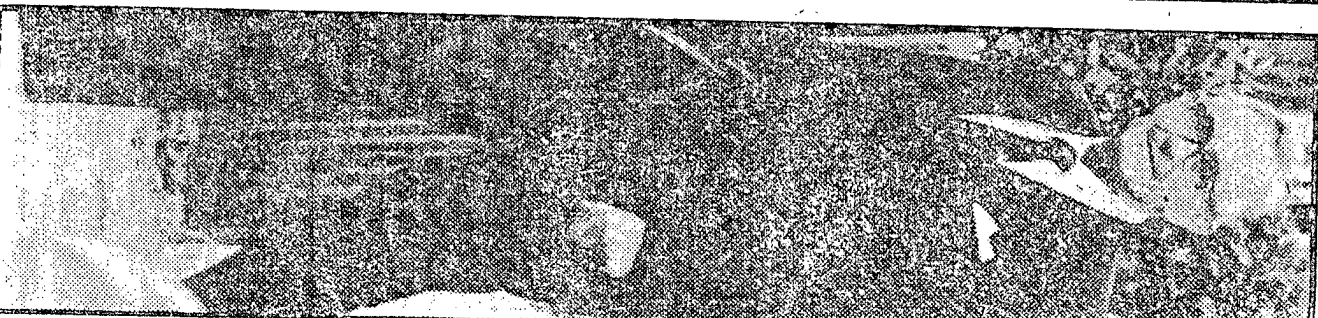
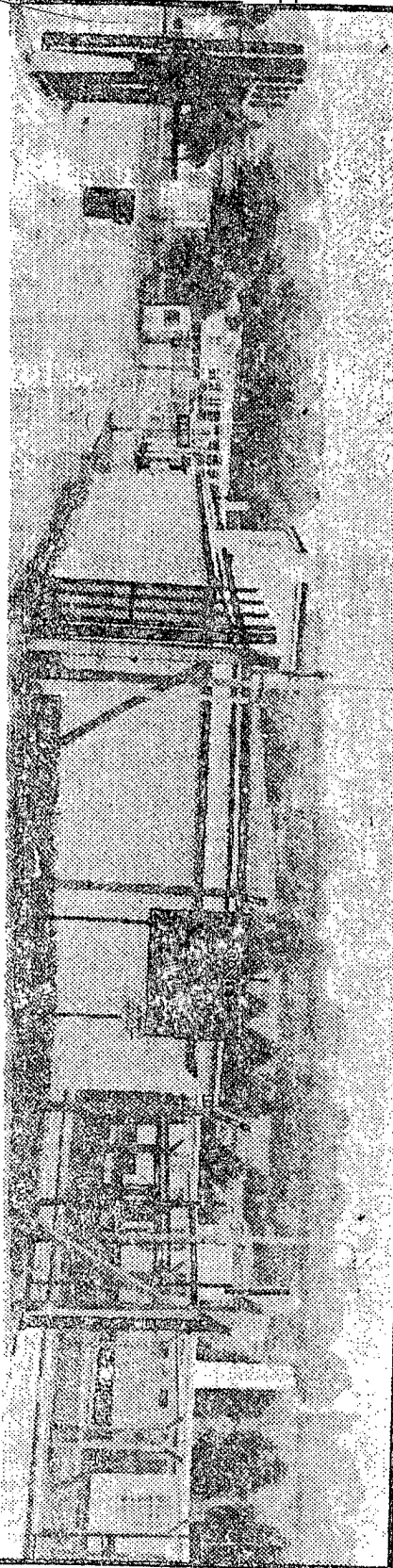
