



## **CHAPTER 8 - MID TERM**

### **Force Signals**

The year 1969/1970 was one of the busiest years for 110 Signal Squadron, as shown by messages handled and the extensive redeployment of squadron assets to meet a changing situation. Traffic through the Saigon Major Relay Station reached 104,900 in September 1969, almost 3,500 per day, the highest yet recorded and not exceeded at that MRS. Telephone calls through the EMU switchboard (Vung Tau) reached a high in April 1970 at 7000 per day, or one every six seconds in the busy daylight hour; it was more than a year before this record was broken.

In August 1969 the message situation was such that parts of the signal system were approaching saturation for the current organisation, circuit standards and operator skill levels. Intensive efforts at improvement were made in the weaker areas, such as the Vietnam - Australia HF circuit. The maximum power of five kilowatts from each transmitter was marginal, every element of the system was regularly checked to achieve the last watt of performance. Any unnecessary outage compounded the saturation problems by causing re-transmissions and service messages.

The 252 members of 110 Signal Squadron were scattered in five fixed locations - Saigon, Long Binh, Vung Tau, VC Hill and Nui Dat; in addition there were often temporary deployments of AN/MRC-69 terminals to fire support bases or similar tactical locations.



**Photo 8.1 - VC Hill, Vung Tau (taken from 110 Signal Squadron lines) (1968).**

In 1969 it became evident that the Australian presence would eventually contract towards Vung Tau and the squadron planned to reorganize accordingly.





Long Binh was the US STRATCOM receiver site in which the Australian receivers on the Australian - Vietnam circuit were located. Extensive testing over several months showed that Vung Tau was also suitable so the receivers were moved there in November 1969, incidentally releasing the Siemens Halske 24/400 UHF bearer system between Saigon and Long Binh. This equipment was re-installed between VC Hill and Vung Tau in lieu of AN/MRC-69 tactical radio relay system. Such was the Siemens Halske reliability that it was placed unmanned in the US 69 Signal Battalion tropospheric scatter facility on VC Hill, further reducing complexity of squadron deployment.

Persuading the signal battalion commander to permit the installation in his area required some careful diplomacy. The American colonel required everything in his installation to be immaculate - no dirty labels or greasy finger marks on equipment and he was a little dubious at first of Australian standards. After several months he unfailingly showed his visitors 'the Australian equipment' and sometimes requested the presence of an Australian Signaller to stand beside it! There was always a good relationship between US 69 Signal Battalion, the giant on VC Hill, and 110 Signal Squadron down on the sandhills. Volleyball and similar activities were mixed with the electronic relationship.

By early 1970 the Siemens Halske 24/400 equipment formed a triangulated commercial radio relay links from between Saigon to Nui Dat, Nui Dat to Vung Tau and Vung Tau via VC Hill back to Saigon. This freed the tactical radio relay AN/MRC-69 equipment for operations out of Nui Dat.



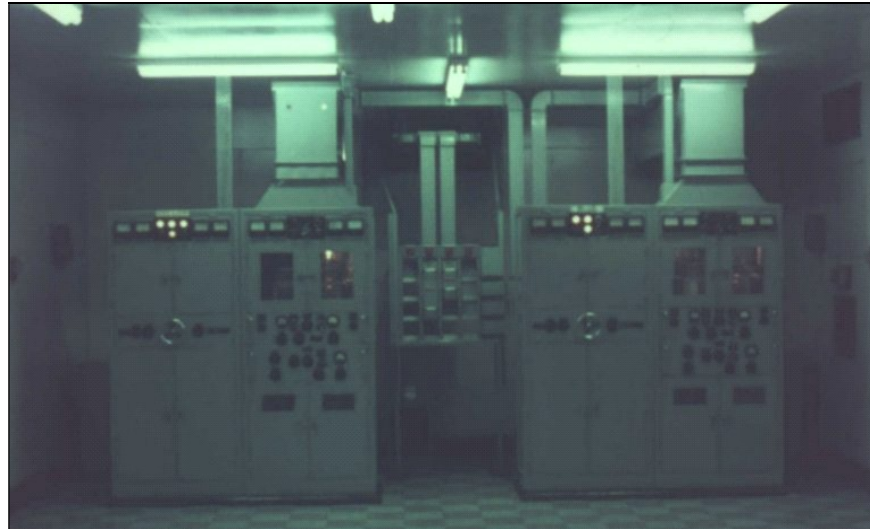
**Photo 8.2 - Communication equipment at 110 Signal Squadron, Vung Tau (1970).**

