TNT, detonating cord, hand grenades, RPG rocket launchers and rifle silencers, amongst other things. Any ideas that I'd had about Vula being purely a project to get political leadership into the country were quickly dispelled. This was serious stuff.

When a planned rendezvous in Botswana was botched by the comrades from Lusaka severe criticism flowed back from South Africa. Never again were the same mistakes made.

Over the years we had heard so often that the main factor holding back our revolution was the logistical problems associated with the long lines of supply. Now suddenly these problems melted away. The comrades could during the week demand a supply of weapons or other equipment and have it 'delivered' by the weekend. Details of meetings could be arranged more or less instantaneously, complete with legends and passwords. If anything went wrong at the last moment both sides could be informed timeously and take the appropriate action.

The ability to communicate in (almost) real time began to have a profound affect on the nature of the project itself, and the personnel at both ends - and in the middle - had to adapt to a new style of working.

At first the comrades at home were patient in waiting for responses from a leadership who were not accustomed to responding rapidly to events. This quickly turned to impatience as they became aware that speed of response was an organisational problem and not one that could be blamed on inefficient modes of communication.

On the part of the leadership in Lusaka the inertia of the old ways was soon swept aside by the enthusiasm of those at home. The number of questions and requests coming down the line made them pull their fingers out. The messages also for the first time gave them a window onto what was going on, making them feel part of something live. This added spirit to their former languid manner of responding to events.

For our part in London, we at first felt like passive spectators watching the messages shuttle back and forth. Soon we realised that we could play the role of facilitators by prodding Lusaka for responses and reminding them of what they had to do. Printouts and disk files of the traffic provided a convenient record of what was demanded and what needed to happen. We could often short-circuit things by responding on behalf of the other side when we got a better feel of what was happening at both ends.

After the initial contact had been established between South Africa and Lusaka and a pattern of working had been established, many requests started to get directed at London. The idea that London would simply act as a 'hub' linking the 'spokes' from South Africa and Lusaka soon evaporated. A multitude of requests and instructions flooded in from both sides. Deposit money in this bank account, collect £50,000 from the ANC office and forward it to that destination, buy more computers, prepare and send us these documents...

The System Expands

From the start we were never completely certain how secure our encryption program was. As it employed an 'in-house' algorithm (formula) it had not been subjected to the rigours of testing by experts.

According to the experts there is only one theoretically unbreakable cipher - the one-time pad. This system is one where the communicating parties each have a pad consisting of pages of random numbers. The numbers on a particular page are added to the numeric values given to the letters of a plaintext message. After the message has been enciphered the pages of the pad that were used are ripped out and destroyed. Provided the numbers are truly random and are never used more than once there is no theoretical way to crack such a cipher. Every possible answer is correct because there is no relation between one (encrypted) character and the next.

Our system was based on the one-time pad, though instead of having paper pads the random numbers were on a disk. Each time the computer enciphered a message it read the correct number of characters from the disk, used them to perform the encryption and then wiped them from the disk so that they could never be recovered. While this provided the maximum security it had the disadvantage that the numbers got used up fairly rapidly and new 'key' disks had to be sent into the country. Fortunately Antoinette was able to take these in but the traffic in disks was considerable and each one represented another risk. It also had the disadvantage that it was a one-way system. You could not decipher your own messages; only the other side could do that. This meant that there was no way of safely storing old, but needed, information.

The only way this system could be cracked was if the enemy somehow got hold of the 'key' disks and made copies of them. But after a while it was clear that nothing of the sort was happening. If the enemy was reading the messages then they would surely have acted on the information they contained. There was too much at stake to ignore their content in the interests of not letting on that they were privy to what was going on.

The comrades called for a system that they could use to secure their own information, one that used regular keys so that the encryption could be reversed. After much serious programming we came up with a system that used a long key typed in from a book. This key was used by the program to generate its own random numbers so that it didn't have to take them from a disk. To ensure that the same 'key' line was never used again we sent them special invisible-ink pens to mark the lines used and ultra-violet torches to see which lines had been marked.

The amount of traffic increased by the day and in order to streamline operations Mac acquired a message pager. Using a special set of code words we in London could now let him know when there were messages waiting to be collected. It also allowed us to inform him if his message(s) had deciphered successfully or if he had to resend it/them. He could do the same with us using the voice mail system linked to our pager. As all this phoning had to be done from public telephones I decided that it would be a lot easier if I bought a cellphone. This I did using a false identity I had set up for myself. The cellphone turned out to be a most valuable addition to our communications setup. In combination with the 'voice bank' and pagers we could now talk to each other in almost real time without our voices ever coming together. New code words could easily be added through a computer message. Often a question posed in a computer message could instantaneously be answered with this voice mail/pager system.

The answering machines clicked and whirred all day long with messages to and from Lusaka and South Africa. Mac's messages would often come through in the middle of the night as well. Not only did the frequency of messages increase but also their length. As the phone cards being used by the comrades in South Africa lasted a mere minute and a half, messages often had to be split up into chunks. Sometimes a single message would consist of up to ten parts.