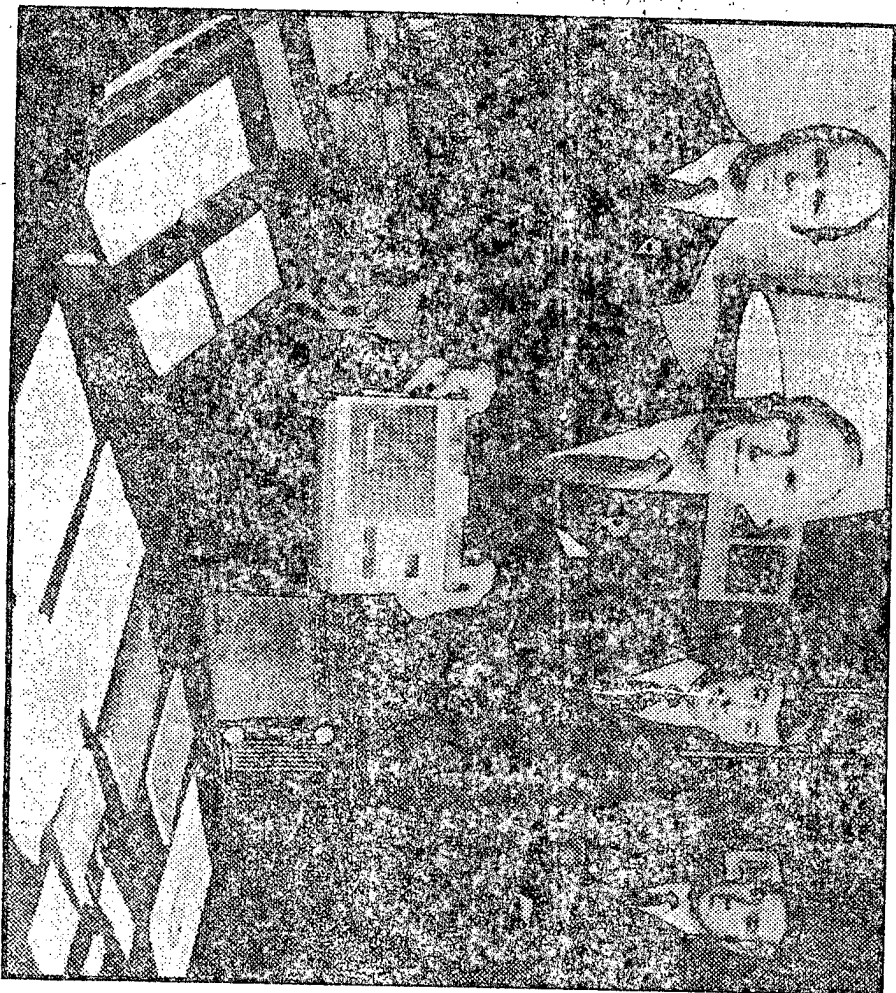


