Chapter 2. The Diplomatic Special Intelligence Section: Its Origins and History[1]

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Three months after the outbreak of war, the Chief of the Naval Staff (CNS) on 12 December 1939 wrote to his colleagues, the Chief of the General Staff (CGS) and Chief of the Air Staff (CAS) that it had 'been suggested' that it might be desirable to set up in Australia 'a cryptographic organisation on the lines of the Government Code and Cypher School (GC&CS) in London, with a view to breaking down enemy codes and cyphers'. He sought their views. The source of the 'suggestion' he did not state. Presumably it had come as an informal feeler from the GC&CS through the Admiralty.

The CNS was lukewarm to the suggestion:

> As far as European nations are concerned it is doubtful whether we can do much at this distance, either on our own account or to help the UK Organisation. As far as Asiatic nations are concerned, any local organisation would appear to be a duplication of the UK Organisation in the East … .

The CGS was a little more enthusiastic:

> I consider that we should have at least a nucleus organisation in Australia against the contingencies of operations in and about Australia and her territories. The work is clearly of a highly skilled nature and much practice is necessary, and the sooner a commencement can be made the better.
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> I agree that the aid of the British authorities should be involved … .

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1 As a result of the wholesale and unsystematic destruction of the records of the Naval Intelligence Division and the Directorate of Military Intelligence and their subsidiaries, the source material for this study has been limited to the occasional file that has survived and to the recollections of some of the participants.

The only surviving records of the Section's activities appear to be: (i) the 30-page report (stripped of its appendices) tendered by the Section at the time of its disbandment in 1946 (National Archives of Australia (NAA): A6923/2, 1); (ii) the Department of the Army, Central Registry file on the Section (NAA: A6923/3, 37/401/425); unregistered box files from the office of the Captain Ix at Land Headquarters of outwards signals dispatched by the Section through the Assistant Director of Military Intelligence for the period 28 November 1942 – 23 April 1943 (consisting principally of summaries of translations of selected intercepts) and 5 August 1943 – 27 May 1944 (consisting principally of daily traffic lists and newly solved code groups, cypher keys and additives) (NAA: A6923/3, [DMI Diplomatic Message Traffic]).

The chiefs considered the matter at the meeting of the Defence Committee on 15 February 1940, at which it was resolved that 'as a preliminary to any further action, the advice and assistance of the United Kingdom authorities should be sought'.[2] At the measured pace of officialdom, the views of the chiefs and this request for advice were conveyed to the British Government in a letter over the signature of the Prime Minister dated 11 April.

In the army, the General Staff took prompt preparatory steps for setting up this 'nucleus organization'. By the end of January 1940 the GSO II (Intelligence) at Eastern Command, Sydney had gathered together a group of four academics at Sydney University — two mathematicians (Professor T. G. Room FRS and Mr R. J. Lyons) and two classicists (Professor A. D. Trendall and Mr A. P. Treweek) — to teach each other cryptography in their leisure hours, using as their raw material copies of the past traffic of the Japanese Consul-General provided by the cable and wireless company.

By October the GSO II was able to report that:

> Work has been concentrated on an attempt to break down the Japanese commercial and diplomatic codes … . Three definite codes have been identified in use and in the case of one of these it has become apparent that a new code was brought into operation on 1 October 1940. As the general principles underlying this are assumed to be identical, it is believed that if the code upon which work is being done is broken, it will be an easy matter to apply the results to the new code … .[3]

He also reported that for variety he had sent the group coded portions of overseas mail that had been detected by the District Censor and that, in a single sitting, they had broken the dot code in which, through a forwarding address in Sydney, an English knight residing in China was exchanging most torrid and explicit love letters with a married woman in Melbourne. (It is not stated whether the District Censor adopted the academics' suggestion that, prior to delivery, they annotate the originals in the same dot code with 'Careful! — The Censor').

