

The Eavesdroppers

Britain's largest spy network organisation is not MI5 or MI6 but an electronic intelligence network controlled from a country town in the Cotswolds. With the huge US National Security Agency as partner, it intercepts and decodes communications throughout the world. Freelance writer *Duncan Campbell* and *Mark Hosenball* trace the rise to power of the electronic eavesdroppers.

RAF Chicksands, between Bedford and Hitchin, could be a pleasant day trip from London. The sixteenth century priory is open, and you won't be disturbed by overflying aircraft. Instead Chicksands is dominated by a giant hill-top monolith, a steel circle a quarter mile wide. Not far off, in a long low building, 200 operators of the United States Air Force Security Service sit over radios monitoring the ether from their giant 'Steelhenge'.

Chicksands is the largest listening post in Britain of the US National Security Agency. NSA is responsible for directing American intelligence from satellites to spy ships. Last summer, former CIA director William Colby told a US Senate Committee that NSA monitored all phone calls to and from the US, intercepted commercial communications, and raided embassies for codebooks.

No one is immune, not even America's closest allies. Former NSA analyst Winslow Peck (below) worked in the late



sixties at the US Air Force installation near Istanbul, another station in the chain of 12 key NSA sites that includes Chicksands. On a recent visit to Britain he described to *Time Out* top secret lists of monitored UK commercial communications kept at the Turkish site. Called TEXTA, these lists revealed that the UK business communications were apparently being intercepted from eastern England.

Another ex-NSA serviceman, who served three years in Chicksands recently, described how British representatives were effectively excluded from checking on NSA work—and how one of two key monitoring controllers were responsible for intercepting communications from France!

NSA is partnered in a worldwide electronic intelligence pact by four other powers: Britain, Canada, Australia and New Zealand. By a 1947 secret agreement, UKUSA, these five English-speaking nations have divided the monitoring of the world's communi-

cations between them. Each country's signals intelligence (SIGINT) agency has authority to monitor communications in one area. Europe west of the Urals and Africa come under Britain's representative in the UKUSA pact—Government Communications Headquarters, known as GCHQ.



Home Office interference tracing is done by a fleet of 320 specially equipped vans. The larger ones carry a 30 foot telescope mast with directional aerials and wide coverage receiving equipment to pinpoint any interfering signal.

From two modern office blocks on the outskirts of Cheltenham, the directors of GCHQ manage a world-wide network of listening posts. They have directed aircraft and ships into foreign air and sea space to obtain information on their communications and defences. The listening posts are often found in the most remote places—Cyprus, Hong Kong, Singapore, Oman, Belize, St Helena, the Ascension Islands and Botswana among others. Another base was recently identified in Australia, when after a typhoon hit Darwin, large numbers of RAF personnel were discovered on a nearby off-shore island. The GCHQ network comprises an estimated 50 stations. In 1963 it won a secret battle to take control of all army, air force, and navy monitoring and clandestine radio stations.

GCHQ's director Bill Bonsall, although nominally responsible to the Foreign Office, sits on the Joint Intelligence Committee and probably works for Cabinet intelligence chiefs. His predecessor, Sir Leonard Hooper, KCMG, now works in the Cabinet Office after 32 years with GCHQ—a clear indication of the modern pre-eminence of SIGINT. But since the Labour government took power in 1974, GCHQ's secret budget has been reduced, and its listening posts east of Suez considered for closure.

The worldwide intelligence collection by GCHQ provides Britain with considerable power. At Francistown in Botswana, the RAF operates an electronic intelligence base on behalf of GCHQ, which, with powerful antennae, can monitor the signals of guerrilla movements and government forces from its strategic position in the centre of Southern Africa. They are much better placed than the NSA, who, according to Winslow Peck, had to use a Pueblo type spy ship on patrol off

Mozambique to monitor the Frelimo guerrillas. (Information on the signals and positions of Frelimo transmitters was then passed on to the Portuguese via NATO.)

In Cyprus ten years earlier, Foreign Office radio teams were also found to be operating in interesting proximity to the monitoring station and the BBC there. After the abortive Suez operation the Foreign Office—furious with the BBC's calm objectivity—took over a British

return—they had been flying a 'provocative' mission into the Soviet Caspian Sea Special Missile Test Range and on to test the Soviet air defences.

Deliberate intrusion into foreign territory is not new. In 1958, two Oxford University students exposed some of Britain's clandestine intelligence gathering in an article in the University magazine, *Isis*. They described a fleet of spy boats manned by Germans and captained by Britons,

Policing the airwaves

The Home Office is the only British agency with a legal right to monitor communications. The Home Office's Radio Technology Directorate carries out several monitoring tasks to keep the airwaves free of pollution—and illegal transmitters. The Radio Technology Directorate employ 400 Post Office radio officers throughout Britain to track down an unwanted signal. Its Interference Division traces over 40,000 complaints of interference a year—all for the price of a form filled in at the local Post Office. With 300 special vans, many equipped with telescopic direction finding aerials and special surveillance equipment, they can track down sources of interference. In important cases, such as the time a local factory was accidentally jamming communications to aircraft landing at Manchester, they have spent six months pinning down the source of dangerous interference.