In January 1968 Geoffrey Prime decided to 'make something of himself' and offered his services to the Russians. In June 1982 he confessed his spying activities. Nick Davies Richard Norton-Taylor and Harold Jackson investigate the background to the affair

Kremlin man with a line to West's spy satellites

RIGHT: police officers who led the investigation, with items from Prime's spying kit. Left to right: Det. Chief Supt. David Cole, Mr Robert Cozens (West Mercia Police Chief Constable); Det. Chief Insp. Peter Picken and Det. Supt. Alan Mayo. Below: Oakley Government Communications Headquarters at Cheltenham. Far right: Sir Brian Tovey, the director of GCHQ.



Guardian 11 NOV 82

Direct abolition of private

Labour change

By Colin Brown, Political Staff

Labour health spokesmen have abandoned hope of legislating directly to abolish private health practice. Although they are committed to the objective of abolishing the private health service, they have discovered that it would be impossible, practically speaking, to introduce legislation under a Labour Government to carry out their wishes in one bill.

A Labour health working

party is now considered of carrying out the conference to abolish medicine.

They will try to persuade private consultants NHS by offering to work wholly within the NHS, some also try to remove from the NHS, some Barbara Castle achieve when she is Secretary. They will draw up plans for the

Civil Service union

By Richard Norton-Taylor ... sending most low-

GEOFFREY PRIME has caused panic in Whitehall and fury in Washington because, with very little skill and the greatest of ease, he has made a nonsense of the biggest, most ambitious, and most expensive operation in the history of espionage.

At the Government Communications Headquarters in Cheltenham, where Prime used to work, intelligence officers use a massive battery of technological aids to spy on the military, commercial and political life of among others the Russians, the Chinese, the Northern Irish and even the Americans.

The Cheltenham officer had details of the Russian plan to invade Afghanistan three weeks before the invasion took place and passed on the information to governments who then claimed to be surprised when the Russians moved.

They detected the first tremors of the Cuban missile crisis a clear 12 months before it erupted as an international incident. The base constantly monitors and updates the deployment of Soviet and Warsaw Pact forces on land, air and sea.

Prime worked his way into the heart of this vast exercise in global eavesdropping, threatening the whole logic of the operation. But the implications of his penetration go even further, since the Cheltenham base has two other, equally important functions.

It is in many respects the brain of the British contingency plan for dealing with a nuclear attack. Officers there need to know the day-by-day location of all NATO forces, with whom they may need to communicate, as well as the details of early warnings and states of alert — all critically sensitive information.

It is also an important communications channel through which M16 can contact its informants and agents in Eastern Europe or the Soviet Union by transmitting on pre-arranged wavelengths — information which could lead to the identification of those agents.

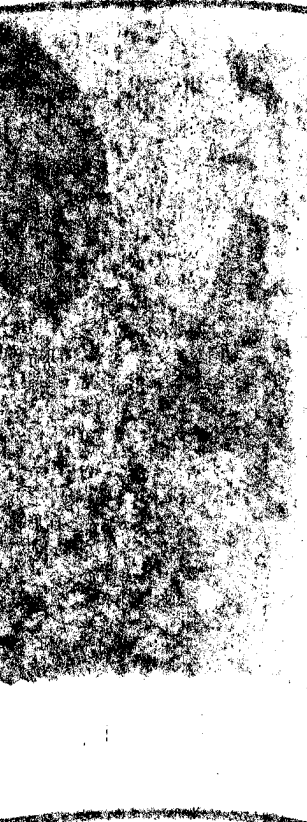
These three functions give GCHQ a unique importance. The fact that the base is jointly run and funded with the Americans, the Canadians and the Australians lends a further dimension to its significance.

The Western intelligence network relies so heavily on Britain — and in particular on GCHQ in Cheltenham — that, as one knowledgeable source in Washington put it: "Anyone in the right position can cause massive

States analysts are particularly to be particularly worked during his of GCHQ where processing to other material could be tracked from in Britain, from the first satellite is a political programme to disclose details that Prime may have any openly there is US intelligence communication, the Russian and intercepting voice lists. They watch all military and civilian aircraft, tracking Polish, Hungarian, more special well — linguists in Russian staff and some civilians as "There are about 250 RAF ing what they pick up there. signal intelligence. It's amazing place but there's no runway, highly sensitive. It's an RAF described his work to the work at a listening post One radio operative who and process information Britain a dozen stations collect Island, and Botswana. Inside Malta, Cyprus, Ascension and in Mauritius, Gibraltar, Kong, Darwin in Australia, and Little Bai Wan in Hong Sino in Turkey, Tai Mo Shan long-range listening posts at Outside Britain GCHQ runs which they pick up, all sorts of information very complete picture from other of battle. They have a Soviet and Warsaw Pact