Similar preparatory steps were taken by the Royal Australian Navy (RAN) in mid-1940 when Commander T. E. Nave RN, an experienced cryptographer and Japanese linguist at the Far Eastern Combined Bureau (FECB), Singapore, returned to his home in Australia on sick leave. When a medical survey found him unfit for tropical service, the Admiralty approved his temporary attachment to the RAN to work on Japanese signals intelligence.[4]

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2 NAA: A816, 43/302/18, Cryptographic Organization in Australia.

3 NAA: A6923/3, 37/401/425, [Special Intelligence Section].

4 Captain J. Foley to Secretary Defence Committee, 12 November 1941, 'Special Intelligence Organisation' (NAA: A816, 43/302/18).

In response to the Australian request for advice, the British Government replied on 15 October to the following effect: (i) It agreed that it would be inadvisable to establish any large-scale organization which would duplicate the work done by the GC&CS and suggested that the RAN's small section under Nave, which was working in close cooperation with the FECB, be expanded; (ii) It was prepared to assist with the training of cryptographers; (iii) It would welcome Australian assistance in the interception of Japanese fixed commercial stations.

The British reply was considered by the Defence Committee at its meeting of 28 November where it was decided that the CNS should further examine the matter and take up with the CGS and CAS the question of appropriate training.[5]

In the months immediately following, the role of Nave's organisation appears to have been to assist FECB by traffic analysis and decryption of Japanese naval traffic in the Japanese Mandated Islands. Incidental to discharging this function, it provided the Dutch signals intelligence department at Bandoeng with Japanese diplomatic and consular intercepts in exchange for Mandated Islands traffic. Nave requested that FECB provide him with 'copies of the Consular and Diplomatic codes, and of any other codes regularly intercepted in Australia'. As late as March 1941, however, FECB were refusing to do this, on the grounds that 'the Consular and Diplomatic codes are now so complicated that a large staff of experts is required to obtain results, and that anything of interest read from this or other codes or cyphers would be forwarded to the [Australian] Naval Board'.[6]

The engagement of the Sydney University group for full-time duty

On 2 May 1941 a conference was convened at Victoria Barracks, Melbourne, to consider the future employment of the Sydney University group. Those attending were: for the navy — the Director of Naval Intelligence (DNI) and Nave; for the army — the Director of Military Operations & Intelligence (DMO&I), the Signals Officer in Chief, a GSO II (Military Intelligence) and a Captain (Military Intelligence, Cypher Security); for the Sydney University group —Room and Treweek. The conference reported that:

> (a) The breaking of Japanese diplomatic codes could be regarded as a feasible proposition.
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> (b) It was desirable that a section for this purpose should be organised — it being considered that existing facilities at Singapore may not always be available.

5 NAA: A816, 43/302/18.

6 Minute by Director of Signals Communications, RAN, 19 March 1941 (NAA: MP1185/8, 1937/2/415).

(c) The present strength of this section should be four officers and three clerks additional to the existing Naval nucleus organization. One officer to be a competent Japanese linguist.

(d) The section should be of a Combined Service nature, for the benefit of all Services although initially the work would mainly be concerned with naval codes.

In the course of the discussion Room and Treweek indicated that, if required, the university would probably be prepared to release them (and Lyons also) for full-time service in Melbourne after the end of first term.

Following the conference the Acting CNS on 15 May addressed the CGS as follows:

1. Consequent upon the interception by Army personnel of Japanese consular and diplomatic messages, it becomes necessary to consider the means of dealing with these messages. It is desirable that they should be handled in Australia if possible, in order to obtain intelligence and also in order to avoid relying permanently on Singapore for this work. This additional task would be beyond the capacity of the small naval section and would throw an additional strain on the Bureau at Singapore.

2. At the request of the DMO&I, Paymaster Commander Nave has examined the work performed by the Army Cypher Group from Sydney University, and reports that some of the members would be most useful in dealing with the Japanese diplomatic messages and other similar work.

3. Before embarking on this work, it would be necessary to secure the services of a competent interpreter for translation … .

4. If [the latter] can be obtained, it is recommended that three members of the Sydney University Cypher Section be sent to Melbourne to work with Paymaster Commander Nave. It is considered that each should be provided with a suitable clerical assistant.