Early in 1970 planning began to move the rear link transmitters from Nui Dat to Vung Tau. The new building was completed and equipment installation by a detachment





of 127 Signal Squadron, under Lieutenant Fergie Shaw, assisted by 110 Signal Squadron, was well under way in June 1970 when it was ceremonially dubbed Tieng Noi Uc, a rough way of saying "Voice of Australia" in Vietnamese. Preparation also began to rebuild Vung Tau into the major relay so that Saigon could eventually be closed.



**Photo 8.3 - AUSTCAN E513 Transmitters at Vung Tau (1970).**

All these activities helped keep morale high, particularly in early 1970. Evidence of the spirit of the squadron was that in March 1970 10% of its members were actually on voluntary extension, serving an additional period beyond the normal twelve months. Motives for extension varied, one particularly gifted technician on extension spent all his spare time as honorary English teacher at one of the local schools.

The RA Sigs Corps Committee had provided a ski boat, named 'Jimmy', and outboard motor. It was used off the beach in Vung Tau and many members of the Corps enjoyed the sport - not so for Major Mervyn Ramsay who had his tour of duty as OC 110 Signal Squadron interrupted in October 1969 when the boat ran over him causing considerable injury.

At times personnel turnover was heavy, with 60% of officers changing in the last quarter of 1969 and 20% of the entire unit changing in April 1970.

Squadron equipment varied in quality, the Siemens Halske FM 24/400 microwave and VZ 12K channeling equipment providing excellent service. For a period this equipment had almost no spares backing; imagine the maintenance troop commander's language when one day a technician cooked in a drying oven the only spare in theatre of a particular VZ 12K module! The AN/TRC-24 was a reliable radio relay workhorse, but there were frequency interference problems, the Americans seemed to be operating hundreds of them. The AN/TRC-24 was coupled with the F1830 channeling equipment, which unfortunately had a ringing system incompatible





with the VZ 12K making tandem operation of FM 24/400 and AN/MRC-69 systems a major technical problem.

At the other end of the reliability spectrum was the famous EMU switchboard, which will undoubtedly be one of the Corps' legends. The March 1970 squadron report stated in exasperation **"this board carried the hallmark 'moisture fungus proofed Nov 44'. The board is older than most of its operators; it appears increasingly to resent their attention and the attention of the technicians who minister to its ailments."** Later the EMU was reported to be seeking repatriation benefits for wounds received from its operators, and the operators were said to be claiming compensation for utter exasperation. On a serious note, switchboard equipment just did not meet the needs of the Army in Vietnam. The TC-10 EMU switchboard at Vung Tau was eventually replaced in February 1971 with an AN/MTC-1.

HF radio had a place in the squadron for intra-theatre use as well as for strategic communications. An emergency net Saigon - Vung Tau - Nui Dat existed and was regularly tested. Whenever the Saigon - Phan Rang (where the RAAF Canberra bomber squadron was located) circuit, using a channel in the US Defence Communications Agency system, failed, a Vung Tau - Phan Rang HF link was activated. This occurred frequently in 1970, secure RTT being the mode used when conditions permitted. "HF House" in Vung Tau regularly contacted the famous HMAS Jeparit and HMAS Sydney and occasionally other RAN ships and Army vessels such as Clive Steele and Harry Chauvel. Army vessels normally had RA Sigs operators on board to provide radio communications. On one occasion the HF circuit was phone-patched via the EMU switchboard to the Naval Staff Officer in Saigon.

HF operators and technicians had good reason to beware of tropical thunderstorms - more than once meters were blown clean out of the large transmitters when lightning struck their antennas.