agent on the ground has heading for Poland and you two in the morning and curial airfield in Russia at plane, maybe, leaving a part. "Other times it's very the haven tonight who's going to the party at kinds of personal stuff about thing cheeky. You pick up all bit of backbit, say some. Sometimes they give you a pilots know you're listening communication. The Russian them and intercepting voice and civilian aircraft, tracking lists. They watch all military and civilian aircraft, tracking Polish, Hungarian, more special well — linguists in Russian staff and some civilians as "There are about 250 RAF ing what they pick up there. signal intelligence. It's amazing place but there's no runway, highly sensitive. It's an RAF described his work to the work at a listening post One radio operative who and process information Britain a dozen stations collect Island, and Botswana. Inside Malta, Cyprus, Ascension and in Mauritius, Gibraltar, Kong, Darwin in Australia, and Little Bai Wan in Hong Sino in Turkey, Tai Mo Shan long-range listening posts at Outside Britain GCHQ runs which they pick up, all sorts of information very complete picture from other of battle. They have a Soviet and Warsaw Pact

RAF Sgt. Paul ... who is ... meeting in Washington ... GCHQ ...



Civil Ser

By Richard Norian-Taylor

**to West
satellit**

The second layer of intercept is a network of long-range listening stations, involved mainly in tracking the movement of Soviet and Warsaw Pact forces. It is a very thorough operation. They track everything that moves — from a cup of tea on the edge of the airfield where the eavesdropping is conducted. "It's a very sophisticated operation. The equipment there must have cost a fortune. There are about 100 stations, although it is known that the Americans have a special category for some of the equipment marked 'No eaves' to stop them from being shared with the partners. From Cheltenham, GCHQ sends processed information to Whitehall for the High Groups; which are reviewed every morning to date intelligence reports, and reports on sudden changes in intelligence patterns.

There is a similar meeting in Washington, the director, Sir Brian Tovey, GCHQ, attend the Joint Intelligence Committee Meeting. I am common ground among those who have worked with GCHQ that it is handling so raw information that it is often unable to process. "There were people tracking the movements of planes, working at a listening post described his work to the Guardian: "That place is highly sensitive, it's an RFP place but there's no runway, no planes. It's pure signal intelligence. It's amazing what they pick up there." "There are about 250 RAF stations and some civilians as well — linguists in Russian, Polish, Hungarian, Morse specialists, telegraph military lists. They watch all aircraft and intercepting voice communication. The Russian pilots know you're listening. Sometimes they give you a bit of backchat, say some kinds of personal stuff about who's going to the party at the tavern tonight. "Other times it's very dense. You get a fighter plane, maybe leaving a particular airfield in Russia at two in the morning and heading for Poland and your agent on the ground has the first layer of intercept. The amount of information available before the operation. On December 7, 1941, there was a great deal of information gathered for the Argentine cause. Apparently, in this case, the real issue for government is not how information gets to them whether it is believed. The real issue for government is not how information gets to them whether it is believed. The real issue for government is not how information gets to them whether it is believed.

"There is a gigantic volume of information — far more than people can visualize a great deal of it is gibberish. Professor Erikson says that what he is surprised, and says they're surprised, and piced ingoices. That's rubbish, complete rubbish. Professor Erikson confirmed the extent of eavesdropping during the Czech invasion. They know the Russian order of battle exactly. They also picked up the traffic from Soviet officers complaining about government is not how information gets to them whether it is believed. The real issue for government is not how information gets to them whether it is believed.

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RIGHT : police officers with items from Prime's sp Det. Chief Supt. David Cole, Mercia Police Chief Constable Peter Picken and Det. Supt. Oakley Government Comm at Cheltenham. Far right : director of GCHQ.

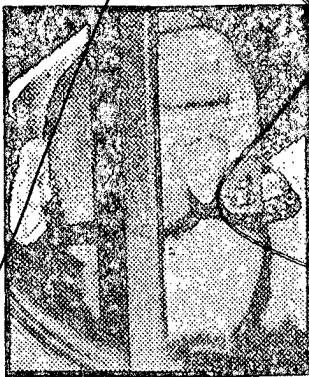


Office to take over cryptography itself.