The demands on the system increased rapidly over the months forcing us to extend it to Conny Braam in Holland, to some comrades in Yorkshire who were assisting with

documentation and to Canada where a Vula operative was involved in recruiting activists to be sent in to assist Vula. There was no need to use the complicated acoustic modem/tape recorder system with these 'nodes' as the security demands were not of the same nature. Ordinary e-mail links were set up using commercial providers. The same encryption program was used, however, to maintain the same level of security as with South Africa and Zambia.

Inside South Africa Mac spent much of his time travelling between Durban and Johannesburg to attend meetings and set up structures. When he was 'out-of-town' Ghebuza would take over the communications. Often Mac's trips to Johannesburg were timed to coincide with Antoinette's flights to South Africa. And each time she flew to South Africa I had to go to Holland twice: once to take things for her to take to South Africa and once to pick up whatever she brought back. On the out trips she would usually take great wads of £50 notes, new 'key' disks, upgrades of the encryption programs, disks containing (encrypted) documents and longer analytical messages from Lusaka, micro-photographs or heavily concealed copies of ANC and SACP publications, new tape recorders and so on. On the return trips should would usually bring back disks of encrypted messages giving fuller details of the ongoing projects and the political situation in general.

Whenever I was out of the country Ronnie Press would take over control. He was by this stage also living in London and had in his flat an identical set of equipment. All that had to be done to switch the traffic to him was to inform the comrades at both ends to use his numbers instead of mine. Between our two flats we set up a number of links and backup systems using commercial e-mail, our own private bulletin board system and even a radio link that could transfer the messages using radio modems. We could also use the answering machine/acoustic modem system as a last resort.

At the Lusaka end one of Conny's soldiers, Lucia, was put in charge of communications. From that point on the efficiency of that station increased markedly. A matchbox house in one of Lusaka's squalid townships was rigged out to serve as the comms centre, a place no one would have suspected of serving such a purpose.

By early 1989 Vula was ready for big things, and it was clear that what had been achieved in such a short time could not have been done without the ability of all concerned to talk to each other so easily and so securely.

Vula enters 1989

As Vula entered 1989 the secret communications network connecting South Africa to Lusaka via London was buzzing with activity. Considering the unconventional nature of the link it is surprising that it worked as well as it did. The comrades in South Africa and Lusaka took it for granted, but none of us realised how dependent the entire operation had become upon it.

In the middle of January we met our first hitch. Mac Marahaj's 'key' disk got corrupted and so he could no longer encrypt - which meant he could no longer communicate by computer. Fortunately there was a separate backup system, a second set of program and 'key' disks kept for such an eventuality. However, it made us realise how fragile the system was. If the second set of disks somehow also got corrupted - or damaged or lost or stolen - the whole operation would be in jeopardy. The communication link had become so crucial to the functioning of Operation Vula that losing it was like cutting the umbilical cord to a foetus. Something had to be done, and quickly.

Fortunately I had been working on an encryption system that operated in a more conventional way with keywords that could be entered by hand. It was obvious that this capability had to be built into the communications encryption program in case a 'key' disk got corrupted again.

Some months earlier the comrades had asked us to develop an encryption system that would allow them to encipher and decipher their own files for safekeeping. The special encryption program used for the communications could not be used for this purpose because it was a

one-way system: you couldn't decipher your own messages because you never knew the key. The encryption program grabbed the key data it needed from the 'key' disk, did its work and then destroyed the data.

The new 'diskless' system allowed the comrades to decipher their own messages and had been sent to them a while earlier, but I had warned them not to use it for communications as we were uncertain of its strength.

So, off to the bookshops and libraries I went to find out about secure encryption algorithms. Nothing impressed me very much and all I discovered was that cryptology was an arcane science for bored mathematicians, not for underground activists. However I learned a few tricks and used these to develop a system to meet our security needs.

In normal conditions a single key is used for a lot of messages. We wanted to avoid this because we knew that if one of the comrades got captured by the enemy and was made to divulge the key, all intercepted messages could then be deciphered. By using a different key each time, security would be greater and it would be much more difficult for the enemy to find out what keys had been used.

This presented another problem. If we were going to use a different key each time how would we get these keys to the other side. The solution was to go back to our old book code system. Send the comrades a book and get them to use a different section of text each time as the key.

The books would be changed frequently and then destroyed so that no record of the keys were kept. The position of the key - page and line - would be encrypted with the message and would re-appear when the other side proceeded to decipher it.

In February Antoinette, our airline courier, took the disks containing the new program in to Mac and shortly afterwards the comrades started to use it. The new program defaulted to the 'key' disk version but could switch to the hand key version in an emergency. This innovation saved the communications several times when 'key' disks got erased by mistake, got forgotten in some other place or got corrupted.

All the way to Mandela's cell

In April Mac sent details of how it might be possible to set up a link with Nelson Mandela, who was at this time being held in a house in the grounds of the Victor Verster Prison near Paarl.

During this period Mandela was meeting various government bigwigs to discuss his possible release and various scenarios for the future. He was also meeting leaders of the Mass Democratic Movement. Such meetings were closely monitored by the enemy, so it was never possible to get to Lusaka the precise details of what was being discussed. Mandela realised the fragility of the situation and was reluctant to engage in any activities that could be interpreted as underhand. Mac, however, was convinced that if Mandela could be shown that a truly safe and absolutely confidential line to Oliver Tambo in Lusaka was available, and was operated by Mac he could be persuaded to use it.