Thunderstorms created other problems in the wet season. The squadron in Vung Tau reported that **"the opening crescendo of the 1970 wet on 26 May 1970 resulted in a few hundred tons of the squadron area moving into 102 Field Workshops below. Last year one six-hole toilet was included as a bonus; this fall almost included the generator shed."**

Carriage of air despatch service and safe hand bags was another important, though little noticed task, with up to 300 bags a month moving around the theatre. When the official bags wore out, they were replaced by the traditional Army 'cricket bag', complete with lock. There was never any lack of volunteers for a courier trip, though some couriers arrived as green as their cricket bags after a rough, wet RAAF Caribou trip in the bumpy tropical air.





Photo 8.4 - Deployment Troop, 110 Signal Squadron setting up at FSPB Bond - AN/TRC-24 Antenna left side of photo with Shelter being dug in (1970).

Members of Deployment Troop were always a keen bunch ready to move with their AN/MRC-69 shelters to fire support bases and other field locations. A few members had a close shave at Horseshoe Hill near Nui Dat in early 1970 when a mortar bomb missed their shelter by a few feet, perforating it with extra ventilation holes.

In April 1970 it was reported from Fire Support Base BOND that ***"troop members provided 14 channels with a system availability of 99.5% and further distinguished themselves by locating a VC bunker. The bunker was fortunately ZGN with respect to VC and booby traps."***

Civic action was 110 Signal Squadron's strong point both in Saigon and Vung Tau. A squadron civic action committee operated with volunteers from all ranks. Some tasks were pleasant and immediately rewarding, such as soldiers from Queensland working with the Vagabond Boys Home group, showing them how to obtain better yields from their banana plantation. Instruction was not all in one direction - one lunch time Vietnamese boys seized a passing dog and demonstrated a speedy conversion into dog sausages, which were consumed with relish. The soldiers preferred to eat bananas however!

Other civic action tasks were heartbreaking, working in the stench of overcrowded orphanages and seeing the deaths of sick children.

The squadron contributed to the welfare and relaxation of the Australian force generally by building the antenna for the Australian Forces Broadcast Station, a very awkward job on a swampy corner of the US Army airfield, and by operating a tape library service for recording of music. The tape service was so popular that a







technician was employed full time with some four of the tape machines operating continuously.



Photo 8.5 - Lt Anthony Roberts, 110 Signal Squadron, DJ shift at AFVT (1970).

A limited private telegram service to Australia was provided using code numbers, an archaic system resurrected from World War Two. If the wrong numbers reached the other end, the message **"Happy Birthday mother"** could end up as **"I am broke - send \$20"**.

One formal honour was awarded to the squadron in the 1969/70 period in the form of an MID for rigger Sergeant Robert Crawford. The riggers rarely had time for relaxation and often had hair-raising climbs. Antennas were alternately sand blasted by the winds, undermined by water and corroded by salt. Another honour unknowingly bestowed on the Saigon element was the routing indicator RAMA for the major relay. The Thai contingent headquarters was near the relay and the Royalist Thai officers pointed out that RAMA the name of the current dynasty of Thai kings.

This was another testing period for the squadron, possibly the best achievement being the high standard of control exercised by squadron officers and senior NCOs from the operations room. This system provided central coordination and supervision continuously for a large, diverse and geographically scattered organisation. Major problems were rapidly addressed at any hour with whatever resources were needed to solve them and usually they were solved quickly.

### Task Force Signals

1 ATF operations increasingly involved longer periods away from the Nui Dat base.





In January, 1969 Major Keith Morel took command of 104 Signal Squadron at FSPB JULIA established for Operation GOODWOOD which began a month earlier and from there he went on to FSPB KERRY at the end of the month for another operation concerned with the anticipated enemy Tet offensive in 1969. Then HQ 1 ATF (Main) proceeded directly on Operation OVERLAND to FSB JILLIAN which an infantry battalion had been occupying. This was followed by a redeployment to FSB MARTINE on the way back to Nui Dat. This continuous series of operations finished in April 1969.



**Photo 8.6 - Sig Ken Winsor with the 104 Signal Squadron COMM-CEN ACV at FSPB Clare - Note the Shrapnel holes in Landrover windscreen from a mortar attack (1969).**

That was the last of the major deployments of HQ 1 ATF (Main) for the year. On one occasion a small element of HQ 1 ATF deployed on an operation to assist an ARVN unit, the Radio Troop Commander, Lieutenant Peter Diddams, was made responsible for the signals detachment.