5. Before commencing Consular work in Australia, it would probably be necessary to send two of the staff to Singapore for a short time to study the latest methods.

6. Would be glad to know your views on these proposals.

On 3 June the CGS tendered to the Minister for the Army (P. C. Spender) the letter from the CNS together with a request for 'authority to call up for full-time duty with pay and allowances of Major' up to three of the Sydney University group. This, Spender approved the same day.

Treweek, who was already a Major in the Citizen Military Forces commanding a field battery in the Sydney University Regiment, duly reported at the Navy Office, Melbourne for full-time duty on 19 June. Engaging other members of the group, however, proved more difficult. The university argued that, for the professors, appointment to a rank of less than full colonel was inappropriate. This the DMO&I would not countenance. The Vice-Chancellor accordingly took the matter up directly with the Minister, representing that: (i) the rank of Major did not accord with the professional expertise and attainments of a Professor; (ii) that the practice of the university with regard to members of its staff on war service was to make up the gap between their pay in the services and their former university salaries and that the difference between a Major's and a Professor's income was so great that this would impose a considerable burden on the university.

It was agreed that the professors and Lyons would be engaged as civilian experts at their existing salaries and that the university would undertake their superannuation contributions. Room and Lyons took up duty in Melbourne on 18 August.[7] On 1 September, Room and another newly enlisted member of Nave's organisation, Pay Lieutenant A. B. Jamieson were flown to Singapore for training at FECB[8] (Jamieson had resided in Japan since taking up Melbourne University's Mollison Travelling Scholarship in Japanese in 1934). They arrived back in Melbourne in November.

Attempts to find the 'competent interpreter' were not immediately successful. In April 1941, however, the British Foreign Office, at the request of the Australian Government, had despatched a member of the Consular Service on a tour of inspection to Portuguese Timor and to report on Japanese activities there. The Foreign Office chose for this assignment C. H. Archer, a senior officer who had served in a succession of consular posts in Japan and its territories since 1922 and who was proficient in both spoken and written Japanese. By direction, on the completion of his tour he flew on to Australia in May to pass on his impressions to the relevant departments in Australia.[9] During his meeting with the DNI in Melbourne the latter asked him whether, if the Foreign Office agreed, he would be prepared to join Nave's organisation. Archer was on leave between postings. On completion of his tour of duty as Consul at Tamsui in February he had been appointed Consul-General at Mukden to take up his duties there on the expiration of his accumulated leave. Recently, however, he had been informed that his posting to Mukden was likely to be deferred indefinitely in line with the Foreign Office's policy of ensuring that, if war broke out, a nucleus

7 NAA: A6923/3, 37/401/425.

8 Australian Commonwealth Naval Board to Chief of Intelligence Staff [Far East] 25 August 1941 (NAA: MP1074/8/1 'Outward Signals (B Category)', 3B, Serial 155).

9 For Archer's 40-page report on Portuguese Timor and visit to Australia in April–May 1941, see NAA: A981, TIM P9 & TIM P23.

of senior Japanese-speaking experts would continue to be available instead of their being interned by the Japanese for the duration. Archer welcomed the DNI's proposal and on 15 May both he and the CNS cabled the Foreign Office recommending it.[10] The Foreign Office agreed, in principle; but first it had a task for him in Tahiti. It was not until 21 January 1942 that he joined Nave's organisation.[11]

On 19 September the Secretary, Department of the Army, addressed a minute to the Secretary, Military Board that:

> The Minister notes … that on the 15 May, the Acting Chief of the Naval Staff in a minute addressed to the Chief of the General Staff stated that 'consequent upon the interception by Army personnel of Japanese Consular and diplomatic messages it became necessary to consider the means of dealing with them'.
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> In view of the fact that such diplomatic messages are generally immune from interference, the Minister desires to have a report as to the extent to which such action is being taken to intercept such messages and whether this action is in contravention of any international agreement, and in accordance with action similarly taken by the UK authorities or by Japan.