Such a link could be set up by one of Mandela's lawyers, who was allowed to meet him at regular periods to discuss particular issues. Mac had over a period of months debriefed the lawyer intensively in order to determine the exact circumstances under which the meetings took place. Mac had worked in the communications team on Robben Island so he knew how Mandela would respond and what would be required to persuade him to participate in the scheme.

The first step was to receive authority from Lusaka for the lawyer to disclose Mac's presence to Mandela. Once this was granted, the lawyer would demonstrate to Mandela the method of

camouflaging the memos. The method was based on one that we had used extensively during the previous months - books with secret compartments in their covers.

Conny Braam had brought into her team a professional bookbinder who had devised a method of creating re-useable compartments in the covers of books.

These proved to be extremely effective and absolutely undetectable. At first the bookbinder made these books for us in Amsterdam but because the demand for them was so great I had a few lessons from her and took back to London the skills and implements needed to create them on our own.

Mac realised that if the lawyer could take one of these books to Mandela each time, with a note concealed inside the cover, Mandela could read the note and respond by concealing details of his meetings with the government in the same compartment.

At first Mandela was reluctant to participate but when he began to grasp how it would work he changed his mind. The decision must have been difficult for someone cut off from modern technological developments for so long.

Suddenly one day a message from Mandela appeared on my screen. I stared at it for a long time. It was not the content that excited me but the very fact that here, for the first time ever, was an electronic message from the mythical man who had inspired us all so much. A real live message from Mandela here on my computer screen. Vula's ultimate coup!

After that messages from Mandela became a regular feature and in response there were long memos from Oliver Tambo in Lusaka. The two were now talking in confidence for the first time since the early 'sixties. I couldn't help chuckling to myself each time one of these messages went past when I thought how the regime's chiefs must be thinking they were entirely in control of the situation. They wanted to create the impression that they were talking to Mandela alone and that his responses were his personal opinions. Little did they know that they were talking to the ANC collective.

The system under stress

As the months passed it became clear that the communications work was taking up too much time for Mac and Ghebuza (Siphiwe Nyanda). The basic preparatory work of Vula had been completed and now the comrades were busy setting up structures around the country. Often they were away from base for days at a time but the need to move information was increasing all the time. This meant that they had less and less time to go to public telephones to do the sending and receiving.

After a while we started to notice that things were being done slightly differently. Messages arrived at different times and at different frequencies. Then different voices began to come out of the voice mailboxes. It was apparent that the comrades had trained a couple of people to handle the communications. This was later confirmed in a message.

After these new comrades took over, the number of messages increased even further. Huge batches of messages would regularly be dumped on our answering machines and we were often kept up till late at night changing tapes on the 'pick up' machine. It was not long before it became clear that our system was reaching the limits of its capacity.

As an interim measure I modified the London setup such that when there was a great batch of messages to send, they could be sent directly from the computer instead of from the answering machine. When the 'pickup' phone rang, the computer would automatically squirt the messages down the line. By cutting out the answering machine the quality of the signal was improved. A special amplifier in the circuit ensured that the signal was really loud and crisp.

All the while we knew that we would ultimately have to move over to a regular electronic mail service as our existing system had definite limitations. But this brought us back to the original problem: it was too dangerous to communicate from a known telephone line. Our whole quirky system had been designed to get around this inescapable fact. But what if the person who used the phone was someone who would normally communicate by computer and had no known affiliation with any political organisation? Surely this would not attract attention. Even using encryption should not raise eyebrows for businesses used it all the time to protect their information and it was built into ordinary programs such as word processors. In any case, did the enemy have the capacity to determine which of the thousands of messages leaving the country every day was a 'suspicious' one?

The only way to test out this hypothesis was to try it, and that's what we did.

During the preceding months I had been training an 'agent' whom the ANC was going to send back to South Africa in order to penetrate critical computer networks. The 'agent' was a South African who had been living abroad for many years and had worked as a computer programmer for major British electronics companies. He was also 'clean', having never been involved in exile politics.

In order to report on his activities he would need to be able to communicate abroad in much the same way as Vula. But because he would not be 'underground' in the same sense as the Vula operatives we decided to use an open, commercial electronic-mail service rather than our 'in-house' Vula system. This would serve both as an efficient, secret communications channel for his own work and as a test for Vula.

Later in the year the agent was sent in. He had already secured a position that was an excellent launching pad for his 'career'.

Immediately on arrival in South Africa he started communicating. This was a most normal thing for a person in his position to do. His training revealed no surveillance so we quickly realised that this was the way forward for Vula - find someone who would normally use a computer for communicating abroad and get that person to handle the communications. This would remove the constraints of the current system and allow the channel to be opened up for much greater things.

Mac comes out for a rest

After returning from one of her regular trips to Johannesburg, Antoinette reported that Mac had seemed very stressed and looked tired and overworked. This impression had been conveyed through the messages too but it was never possible to tell with Mac. He always appeared to have boundless energy and kept us all on our toes with his demands. His messages often came through in the middle of the night giving the impression that he never even stopped to sleep.