In December 1969 HQ 1 ATF (Main) deployed to a fire support base north of Nui Dat for 10 days but this was mainly a shake down operation necessary because of many changes of staff since the last deployment of the task force headquarters. The task force headquarters deployed only once for 7 days in April 1970 followed by a short testing exercise in August. With the reduction of the task force to two battalions in November 1970 there was a lower level of operations.

The provision of liaison officer detachments, each of two radio operators, posed quite a strain on the squadron. Since 1 ATF had arrived in Nui Dat there was always a commitment for LO detachments. Task force units were constantly operating with US forces and frequently with ARVN units, with Thai units and with Vietnamese Popular Force and Regional Force units and posts. Liaison officers were essential to avoid misunderstandings and mistakes. On Operation GOODWOOD 104 Signal Squadron had to provide no less than 9 LO detachments - almost a third of the strength of its radio troop.





The LO requirements had other implications for the always tight manpower situation in the squadron. Many radio operators were National Servicemen and they could not have their return to Australia delayed or their discharge procedure could not be effected in time. Their replacements never arrived in advance, they arrived at the time others were being returned or, more usually, a week or two later.

Some squadron officers also did LO duties. Captain Neil Horn, second in command of the squadron in 1969, was for a time the LO in Baria and was awarded a Vietnamese medal for his services. The COMMCEN Officer, Captain David Nichols, was another who did LO duties that year.



**Photo 8.7 - COMMCEN Routing Clerk area 104 Signal Squadron - Note the ADS bags (1971).**

Further compounding the manpower problem was the requirement for the squadron to provide men for patrols from fire support bases. This was in addition to the patrols around Nui Dat.

Signals personnel in the squadron performed other tasks which proved vital but are not well known, and often not recognized by people outside the Corps as being beyond what the men were trained for. Two excellent examples come from the radio operators. They were often in isolated areas and called down fire support and DUST OFF missions (helicopter casualty evacuation). Then there was the "CP Op" - a highly proficient operator but he needed to be of a special breed because the task force command post staff, in Nui Dat and in fire support bases, expected him to mark







maps, decode and perform other staff tasks, whilst coolly operating the net.

Switchboard operators are always an unsung lot and those on EBONY at Nui Dat were no exception. During the early days they had to contend with the unreliable eyeball indicators and cords of the SB-86's, which were never intended for the service expected of it as the EBONY switchboard. When the TC-10 was installed in 1967 the whole Nui Dat telephone system was changed from magneto to common battery but impatient users were not content with just picking up the handset and so smartly turned the magneto handle of the K Phone. This sometimes caused the line indicator lamp to burn out. All the handles were removed, to the frustration of telephone users.

EBONY switchboard was re-equipped with another board, an AN/MTC-1, on loan from the US 39 Signal Battalion which in turn was eventually replaced with an Australian owned AN/MTC-1 in 1971.



**Photo 8.8 (left) - Ebony AN/MTC-1 Switchboard Shelter (AN/MTA-3) with Sig Anthony Campbell (front), Sig Anthony Pool (next) and Sig Peter Smith, 104 Signal Squadron, Nui Dat (1971).**

**Photo 8.9 (right) - Ebony AN/MTC-1 Control Shelter (AN/MTA-4), 104 Signal Squadron, Nui Dat (1971).**

The hard working linesmen seldom get much recognition either. They can get frustrated too as happened in 1969. The line around the base was by this time multi-pair (up to 150 pairs) of underground cable and alternative routes were not part of the system. On one occasion engineers severed a cable and to the dismay of the squadron's linesmen it was found that the cable was not colour coded. It was in an area which was to be the site of the Nui Dat dam so a complete new section of cable





was laid out ready to be put in the trench when a tank neatly severed it again! The underground cable began to have a high fault incidence and in latter half of 1970 replacement with aerial multi-pair cable began.

By now some 15 nets were remotely controlled by radios on the Nui Dat feature. 104 Signal Squadron attended to the radios of other units so that it retained control over the hill. There was a Deeco mast with custom built antenna arrays cut to various frequencies and appearing on a patch panel in the bunker. There was a similar arrangement in the squadron area to provide an alternative for five prime task force nets.