A series of fixed Post Office and Home Office monitoring stations also listen out for illicit transmissions. The equipment is similar to the open Interference Division, but the activities are more concealed. Around London, a chain of direction finding aerials can be used to track down pirates and others. Such stations are at Ewell, near Epsom, Sanderstead near Croydon, Frinton in Essex, and elsewhere around Britain. One is even on the roof of the Directorate's Headquarters at Waterloo Bridge House.

At Baldock in Hertfordshire, the Home Office runs an 'International Frequency Monitoring Station' called Radcontrol, which fulfils Britain's treaty obligations to check on interference caused to radio overseas. With two direction finding substations in the south of England, Radcontrol is the Home Office's communications intercept, investigating complaints of serious long range interference.



RAF Croughton near B site which relays information.

On every wavelength

The Composite Signals Organisation was set up in 1963 to bring all clandestine radio and monitoring operations under control of GCHQ. Two of its sites are within ten miles of Belfast and may be involved in monitoring IRA radio. At Morwenstow, near Bude, Cornwall, two 100-foot satellite terminals reportedly receive pictures from American reconnaissance satellites.

Most, if not all, of the Composite Signals Organisation stations in Britain—and there are more overseas—are involved in monitoring the airwaves, using computer controlled radio receivers. At Poundon, near Bicester in Oxfordshire, a well-guarded radio station marked 'Foreign and Commonwealth Office' is situated miles from the nearest town. Two long sheds inside a fenced-off compound house the listeners and their radio sets, while outside stands one of Plessey's 'Pusher' aerials for direction finding, and much other sophisticated equipment.



Loop aerials at the Foreign Office's 'training' establishment communications intelligence, at Poundon Lane, Bicester.

SIS undercover anti-Nasser station to run the 'Voice Of Britain', which relayed the Foreign Office view in opposition to the BBC. The radio side of Britain's dirty tricks agencies are apparently run by the Composite Signals Organisation (CSO), which is run by the ubiquitous GCHQ.

In the early '60s, according to Peck, two RAF aircraft equipped with electronic intelligence equipment took off from a base on the Caspian seacoast of Iran. The planes and their crew didn't

sailing under Swedish colours. These made regular patrols in Russian territorial waters. On one occasion, a British captain took his boat into Leningrad harbour. The authors, who had worked in a Royal Navy monitoring station in Germany, were sentenced to six months imprisonment shortly afterwards for breaking the Official Secrets Act.

Their article also identified a 'chain of monitoring stations from Iraq to the Baltic—in flagrant breach of the Geneva convention'. The stations recorded the

effects when British and American aircraft flew over the borders to trigger off a Soviet response. These flights were conducted regularly—"there is no controlling the appetite of the statistical analysts at Cheltenham," the students wrote.

GCHQ now has an estimated 5000 monitoring operators reporting to it from bases round the world. They may be civilians, RAF personnel or embassy employees. Although the official budget was only some £5,000,000 two years ago, there is no doubt that most of GCHQ's work is funded from elsewhere—in particular by the Ministry of Defence. All GCHQ headquarters' scientific staff are employed by the Defence Ministry, and after an internal

GCHQ. In 1968 they set up a new company called Racal (Slough) specifically to manufacture secret communications equipment in co-operation with the government. In just four years Racal (Slough)'s turnover grew sixfold. Interestingly, the main development centre of Racal (Slough) is at Tewkesbury, noticeably closer to Cheltenham than is Slough.

Another British company to do well out of the boom in electronic espionage is Plessey, who manufacture an aerial system for eavesdropping. One special Plessey aerial—an array of slender posts on a 500 foot pole which can pinpoint the bearing of any signal—was originally developed under a secret GCHQ contract and codenamed 'PUSHER'. Now

record and analyse it, army and GCHQ electronic warfare experts can simulate the 'quite sophisticated' control signal—making the bomb go off prematurely. Or they can devise a way of jamming the radio bomb so that the real signal can't get through—but the jamming must be done cleverly, or the bomb will detonate before it can be defused.

GCHQ also decodes considerable amounts of commercial traffic just like NSA, according to a senior ex-diplomat. The results get to British companies, formally or informally—"It's bound to happen".

Communications interception is the front line of intelligence work, and operators and analysts can't be deceived about 'enemy' intentions. They

same for GCHQ. In Germany bored intercept operators sitting in front of their dials and switches would forget about the Soviet Air Force and tune along the band for the orchestra from Radio Moscow.