But after a while it became clear that the stress of the situation was beginning to take its toll and the Lusaka leadership suggested that Mac should come out for a rest. On top of this the word was getting around that he had been seen in South Africa and was not in the Soviet Union waiting for a kidney transplant, as everybody had been told. It was essential for the continuation of Vula that this legend be shored up.

Through the messages it was arranged that Mac would come out in early July and make his way back to the Soviet Union. There he would 'emerge' in full public view and announce that he was indeed still waiting for his kidney transplant, but that interim treatment had been effective enough to allow him to visit his family for a short while.

In London we booked a ticket for Mac to fly to India via Mauritius. Using yet another disguise and false identity Mac was able to make his way to New Delhi and then on to Moscow. All the time we were in contact with him through voice mail.

After a couple of weeks in Moscow Mac returned to London where we were able to discuss the question of communications. As we had suspected our quaint tape recorder system was beginning to creak and groan under the load. A new system had to be found that would allow much greater amounts of information to flow. More than that, the scope of Vula had changed and with it the scope of the network had to change. While the external links were still crucial, there was now a need to connect all the outposts of Vula that had been established throughout the country.

We explained to Mac how the system used by our 'secret agent' worked. If Vula could move over to a similar system, Mac suggested, it would not only allow more information to flow but it would also serve as a coordinating tool. It would link everyone internally and eliminate the need to travel around the country all the time. Also, because it was an error-free system, external machineries could produce fully-formatted propaganda material and send it in. Mac was convinced that they could find suitable people to do the comms. So many people and structures had been linked to Vula that it was now necessary to look at secret communications in an entirely different way.

Vula Moves into Top Gear

Mac's respite abroad gave him the opportunity to recover from the stress of the previous year's work. The washed-out look with which he had arrived was explained as the effects of waiting for a kidney transplant in a Soviet sanatorium. The Mac who went back to South Africa a few weeks later looked much healthier, though he had to pretend that appearances were deceptive. A new kidney was expected any time now and that was why he had to scurry back to the Soviet Union.

During his time in London we discussed with Mac the future communication needs of Vula. It was clear that the existing system using acoustic modems and tape recorders had more or less reached its limits. Its life had been extended by employing other comrades to handle the communications and by modifications at the London end, but it nonetheless had severe drawbacks that could not be overcome by any improvements to the system. Chief among these were the inability to send formatted documents and the length limitations imposed by using public telephones.

The current system could only send plain text documents because it was not error-free, and files had to be broken up into small parcels for transmission. The adoption of a system that could transmit error-free with no time and, hence, length limitations would greatly improve its usefulness. This would permit fully-formatted documents - such as laid out publications - to be prepared outside and sent into the country for immediate publication. Vula also needed the ability to communicate internally and this was just not possible with the current system.

We discussed the various options and Mac agreed that we should work towards implementing a scheme such as the one being used with our 'secret agent' sent in a few months earlier. This involved using a regular electronic-mail service. Since it was being operated by a person with no history of political activism it drew no attention from the authorities. Although Vula had no one in that position, Mac was going to do his utmost to find someone.

In the meantime the 'old' system would continue and we were to continue investigating all alternatives. The dangers had not lessened even though the political situation was in a state of flux and it was clear that the apartheid regime was going to have to release ANC leaders from prison, including Nelson Mandela. This signalled that they were contemplating a major shift in policy as they could not have Nelson Mandela freely moving around the place preaching the gospel of a banned organisation.

Protecting Vula

Ronnie and I had long been investigating various communications options. Every day new products were coming on the market and we had to be ever watchful of new developments in

the computer and communications fields. We attended countless exhibitions and subscribed to a range of magazines and journals. There was no shortage of funds so we were able to invest considerable amounts in 'research and development'.

As it was difficult to pursue our technical investigations and speak to businessmen in the name of the ANC we decided to set up false identities for ourselves and pose as businessmen. To become businessmen we needed a business, so we set up one. By speaking to some sympathetic businessmen and lawyers we were able to establish a 'front company' through an outfit that provided businesses 'off-the-shelf'. It surprised us to find out that we could literally purchase a brand new company over the counter. All we had to do was give some indication of the nature of our business - 'computer consultants' - and pay some money. For the price they prepared the contracts, the books and provided all the paraphernalia required by a business, right down to letterheads and an embossing stamp. Even the name for our business could be chosen from a list they provided!

At last our two working-class heroes were members of the capitalist class. New suits, ties and tidy haircuts completed the picture. Amazingly, it worked. Where before salesmen shunned two anorak-clad scruffs, they were now sickeningly helpful. At exhibitions we could flash our business cards and make calls on our cellphones. As 'directors' of a company (that changed its nature like a chameleon according to whom it was relating) it became so much easier to get the attention we required.

To go with our new company we opened a bank account and acquired a post office address. The absence of a 'secretary' who could answer our calls worried us but even that could be arranged through a secretarial services company that would answer our calls and advise overzealous salesmen that we were in a 'meeting' or 'out of town' at that moment. A couple more voice mailboxes rounded off the communication requirements of a well-heeled company.

Through one of Conny's people who had been sent into the country some time earlier I had set up a mail address in Johannesburg through a local secretarial service company. This we linked to our new company in London so that mailed answers to information requests made in South Africa could reach us quite anonymously.