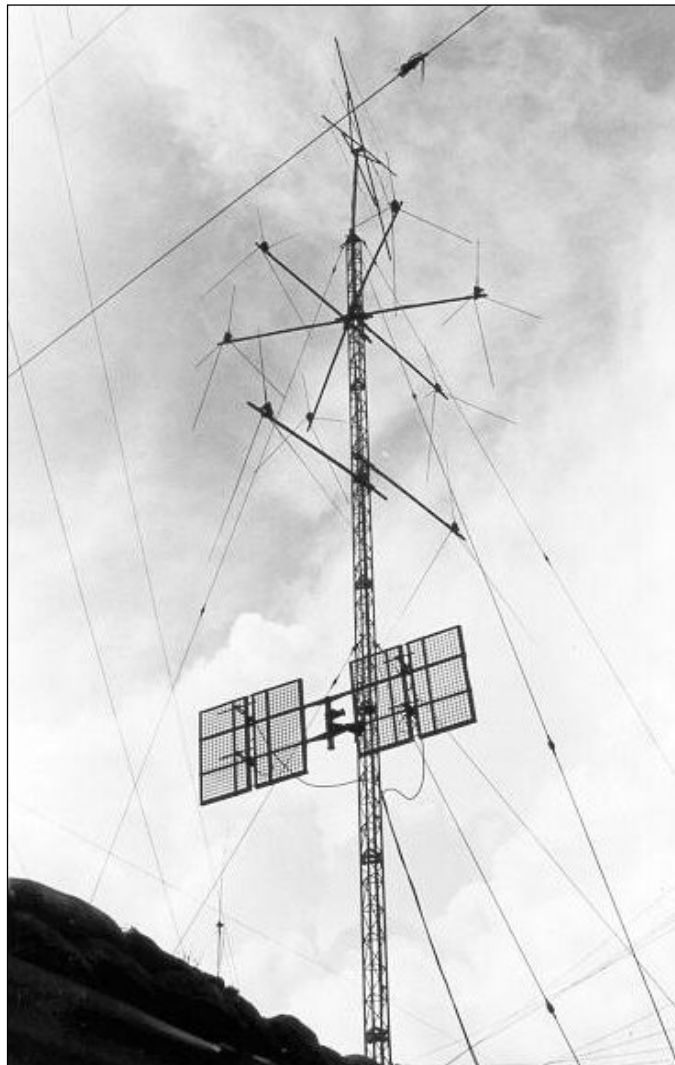


Photo 8.10 - 1 ATF Radio Command Net Mast, Nui Dat Hill (Aug 1971).





Photo 8.11 (left) - Inside the 104 Signal Squadron, Radio Bunker on Nui Dat Hill (Aug 1971).

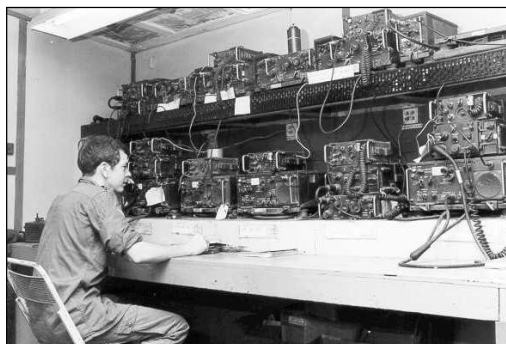


Photo 8.12 (right) - Inside COMMCN Bunker, beside 104 Signal Squadron HQ building (Aug 1971).

Radio retransmission became increasingly important, especially for SAS patrols where the need for HF radio was eliminated. A retransmission team was located on Hill 837 (Nui Chua Chan) in a US defended locality and resupplied by helicopter from Nui Dat. This ensured excellent VHF communications to the patrols operating deep within Phuoc Tuy Province or outside it.



Photo 8.13 - Hill 837 looking east (February 1970).

The communications centre of 104 Signal Squadron handled a considerable amount of traffic. In May and June 1970 the total of IN and OUT messages exceeded 17,000. Dispatches in each of three months were in excess of 40,000, a level which continued or was exceeded for some months.

Civic action was also undertaken by the task force signal squadron. As early as 1966 repairs to the Hoa Long High School had been undertaken and further help was given in 1970. Later the squadron became responsible for part of a refugee village, Soui Nghe, set up a few kilometres north of Nui Dat. The unit also fostered the Hoa Long Boy Scout troop.