The Minister was promptly assured that:

> In general, the position is that diplomatic messages in secret cypher are sighted in Cable Companies' offices. Copies of these messages are secured and placed before the Special Section. Similarly, British or Allied messages sent from and received in foreign countries would be available to the foreign governments concerned. In any case, telegraphic or radio communications are not subject to diplomatic privileges … .[12]

Interception of the 'Winds' message

The implications of two circular telegrams despatched by the Japanese Foreign Ministry to overseas posts on 19 November were of such gravity, indicating the imminence of hostilities, that the intercepts were taken to the Secretary to War Cabinet (F. G. Shedden) to be shown to the Prime Minister. In the first of these the recipient was instructed urgently to nominate the mission best qualified 'in the event of the development of an emergency situation' to assume

10 NAA: MP1074/8/1, 2B, Serial 102 & 103.
11 Foreign Office List, 1947.
12 NAA: A9293/3, 37/401/425.

Japan's responsibilities of locally representing Italian interests. The second was the famous 'Winds – Set-Up' message instructing that the severance of communications with enemy countries would be indicated by inserting certain bogus weather reports in news broadcasts, e.g. 'West wind, clear' would signal 'Japanese–British crisis (including the invasion of Thailand or an attack on Malaya or the Netherlands East Indies)'. These two intercepts were delivered, on 28 November, by the Second Naval Member to Shedden, who immediately showed them to the Prime Minister.

On 2 December, in a circular telegram, the Japanese Ministry of Foreign Affairs instructed Melbourne and certain other posts to burn their telegram files and all codes except 'O' and 'TSU' and to signal the word 'HARUNA' to signify completion. This intercept, together with the intercept of Melbourne's 'HARUNA', was delivered to Shedden on 4 December.[13]

The code words 'West wind, clear' were not transmitted until four hours after the bombing of Pearl Harbor. They were picked up by one of Nave's linguists on listening watch, Lieutenant I. L. Lloyd (Australian Intelligence Corps) and phoned to Shedden at 8.15 am on 8 December EST (2215 hours on 7 December GMT) — 1¾ hours before similar messages were intercepted in the United States.

Trendall's diplomatic section under RAN control (December 1941 – November 1942)

On Japan's entering the war, Nave's organisation was promptly reinforced. The last of the Sydney group, Trendall, arrived for full-time duty on 12 January 1942.[14] Archer and another senior officer from the British Consular Service, H. A. Graves, were seconded to the organisation from 21 January and 1 February respectively.[15] On 28 February, Private R. S. Bond, who had just graduated with First Class Honours in Greek and Latin in Trendall's Classics Department in December, was marched in from the ranks of the Sydney University Regiment. He had just turned 19. He was promptly promoted to Corporal so that he could afford to lodge at the same boarding house as Trendall in St Kilda Road and continue their work after hours.

By the end of March, when the entire organisation moved to its new site, the Monterey block of flats in Arthur Street, they had been formed into a discrete sub-unit within Nave's organisation, headed by Trendall, working exclusively

13 NAA: A5954, 558.
14 NAA: A6293/3, 37/401/425.
15 Foreign Office List, 1947.

on Japanese diplomatic traffic. (Room, Treweek and Lyons, however, remained directly under Nave, working on naval traffic). At Monterey they were soon joined by one of GC&CS's cryptographers and linguists, A. R. V. Cooper, who had been with FECB since 1938. Cooper and Lieutenant Norman Webb's small Special Wireless section had volunteered to remain in Singapore to monitor the Japanese air attacks. They, together with Cooper's pet gibbon, Tertius, were evacuated to Australia (via Java) on one of the last escape ships, leaving Singapore on 11 February.[16] In later years Trendall had this to say of Cooper: 'There was a somebody — a really good linguist … . For intelligence purposes he was very much at the top of the tree — a very fine brain'.[17]

Two trainee cryptographers were recruited during 1942. Gunner J. C. Davies[18] was plucked from the Artillery Training Depot in June. Like Bond, he had secured First Class Honours in Trendall's Latin III class at the 1941 annual examinations. Dr Elizabeth Sheppard, a resident tutor at the University Women's College, whose specialty was English Language and Literature, arrived in August.[19]

A single-bedroom top-floor flat on Monterey's north staircase overlooking Arthur Street was the Section's home throughout 1942, the cryptographers (Trendall, Cooper and Bond) installed in the bedroom; the linguists (Archer and Graves) and the three clerks/typists, in the lounge.