In addition to our company we managed to acquire a number of other safe mail addresses all over London. These proved useful for acquiring information about specialised equipment that would have attracted attention from the local bobbies. We had no doubt that the British secret services were also keeping an eye on us and there was no reason for us to believe that they were not working hand in glove with the apartheid authorities, whom their leader, Margaret Thatcher, so dearly loved. Some months earlier a right-wing MP stood up in parliament and claimed that I was working with the IRA to make bombs that were sent into South Africa to blow up innocent civilians. This later turned out to be a cover-up for the fact that the South African regime was supplying weapons to Ulster extremists.

To protect Operation Vula's information we acquired a safe box in the underground vault of a security company just off London's exclusive Bond Street. Here we rubbed shoulders with millionaires who were hiding their gold jewellery and diamonds. In the vault we stored encrypted copies of all Vula's communications as well as copies of the source code of our encryption programs. The disks were wrapped and signed so that if anyone from the company had access to the locker and looked at our stuff we would know about it.

The next step was to make it even harder for potential eavesdroppers to bug our phone lines. Already there were three regular lines coming into my flat and two cellular phone links. The latter operated through a marine antenna on top of the roof to give the very best reception for computer communications. In Holland I acquired a cordless phone unit with a range of 15 kilometres. A sympathetic Briton a few kilometres away had a phone line installed and to this I connected the main unit of the cordless phone. At home the handset was connected to another antenna on the roof. This radio phone provided a secure line that worked perfectly with our computers.

Yet another two antennas beamed radio signals between Ronnie's flat and mine. Soon there were so many antennae sprouting out of the roof that the place got nicknamed 'GCHQ' after the government's communications headquarters which was responsible for monitoring electronic communications in the UK.

Every morning Ronnie and I would make contact by radio to discuss what had to be done that day. A set of code words and regular frequency hopping made it difficult for anyone to follow what was going on. The radio link also provided yet another link for our computer system in case any or all of the phones went down.

New systems

Ronnie and I experimented with various new systems as time went on. Many of these could not have been contemplated at an earlier stage because the technology simply wasn't available. All the time computers were getting smaller and new gadgets were appearing on the market.

Towards the end of 1989 the first pocket computers appeared in the shops. These could be used with regular modems which now too were appearing in miniaturised form. One system we developed used a pocket computer that could dial into a remote computer and send and receive messages error-free in the normal way. Since these computers were so small they could be taken into a phonebooth and be used in much the same way as our current tape recorder system. Instead of an answering machine at the other end there was now a computer operating as a simple bulletin board. A program was developed to do everything: it dialled in, made the connection, sent the message(s), picked up any messages that were waiting and logged off. All the user had to do was press a button to set the thing in motion.

This system would have been adopted but events on the ground changed so rapidly after the unbanning of the ANC in February 1990 that it became unnecessary.

Another system was designed for urban communications. This used miniaturised packet radio TNCs (Terminal Node Controllers - radio modems) with bulletin boards built into them. Two users could exchange messages in absolute secrecy. At an agreed time the 'passive' user would simply have to be within range of the 'active' user. The former would have a walkie talkie radio attached to one of these TNCs. This could all be secreted inside a plastic shopping bag and the user could even be walking around in the street. The active user also had a walkie talkie and TNC unit but required a keyboard (a pocket computer was adequate) to operate the equipment. Connection between the TNCs was made and messages could be exchanged. The passive user then returned home, connected the TNC to his or her computer and transferred the received message(s). We even tested this system from a moving vehicle and it worked perfectly. This too never got adopted because of the developing political situation.

The Final System

It took another six months after Mac returned to South Africa before a new communications system came into operation. This was shortly after the unbanning of the ANC early in 1990. It took so long to move over to a new system because of the problems of finding and training the correct people to operate it. Inertia too played its part in keeping the old system in place.

Eventually one of the Vula operatives and not an 'outsider' was selected as the 'chief communications officer'. This was Janet Love, now an MP, who had in fact been in the country from well before the start of Vula. She had made contact with Mac several months earlier and was by the end of 1989 one of the key operatives in the Johannesburg area. Her disguise was so deep that it was decided that she would be a suitable candidate to run Vula's communications.

Janet managed to leave South Africa in the latter part of 1989 and during this period we trained her in the new system. There was nothing extraordinary about the way we planned to do things. We would be using regular electronic mail through a commercial provider. Connections would be made from known business addresses. No more telephone booths and phone cards. The new system would allow files of any length to be sent, and as it was error-free all kinds of files could be sent.

The special encryption program that we developed to work with this system had four levels of security. The first level used a book for keys, much the same as our earlier programs. The second level used a long fixed length key taken from a disk containing random numbers; the third level used a variable length key proportional to the length of the file; the fourth level a key the same length as the file. Before encryption the plaintext files were compressed with encryption and then re-encrypted. This offered the maximum security and to dispel any doubt really confidential memos could be re-enciphered over and over.

The new system moved Vula's communications into a different league. It allowed operatives in different part of the country to communicate with each other in confidence. It also meant that there were no restrictions on what could be sent in from the outside.