Their Government Code and Cypher School in Bletchley decoded a stream of Russian messages until 1927 when the Prime Minister, Stanley Baldwin, arrogantly published four intercepted telegrams, so tipping off Moscow about Bletchley's success. Moscow changed its coding system and its high-grade communications have not been cracked since.

During the First World War, the Americans relied for their code-breaking on a private team of analysts who had been recruited by an eccentric businessman to scour Tudor literature in search of a cypher which would show that Francis Bacon had written the works of Shakespeare.

Between the wars, jealousy between army and navy code-breakers was so bad that they arranged an absurd compromise under which the army analysed traffic received on days with an even date, and the navy looked after days with an odd date. The Second World War and the 1947 co-operation agreement put an end to the



RAF Sgt. Doug Britten, who is serving a 21-year jail sentence for spying

RAF Sgt. Doug Britten, who is serving a 21-year jail sentence for spying. The whole thing is run by state: they're RAF people, but common ground among those who have worked with GCHQ that it is handling so raw information that it is often unable to process. "There were people tracking the movements of planes, working at a listening post described his work to the Guardian: "That place is highly sensitive, it's an RFP place but there's no runway, no planes. It's pure signal intelligence. It's amazing what they pick up there." "There are about 250 RAF stations and some civilians as well — linguists in Russian, Polish, Hungarian, Morse specialists, telegraph military lists. They watch all aircraft and intercepting voice communication. The Russian pilots know you're listening. Sometimes they give you a bit of backchat, say some kinds of personal stuff about who's going to the party at the tavern tonight. "Other times it's very dense. You get a fighter plane, maybe leaving a particular airfield in Russia at two in the morning and heading for Poland and your agent on the ground has the first layer of intercept. The amount of information available before the operation. On December 7, 1941, there was a great deal of information gathered for the Argentine cause. Apparently, in this case, the real issue for government is not how information gets to them whether it is believed. The real issue for government is not how information gets to them whether it is believed.

worst of the rivalry and competence. The four signatories to the agreement, Britain, the United States, Canada and Australia, carved up the world into zones for the collection of material.

Britain's GCHQ looks after most of Europe, the Soviet Union east of the Urals, the whole of Africa and China. Canada's Communications Security Establishment takes some of Europe and the north of the Soviet Union.

Australia's joint Intelligence Organisation deals with South-east Asia, the South Pacific and parts of the Indian Ocean. The United States National Security Agency deals with everything else. Internal GCHQ documents, used to train recruits, put the American NSA alone at the top of the hierarchy.

The NSA runs a vast organisation from its base at Fort Meade, Maryland, but it needs allied co-operation. A quirk in the way that radio waves travel from some European transmitters, for example, means they can be received in eastern Canada, but not in Britain.

The NSA's job, as defined by the National Security Council's Intelligence Directive No. 6 is "the interception and processing of foreign communications passed by radio, wire or other electromagnetic means and the processing of foreign encrypted communications, however transmitted".

In operational terms, that instruction means that the Americans in consort with their three partners have set up a global surveillance composed of layers of interception.

The most powerful and sophisticated layer — and the one where Prime may have done the most damage — is the use of communication satellites, particularly the series of four "Rhyolite" satellites.

These satellites — fully publicised and discussed in the USA — intercept microwave communications, usually long-distance telephone calls and radio links and also telemetry signals — the streams of high frequency digital information by which a missile reports back to its earth station every aspect of its performance.

The first Rhyolite satellite was launched on March 6, 1973, into a geosynchronous orbit 22,800 miles over the Horn of Africa, from where it can watch the intercontinental ballistic missiles being tested at Tyuratam, in Kazakhstan, and the SS16s and SS20s at the Plesetsk missile base. A second Rhyolite was launched on May 23, 1977, at the same height over Borneo to intercept Chinese and Soviet military communication and radar, and to monitor Soviet missiles being test-fired into the Kamehatka mountains in eastern Russia.

Since then, two other Rhyolites have been launched.

have changed their telemetry system so that the information is taped on the missile and ejected back to Earth, instead of being transmitted back to base on a high frequency of the type which Rhyolite intercepts.