During 1968 and 1969 communications within and to the task force built up to the point where they were highly reliable, flexible and abundant. Quite possibly though RA Sigs has made a rod for its own back as any future conflict may not admit the same lavish scale of equipment nor may the area of operations allow such excellent communications - yet users will expect it. By early 1970 some of the VHF voice command radio nets, were upgraded to the AN/PRC-77 Radio Sets, so secure speech mode using the KY-38 could be used. This solved radio security concerns that had worried RA Sigs personnel since the first deployment to South Vietnam.



Photo 8.14 - AN/PRC-77 Radio Set with its two field Antennas.

### Electronic Warfare Support

Electronic warfare was a little known aspect of the Vietnam campaign, and in this regard the campaign was probably no different to other conflicts. A few operators and some officers became aware of the enemy engaging in electronic warfare when they experienced jamming but otherwise only senior commanders generally gave sufficient weight to this enemy activity.

From time to time units of 1 ATF had their radio nets jammed but the enemy technique was simple and the characteristic FM capture effect usually resulted in the wanted signal being received. It had a nuisance value but was seldom effective. However, Lieutenant Colonel P.H. Bennett, CO, 1 RAR at FSPB CORAL, commented later ***"we experienced for the first time in Vietnam (for 1 RAR) the rather terrifying situation of having a local jamming unit on your command net"*** which was quickly overcome by frequency changing. He also remarked that line was laid in CORAL not just for the usual reasons but because ***"it had become pretty obvious to us that all allied nets were being very carefully monitored by the enemy"***.

The enemy gained far more information from intercept operations. 1 ATF and other







forces did not change call signs, codes and frequencies on a daily basis in the belief that the enemy could not react quickly in sufficient strength to take advantage of the information generally concealed by such defensive measures. But there was another practical reason for not making daily changes, this war involved the greatest use ever made of radio so that frequency assignment was a major problem. Even within 1 ATF one frequency would often have to be assigned to more than one net and when units operated with or close to other allied forces interference would often be experienced. Once having got a clear frequency, units preferred to keep it because they felt it was better to have reliable radio communications knowing that the enemy could instantly identify their nets rather than have unreliable communications each time the frequency was changed. Helicopters also added to the problem, as there were assign frequencies many hundreds of kilometres from Nui Dat and be tasked to do a mission in 1 ATF area.

Corporal Denis Hare remembers an incident in 1968, while working in 104 Signal Squadron's Communication Control (COMMCON). Australian Soldiers exercising in SWBTA near Rockhampton in Queensland, VHF radios were being ducted in (over 7,000 kilometres) on one of 1 ATF command radio nets - while a battle was being fought. At first, it was thought the enemy had captured a radio detachment and was forcing the Radio Operators to communicate on the command net or Australians were working with the enemy. Communications was established with the Australians in SWBTA and they gave their location. A message had the radio removed from the tactical command net!

In an effort to reduce information disclosed over radio, radio relay and line, a Signal Detachment from 110 Signal Squadron, and often under command of 104 Signal Squadron, monitored our own circuits and reported on security breaches. However by far the greatest advance in improving communication security was the introduction of speech secrecy equipment (KY-38) for use with the AN/PRC-77 VHF Radio Set.

1 ATF received electronic warfare support from 547 Signal Troop (see Chapter 5). It was administered by 103 and then 104 Signal Squadron but reported direct to HQ 1 ATF. Many commanders of 1 ATF had high praise for the contributions this troop made to successful operations of the task force.

### **Call Home Service**

A "Call Home" service was opened in November 1970. This was probably the first time in the history of Australian Forces overseas that servicemen could telephone their families from a theatre of war.

Four wire telephones were used at Nui Dat, 1 ALSG and 1 Australian Field Hospital in Vung Tau, and Saigon. The connection was made on the Siemens Halske bearer system then via a cable and wireless HF radio circuit to Hong Kong, the SEACOM







cable to OTC in Sydney and finally the local telephone system in Australia to the called party.

There were some technical and administrative teething problems but the system settled down well and was a good morale booster with some 20 to 30 calls being handled a day.