Immediately the demands on London increased many fold but this had been expected and we were prepared for it. There were now three of us working full time at that end. Using desktop publishing programs we were able to prepare fully-formatted publications and send these in. The comrades in South Africa reproduced and distributed these in their thousands.

For years I had been assisting groups in London to post movement literature into South Africa. Everyone knew that most of this ended up in the security police incinerators yet they kept on doing it because no one could think of another way. This continued right to the end and I couldn't help chuckling to myself every time I helped stuff envelopes: "If only these people knew that this very same publication is already in the country and being distributed by the thousand". But the exigencies of Vula did not permit me to utter a word.

Vula now moved into top gear. Even though the ANC had been unbanned the high point had not been reached. Several new operatives secretly entered the country, including Ronnie Kasrils, now Deputy Minister of Defence. He entered with all the skills required to operate Vula's communications channels. Although he was my teacher in the mid-'seventies, I have to admit that he was not my best pupil! Nonetheless he took in with him some valuable new skills.

The link with Lusaka was also refurbished to cope with the increased flow of data. The old answering machine system was thrown out and replaced with a computer that served as a host for Lusaka. Messages from London were deposited on this machine and picked up from Lusaka. Messages from Lusaka were deposited directly on it and then transferred to the electronic mailbox for South Africa.

A trip to Zimbabwe extended the network to Harare. Further trips to Botswana and Swaziland were planned but never took place due to the rapidly unfolding chain of events in South Africa.

Separate electronic mailboxes for each Vula 'region' allowed comrades to communicate with each other in complete secrecy. Dial-in was made through local nodes so even though the mailboxes were located on foreign computers there was no need to dial overseas.

Vast amounts of encrypted data flowed along the wires. Publications, press statements, manuals, discussion documents etc. were sent into the country and passed from region to region. Every item confirmed that Vula's greatest strength was its ability to communicate.

Vula Winds Up

Nineteen ninety was a momentous year for the ANC. It was the year that the illegitimate apartheid regime unbanned the organisation and released its leaders from prison. Although this should have been accepted with jubilation as it was in fact a sign of capitulation by the regime, most of us were extremely sceptical and carried on as if nothing had happened. It was too difficult to trust a regime that had always acted with such duplicity. This was just another trick.

Certainly there was no slowing down of activities related to Operation Vula until much later in the year, well after negotiations between the ANC and the regime had got under way. In fact, the high point of Vula was reached in the middle of the year, only to be brought down by the arrests of a number of key activists in July.

At the time of the announcement of the unbanning on 2 February 1990, a number of people were lined up to enter the country to bolster Vula. Ronnie Kasrils was the most important of these, but a number of others, mainly recruits from Conny Braam's stable, had been prepared and were later sent in to do support work.

After a number of delays Ronnie Kasrils entered South Africa on 23 March. Under heavy disguise and with false documents he made his way through passport control at Johannesburg airport with no problem, and was able to inform us from the airport of his successful passage.

As far as the communications were concerned, Ronnie's entry marked the changeover to a far more sophisticated communications system. He brought in with him the soft and hardware required to allow the comrades to use proper electronic mail via an international service provider. This moved Vula's communications to a higher level and allowed us to put aside our quaint, but effective, acoustic modem/tape recorder communications system.

The amount of information moving along the 'hotline' immediately increased ten-fold. This was measurable by the number and size of the 'monthfiles' - the record of the communications kept by London.

The implementation of the new system appeared to release the pent-up literary strivings of the comrades. Report after report flowed down the line to Lusaka. To the frustration of the comrades very little flowed in the reverse direction. The unbanning of the ANC had thrown all structures in Lusaka, including Vula's, into turmoil. Everyone wondered what happened to all these reports and Lusaka took on a new code name - the 'black hole'.

Despite the apparent void at the Lusaka end reports were carefully scrutinised and distributed among the leadership who were preparing to return to South Africa. There is no doubt that the reports helped brief the leadership about the situation 'on the ground' and gave them a feel for what to expect when they returned to the country.

The flow of arms into South Africa during the first months of the ANC's unbanning also did not decrease, despite the changed political climate. On the contrary, the number of 'contacts' increased as the months passed. There was a great debate on the role of the underground in the 'new South Africa'. If negotiations with the apartheid regime did not work out the ANC needed an 'insurance policy', and this would be provided by the underground. And it had to be a strong underground, not one that had no weapons at hand.

Mac resigns

Nelson Mandela was released from prison on 11 February and by the end of the month was in Lusaka to meet the ANC leadership. The following month he was in Sweden to meet the ailing president of the ANC, Oliver Tambo.

His release stirred up activity on all fronts and for a month or two attention got diverted from Vula. Key comrades became scattered or were spending their time in meetings debating the way forward. Instead of keeping the comrades at home informed, little information on the movement's responses to the unbanning and releases reached them. The only news they got was from the local media and from press statements.

When minutes of meetings did begin to be sent in this only aroused the ire of the comrades, for it appeared that important decisions relating to internal matters were being taken without consulting them. Most of those attending these meetings were ill-informed about internal conditions, yet it appeared as if their decisions were having major influence. Other internal structures that had not been operating underground also appeared to be exerting undue influence.

Despite repeated criticism from Mac and others the views of the Vula comrades were largely ignored. Part of the problem was that no one was supposed to know that they were in the country, making it difficult for those in the know to give much weight to the views emanating from the underground.