The 'Blackbird' SR71 high flying reconnaissance aircraft can gather electronic intelligence and photograph 100,000 square miles of countryside in an hour while flying more than 17 miles up at a speed of Mach 3.



A key US Communications' station to the US by satellite.



Inside Chicksands

Britain, according to former NSA personnel is a 'nice secure place' to set up their hardware. So much so that Britain has three extensive US electronic intelligence bases, one run by each arm of the US services. At Chicksands, the 6950th security group of the USAF Security Service maintain a round-the-clock watch with three shifts of 200 operators and analysts, all working through the gigantic FLARE 9 aerial installation on a nearby hilltop. With this and auxiliary equipment they can monitor and analyse radio traffic from Russia to the Atlantic, locating any transmitter of interest. One of Chicksands' prime tasks, according to an ex-NSA serviceman from Chicksands, is monitoring French diplomatic communications. Inside the single floor operations building, a large sign over one co-ordination centre is 'France'—another, 'Czechoslovakia'.

British supervision is minimal. Apart from an inconsequential RAF squadron leader who is nominally the base commander, there is a room reserved for the British team which liaises with Chicksands. But theirs is the room closest to the entrance, and the only one with a door in the open plan building. This, the former staffer suggested,

could be because Chicksands monitors 'unilateral' interceptions that they don't want Britain to know about.

At Edzell, north of Dundee, another FLARE antenna nestles in the foothills of the Highlands. Intercepted communications are relayed back to the US via satellite terminals and radio links. This is the home of the Naval Security Group, the US Navy's monitoring branch.

But the Army Security Agency base at Menwith Hill, near Harrogate, may be the most secret of all. Ostensibly, a mostly civilian communications relay centre for the US Defence Department, they admit that 'your government won't let us talk about anything else we do'. Former NSA officers suggest that Menwith Hill—which has no FLARE antenna—may concentrate on interception and analysis of telephone calls.

Chicksands is also a major communications centre on the international NSA network for cryptographic material, codenamed CRITCOM. All intelligence bases have special designators identifying them. Chicksands is USA-50, GCHQ in Cheltenham USD1025. Every base in the UKUSA pact countries is linked to the network, as well as others who have more limited access, such as NATO.



The FLARE-9 interception aerial at Chicksands, 1500 feet across.

- Monitoring and administrative sites of GCHQ (and the Composite Signals Organisation).
- Monitoring sites of US National Security Agency and Special Liaison Office
- ▲ Other monitoring sites, BBC, IBA and Home Office.

struggle in the early '60s, all the main monitoring stations are now co-ordinated from Cheltenham. The total cost may be as high as £100 million.

Typical GCHQ receivers scan the radio spectrum under computer control and cost upwards of £80,000. The contracts awarded to their suppliers are extremely lucrative. Most of the money has gone to a handful of British and American firms. Racal, mentioned in connection with the army bribes controversy, has sold many surveillance receivers to

affectionately known as 'Pushie', it is sold widely to African and Middle Eastern countries building up their own surveillance systems.

Some of the most advanced surveillance equipment has been used recently, not to monitor Soviet satellites, but the activities of the IRA. A few months ago, the IRA started detonating bombs by remote radio control. Before such a bomb is placed, however, the radio control is tested—and if monitoring stations can capture this signal,

know only too well the shallow lies and public myths which remain outside. For years, NSA knew and said that the Vietnam war was unwinnable, that the US was fighting the South Vietnamese themselves on behalf of a puppet regime. So, when Nixon ordered the bombers over Hanoi, NSA staff at 'Ramasum Radio Research Station' in Thailand went on strike. Without NSA's electronic eye, B52 bomber losses shot up.

During the cold war years, it was the

During the War a series of computers called Colossus were devised to solve the daily-changing key to the German 'Enigma' machine. Even now the government refuses to reveal how the Colossus machines were built, although it is known that the 1940 machines read information from paper tape at a rate five times faster than is normal today.

The immense secrecy which still surrounds the Bletchley operations may be due to the development of decoding techniques of value today. Britain's cracking of the Enigma cypher was not revealed for 30 years because electronic versions of the Enigma cypher were being sold to Third World countries by European firms such as Crypto AG of Switzerland—and thus were an easy target for GCHQ and NSA codebreakers. Headquarters was formed at Eastcote in the north west of London. In 1953 it moved to Cheltenham, and consolidated its control of Britain's communications intelligence services.

The tradition of having the biggest and best in computing goes back to the original Colossus. On numerous occasions, new generations of computer equipment from the US have been delivered in quantity to Cheltenham before being 'officially' marketed in Britain. With at least five major computer installations, GCHQ has the electricity requirement of a medium sized town.