Although Rhyolite is seen by the intelligence community as "the ultimate bug," it is by no means the only satellite used for interception. The Big Birds, which orbit at between 90 and 100 miles, can photograph a car number plate and locate underground installations with their infra-red detectors.

Ferret satellites map Soviet radar systems; 949s have an infra-red sensor to detect rocket plumes and Vela detectors to locate surface nuclear explosions; 647s over the Indian Ocean and the Panama Canal form an early warning net against submarine-launched missiles.

This array of satellites — purpose built for thousands of millions of pounds — shoots information back to tracking stations which are run by any of the four partners to the 1947 agreement. It is processed and much of it is pooled with intercepts from other sources.

The second layer of intercepts is a network of long-range listening stations, devoted mainly to tracking the movement of Soviet and Warsaw Pact forces. It is a very thorough operation. "They track everything that moves — from a cup of tea to an atom bomb," said one man who has worked in several of the stations.

The stations use radio searches, VHF intercepts, a specialised radar tracking system called SWAMP, and ultra short wave intercepts to provide a daily up-date of the world "order of battle" — the exact disposition and detail of all military forces.

Professor John Erikson, who lectures in Soviet military strategy and communications at Edinburgh University, and who has also trained GCHQ staff, said: "They know a lot about Soviet and Warsaw Pact order of battle. They have a very complete picture from all sorts of information which they pick up.

Outside Britain GCHQ runs long-range listening posts at Sinop in Turkey, Tai Mo Shan and Little Sai Wan in Hong Kong, Darwin in Australia, and in Mauritius, Gibraltar, Malta, Cyprus, Ascension Island, and Botswana. Inside Britain a dozen stations collect and process information.

One radio operative who worked at a listening post described his work to the Guardian: "That place is highly sensitive. It's an RAF place but there's no runway, no planes. It's pure sigint — signals intelligence. It's amazing what they pick up there.

"There are about 250 RAF staff and some civilians as well — linguists in Russian, Polish, Hungarian, Czech and

fully laden. "A red light comes on on your radio set and everyone in the room stands round watching this fighter. Everything else stops. You get that away to Cheltenham as fast as possible. There's also a red phone there which goes through direct to Downing Street for something really big."

At another base a staff of British and American civilians produce special transcripts of the conversation of Russian pilots to try to identify regional accents — a clue to the origin of their unit. They also keep a master list of all names mentioned, as well as noting jokes and references to other units and aircraft. It all helps to build up a picture of Soviet military capability. Information from the satellites and the long range listening stations is supplemented by a third layer of intercepts from short range stations, grouped along frontiers with the Warsaw Pact countries, the Soviet Union and China.

Most of the work at this level is radio eavesdropping. The linguists are given special training in Russian obscenities to allow them to follow every detail of the radio traffic. So advanced is their linguistic ability that they compile their own dictionaries.

A former employee of one listening post described the routine inside the two hangars on the edge of the airfield where the eavesdropping is conducted. "It's a very sophisticated operation. The equipment there must have cost a fortune. There are about 100



RAF Sgt. Doug Britten, who is serving a 21-year gaol sentence for spying

staff: they're RAF people, but the whole thing is run by GCHQ.

"There were people tracking the movements of planes, logging grid references, checking morse and other people taking voice communications. We followed our own traffic as well as theirs. We even intercepted Reuters.

"I was in Berlin when the Russians invaded Czechoslovakia. We were on stand-by for a month beforehand, working double shifts. We knew it was going to happen

area," said Professor Erikson. "They monitor the internal traffic of the Soviet Union, using some very sophisticated equipment. It's largely an American operation."

The object is to monitor "indicators" of the state of the country in search of clues to policy, particularly in the military field.