This so frustrated Mac that on 24 February he announced his resignation and asked for the structures to arrange his exfiltration. This shocked everyone greatly for his extreme reaction seemed unwarranted. The best way to respond to this, everyone agreed, was to not respond. The tactic worked, for by the time there was a response several weeks later Mac had simmered down considerably. Eventually he was spoken to by Mandela and at the beginning of April he retracted his resignation.

Once again, the value of a dynamic communications channel showed itself. If there had not been the capacity of all to discuss the matter Vula would have been seriously incapacitated. Of course it could also be argued that the ability to communicate freely creates its own problems, but it is the getting out of the problems that is crucial.

Comrades leave in order to return

At the beginning of June it was becoming clear that Mac and Ronnie would have to leave the country in order to return. They were to return as members of the ANC NEC in order to attend NEC meetings now being held in South Africa. For obvious reasons they couldn't just pop up, so elaborate plans had to be made to get them out of the country and back in again. Ronnie, everyone had been told, was in Vietnam recovering from a serious motor accident. Suddenly there was a remarkable recovery and he would soon be released from the hospital and return to South Africa. Mac had also made a miraculous recovery in the Soviet Union. The comrades were now going home and the truth could come out if necessary. In any case, everyone had their attention on the exciting developments at home so never noticed that the personal tales of these two did not match reality.

Bad news

On July 14 some bad news arrived:

VERY URGENT. It appears that Vula may be facing serious and major casualties.

Three days earlier contact with Ghebuza had been lost. Shortly before this Ghebuza had reported that a certain comrade had been missing for a week. A number of other comrades had been arrested, as well as Ghebuza's assistant. This created a 'BIG PROBLEM RE COMMS' as the assistant was in the habit of moving around with Ghebuza's program and 'key' disks as well as his data files. This was against all the rules though we had always suspected that some of the comrades were less than meticulous about observing them.

All these disasters had taken place in Durban and so immediately all comms with that area were stopped. It was possible that all the 'key' disks and books of that area had fallen into police hands, and as they probably had the program disks too they could gain access to the links in use. There were e-mail links between Durban and London and between Durban and Johannesburg. The old acoustic modem/tape recorder system was still operational too, which meant that the numbers of the answering machines in London would be known. There were pager and voice mail links too and these would also probably become known to the police.

Fortunately our communications system was so sophisticated by this stage that it took but one day to repair the damage. It was easy enough to alter the access passwords of the suspect e-mailboxes and switch the most important links to other channels already in existence. The voice mail system too had excess capacity so it was easy enough to bring on line a new set of numbers. New code words were devised and new coding books agreed upon.

To assess the damage and assist with damage control Mac and Ronnie, now legally in South Africa, dashed down to Durban. Their first report was that, while considerable damage had been done, the structures were developed enough to contain the damage and prevent any further arrests and police penetration.

Four 'legals' and six underground comrades had been arrested. It appeared that the police stumbled on Vula quite by chance. Two comrades had been arrested while on a mission unrelated to Vula. These arrests provided the police with information about a meeting that the two were due to attend. Police waited at the venue to arrest whoever turned up, and this led to the arrest of further Vula comrades.

On 16 July police actions spread to Johannesburg when they raided the house of two Vula support personnel. Mac and Ronnie were unsure if they themselves would be detained by the police as they were leadership figures and had received indemnity from the regime. But they could take no chances so made sure that all existing 'safe houses' were cleared out and all communications equipment moved to safe venues. Arms caches and other incriminating materials were also moved. But on 25 July Mac was arrested. This prompted Ronnie to go back underground. Janet had never surfaced but moved even further underground as she was key in maintaining the communications links.

The comrades were able through the various modes of communication used by Vula, including pagers, to contain the damage almost totally. The police made very little headway in that region and within a very short time 'normal' activity was resumed.

The SACP claimed that the arrest of Mac was a clear move by the government to undermine the relaunch of the party inside the country, due four days later. Others in the ANC condemned the action as a provocation aimed at hindering the talks taking place between the ANC and the government.

The regime itself went overboard with the arrests, claiming that they had clear evidence of a sinister 'communist plot' to overthrow the government by violent action if negotiations failed. The evidence coming to light showed that the movement was acting against the spirit of negotiations by still maintaining an underground and smuggling weapons into the country.

The details of Vula that the regime released to the press revealed that indeed a number of important documents had fallen into their hands. It became clearer by the day that the comrades in Durban had violated all the rules of security that we had so assiduously tried to impress upon them. Data files of confidential information were kept 'in clear' on disk and keywords and key books must have been easily obtainable. The minutes of an entire underground conference were quoted by police as evidence of the plot to overthrow the government.

Those of us in London and Lusaka were shocked by the lack of measures taken by the Durban comrades to protect their information. What was the purpose of all the encryption programs and security manuals that had been sent in at such risk? Such measures are of no value whatsoever if the rules are not obeyed. The entire communications system had been designed to withstand this sort of disaster but when the time of reckoning came the police found an open book.