Professor Erikson said: "The indicator business is very important. At one time there may be up to 200 indicators to tell you whether a state has warlike intentions. By no means all these indicators are military. They cover all aspects of the social, political, economic and military competence of a modern state."

It was these sort of internal indicators which alerted the GCHQ network to the Cuban missile crisis a year before it broke publicly in October, 1962. "One of the first indicators of that was in the autumn of 1961," said Professor Erikson.

"There was a shortage of bunkering fuel for ships in the north of the Soviet Union then, around March, 1962, there was a lot of commercial traffic showing strange shipping movements in the south near Odessa, plus a lot of unusual radio traffic between Russia and Cuba.

"You can see that something is developing and then one small indicator will bring the whole picture together and close it off. That's why the internal indicators are so important."

A lot of the information is pooled between the four partners, although it is known that the American NSA has a special classification for some papers, which are marked "No Foreign" to stop them being shared with the partners.

From Cheltenham, GCHQ sends processed information to Whitehall for the daily meetings of the Current Intelligence Groups; which meet every morning to review up-to-date intelligence assessments, medium-term prognoses, and reports on sudden changes in indicator patterns.

There is a similar daily meeting in Washington. On a weekly basis, the director of GCHQ, Sir Brian Tovey, travels to London by train to attend the Joint Intelligence Committee Meeting. It is common ground among those who have worked with GCHQ that it is handling so much raw information that it is often unable to process and assess it accurately while it is still useful.

This delay, together with the ever-present possibility that an infiltrator such as Prime may be allowing the Russians to produce disinformation, may explain the recurrent charge that Western governments fail to act on the material which has been gathered for them.

— three weeks before invasion — there were photographs of trucks on the road, ports.

Although the four meats resolutely admit it, it is clear their eavesdropping aimed solely at declarations. They eavesdropped on domestic allies and even on each other.

Officials in Washington publicly admitted last year that the Pentagon had secretly been using intelligence expertise and other Western and other Western Canadian newspaper this amounted to. According to Reuters claim to have obtained secret Congressional the American NSA routinely spying of dental communication between British diplomats in Washington and London.

Earlier this year were reports in Canada the NSA had intercepted a message Ottawa government embassy in Washington reports were neither confirmed nor denied.

In the late 1970s, was caught intercepting in a union in Australia which was up the supply of food to an NSA base in Springs.

This mutual suspicion not prevented the partners co-operate efforts to turn their intelligence network into their own citizens. effort to evade the restriction on eavesdropping American citizens, simply recruited GCHQ the job for them.

In his book, Puzos recently published United States, Jamford published intercepted documents which revealed GCHQ intercepted for the Americans at Operation Minaret, programme of surveillance radicals, including Fonda and black leader

For the British, surveillance has a special relevance because of Ireland. Professor said: "We intercept allies, everybody's trade I imagine that a lot is now concentrated Northern Ireland.

The sheer size an ordinary political signal of the eavesdropping have not stopped the partner Government taking every possible prevent their citizens covering what they doing. Estimates of involved in GCHQ at ham range from 20,000. Estimates of start at hundreds of millions of pounds a year go as high as £500 million.

"Modern military rations are not to weapons," said Erikson. "They are

— three weeks before the invasion — there were satellite photographs of Russian trucks on the road, radio reports.

Although the four governments resolutely refuse to admit it, it is clear now that their eavesdropping is not aimed solely at declared enemies. They eavesdrop on allies on domestic citizens and even on each other.

Officials in Washington publicly admitted last month that the Pentagon had been secretly assessing the intelligence capacity of Canada and other Western allies, but they denied allegations in Canadian newspapers that this amounted to spying. According to Reuters, who claim to have obtained a secret Congressional report, the American NSA has been routinely spying on confidential communications between British diplomats in Washington and London.

Earlier this year there were reports in Canada that the NSA had intercepted and decoded a message from the Ottawa government to its embassy in Washington. The reports were neither confirmed nor denied.