After this there was a tremendous tightening of activities relating to communications. Janet Love, now in charge of communications from the inside, made sure that all stored documents were kept in encrypted form and that the data disks were placed in the care of people who could only be reached through 'cutoffs'. Program disks were kept apart from 'key' disks and only brought together when files had to be enciphered or deciphered. Additional people more remote from the 'frontline' were recruited to do the actual transmissions. All printouts were carefully destroyed after being read.

Comrades in court

On 29 October Mac appeared in court with seven others on charges of 'terrorism'. The indictment was extremely revealing and exposed to the public for the first time the scope of Operation Vula.

The main charge was that 'the accused had between July 1988 and July 1990 performed acts aimed at causing, bringing about, promoting or contributing towards acts or threats of violence'. The accused had 'conspired to create an underground network the task of which would be to recruit, train, lead and arm a "people's" or "revolutionary" army to be used to seize power from the government by means of an armed insurrection'.

They had arranged for the transfer of large sums of money from outside to finance the project's activities. They had assisted with the infiltration of other persons who were to participate in the project. They had rented a number of "safe houses" and set up a communications network by means of which the accused and their co-conspirators could communicate in code. They had also procured equipment for communications by means of invisible writing and modified cars for the clandestine importation of arms.

It went on and on. The accused had smuggled in and secreted weapons and explosives, procured material to prepare propaganda, recruited people for training inside and outside South Africa, provided training in the art of warfare and approached foreign powers. They had assembled and kept intelligence on the location of strategic targets, such as police stations, fuel depots and army unit headquarters, as well as personal particulars of members of the police.

There were lists of foreigners who had been infiltrated to assist the project and details of 15 "safe houses" in Johannesburg and Durban. There were details of vehicles and vast numbers of "revolutionary" documents.

On 8 November the comrades on trial were released on bail totalling nearly R300,000. It was clear that the regime's hopes of using the trial to drive a wedge between the ANC and SACP while negotiating with them had backfired. There was no more mileage to be gained from pursing the trial so the trialists were released.

At the same time the police announced that they were looking for four suspects - Ronnie Kasrils, Janet Love, Charles Ndaba and Christopher Manye - in connection with the illegal importation of arms, ammunition and explosives. The suspects were said to "armed and extremely dangerous" and continuously made use of "all sorts of disguises" to hide their identities. Rewards were offered for information leading to their arrests.

The timing of the announcement by the police - four months after the arrests of the others - raised suspicion that they were using it to cover up the possible deaths in detention of

Charles Ndaba and Mbuso Shabalala. They were the first comrades to be arrested in July and were never heard of again.

In mid-December Mac again 'retired' from the ANC and SACP. No reasons were given but suspicions were raised that he was angry with the way he and the others had been ignored while the ANC leadership continued negotiating with the regime.

On 22 March 1991 the nine trialists and Ronnie Kasrils were indemnified against prosecution in terms of the government's commitments to the Pretoria and Groote Schuur Minutes. This put paid to the trail and nothing more was heard about it after that.

Ronnie and Janet remained in hiding because the police never said that they had given up their search for them. But three months later the two were instructed to break cover and did so with little fanfare. No further action was taken against them.

Conclusion

Right up to the early months of 1991 the channel to Vula remained open and continued to carry heavy traffic. Most of this was in the form of prepared documentation that the comrades could use internally. It saved them the bother of having to prepare such documents and allowed them to concentrate their efforts on production and distribution.

The question of the role of the underground remained unresolved. So long as the regime maintained its arrogant attitude and the situation could not be said to be irreversible there was a need to maintain structures that could be aroused to carry on the struggle. Even after the ANC renounced the armed struggle there was a need to ensure that weapons were securely stored in the event of a sudden reversal.

Vula's communications network had proved so valuable that there was talk of moving it to South Africa, lock, stock and barrel. There was no need to keep the London outpost as there was no longer anyone to communicate with in Lusaka. With the entire leadership now based in South Africa it made sense to bring Vula's external resources home to ensure that internal links were maintained and strengthened.

But as the months passed the underground came closer to the surface and it was soon indistinguishable from the surface. The communications needs of the movement did not disappear but no longer was there any need to maintain a clandestine network. Communications too could come in from the cold.

The lessons of Vula are clear. Without first-class communications you cannot carry out a successful underground operation. Underground does not mean silence, it simply means operating at a different level - one that operates in parallel but separately from the above-ground. Both levels need to be able to communicate in order to operate effectively but in the underground communication links are more critical as they are the cement that binds together the parts.

Vula carried out its activities over a two-year period and during that time more structures were created than during the previous twenty years. Although perhaps fewer weapons were smuggled in than during the previous twenty years, fewer ended up in enemy hands and fewer people were captured.

It is clear that the regime received a major shock when they uncovered Vula. They had no idea of what was going on and it would be fair to say that the sophistication of the operation must have convinced the enemy's negotiators that they were not dealing with the ANC of old. When they discovered that their security apparatus was thoroughly infiltrated with 'moles' who were passing confidential information to the ANC via Vula they must have felt very unsafe

indeed. And when they realised that they were dealing with an underground that could easily contain itself after receiving a severe knock their complacency must have been shattered.

Vula should serve as an example for the present. The need for good communications are as important today as they were in the days of the underground. Good communications will ensure that the party shares the same information and approaches key issues with a united voice.