In the late 1970s, the CIA was caught intervening directly in a union dispute in Australia which was holding up the supply of equipment to an NSA base in Alice Springs.

This mutual suspicion has not prevented the four partners co-operating in efforts to turn their surveillance network inwards on their own citizens. In an effort to evade the legal restriction on eavesdropping on American citizens, the NSA simply recruited GCHQ to do the job for them.

In his book, *Puzzle Palace*, recently published in the United States, James Bamford published internal NSA documents which record how GCHQ intercepted telegrams for the Americans as part of Operation Minaret, a programme of surveillance of radicals, including Jane Fonda and black leaders.

For the British, domestic surveillance has a special relevance because of Northern Ireland. Professor Erikson said: "We intercept our allies, everybody's traffic. But I imagine that a lot of GCHQ is now concentrated on Northern Ireland."

The sheer size and extraordinary political significance of the eavesdropping network have not stopped the four partner Governments from taking every possible step to prevent their citizens discovering what they are doing. Estimates of the staff involved in GCHQ at Cheltenham range from 6,000 to 20,000. Estimates of the cost start at "hundreds of millions of pounds a year" and go as high as £500 millions.

spies. One of them, RAF Sergeant Doug Britten, is still in prison serving a 21-year sentence for spying for the Russians from 1962 to 1968 at listening posts in Cyprus, and Britain.

Details of the damage done by Britten were kept secret at his trial, but a man who worked with him at Digby has told the *Guardian*: "There was the biggest flap ever, just after the Cuban crisis in 1962, because the Russians suddenly changed everything."

"After a period of years and years when you had been able to tune in knowing the right time and the right frequency, you tuned in and there was nothing there. That was Doug Britten. He had told them exactly what frequencies and call signs and codes we knew about, so they changed the lot."

Britten was recruited by a Soviet diplomat, Alexander Ivanovitch Borisenko, who approached him in the Kensington Science Museum, introduced himself as "Yuri", and started talking to him about a amateur radio, Britten's hobby.

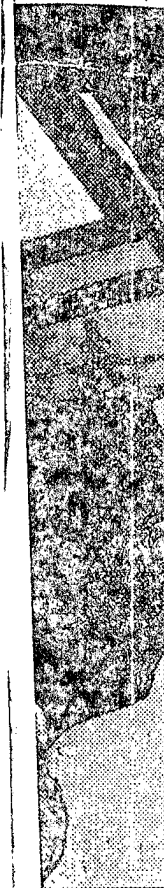
Yuri started to buy low-grade information from Britten, photographed the payments and then blackmailed him for higher-grade material. Britten used a camera, disguised as a cigarette case, to photograph documents at Rigby, and beer cans with false bottoms to pass on the negatives.

Unlike Prime, Britten was caught by the internal GCHQ security system which noticed that he was living beyond his means. A report by the Security Commission concluded, perhaps optimistically, that his case reflected no security weakness.

During the period of Britten's espionage, a corporal with the Army signals unit at Teufelsberg in West Germany, Brian Patchett, defected to East Germany taking still more GCHQ secrets with him. Apart from Prime, Britten and Patchett in the GCHQ complex, the Russians have been well served by infiltrators in the American National Security Agency, which is so tight and secretive that it is known colloquially as No Such Agency.

In 1960, two NSA intelligence analysts, Vernon Mitchell and Bill Martin, defected to the Soviet Union where they held a press conference, exposing the NSA's activities and, in particular, its habitual interception of its allies' communications.

In the backwash of their defection, 26 other NSA employees lost their jobs in "a purge of sexual deviants" inspired by the fact that US security officers believed that the defectors might have been homosexual. Three years later, in 1963, another NSA employee, a cryptologist named Victor Hamilton, defected to Moscow. Again, the Russians allowed him to sub-



the investigation, in left to right: West Coast Chief Insp. Sgt. Hago, Below: Headquarters, the

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Prime decided in June 1982 he and Harold Jacks

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