Trendall's Section operated under RAN control until transferred to the army in November 1942. The only high-grade cyphers in use by the Japanese Foreign Ministry at that time were FUJI and JAA (i.e. PURPLE). The Section's principal tasks throughout this period were, therefore, the solution of FUJI intercepts and the forwarding of PURPLE intercepts to GC&CS for solution (GC&CS had been operating a replica of the PURPLE machine since early 1941).

The transfer from the RAN to the Australian Army

In October 1942, Archer, Graves and Trendall were informed that: (i) It had been decided that Nave's organisation was to be absorbed into the US navy

16 M. Smith, *The Emperor's Codes* (London: Bantam, 2001), pp. 102–03.

17 Cooper and Tertius at Hong Kong in early 1941 figure prominently in Emily Hahn's, *China to Me: A Partial Autobiography* (New York: Doubleday, 1944).

18 He was professor of French, University of Adelaide, 1971–87.

19 Sheppard's field was Old English and 15th century Scottish. The biographical chapter of her PhD thesis 'Studies in the Language of Bellenden's Boece' had recently been published in *The Chronicles of Scotland Compiled by Hector Boece*, vol. 1, Scottish Text Society, 3rd series, no. 15 (1941), pp. 411–61. She had also recently been awarded a Reinhardt Fellowship to pursue postdoctoral research in the United States. She was associate professor, English language, University of Auckland, 1963–72.

cryptographic unit operating alongside it at Monterey (FRUMEL — Fleet Radio Unit, Melbourne); (ii) Nave was being reposted elsewhere and all civilian personnel would no longer be required; (iii) The Diplomatic Section would be disbanded and the solution of diplomatic traffic concentrated at Washington and London, who would pass on to Australia any messages of concern.[20]

On 22 October, Archer and Graves visited the General Staff Officer Intelligence (GSOI) in the Directorate of Military Intelligence (DMI) at Land Headquarters, Lieutenant Colonel Robert A. Little, and apprised him of these decisions. They urged on him that, rather than the disbandment of the Diplomatic Section, Military Intelligence should take it over. According to their experience, the prompt and effective decryption at London or Washington of messages intercepted in Australia would be quite impossible — principally because of garbling and delays resulting from retransmission. In addition, Archer was most critical of the process by which the decision had been reached: 'When this new proposal came up, the working out of its practical applications was entrusted to a Committee consisting of two Commanders in our Naval Service and one Lieutenant Commander in US Navy. The future of the diplomatic traffic was summarily decided over the heads alike of Foreign Office officials of superior rank, and of the Director of Naval Intelligence himself.'[21]

Trendall and Cooper visited Little the following day and made similar representations.

Little addressed a memorandum to the Director of Military Intelligence supporting their proposal:

> My feeling is that since the advent of the USN Crypto Section under Lieutenant Commander Fabian, Army have not been treated fairly as, although Army provided about 1/3 of the staff and all the intercepts, all Army was allowed to have was a précis of the diplomatic material. More recently we have been permitted to read through in the presence of a N[aval?] O[fficer?] some of the diplomatic messages that Commander Nave was good enough to pass us. These were taken away as soon as read.

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20 FRUMEL's decision not to cover diplomatic traffic would have followed naturally from the interdepartmental agreement reached in Washington between the army and navy departments on 30 June 1942 regarding the rationalisation of cryptographic activities between the two departments. Previously, both departments had covered diplomatic traffic on a cooperative basis. Under the agreement it was allocated exclusively to the army (US National Archives, 457, SRH-200, 'OP-20-G File on Army/Navy Collaboration 1931–45', pp. 44–46). The disbandment of Nave's section and FRUMEL's decision not to cover diplomatic traffic were included in the terms of the bilateral UK–US 'Holden Agreement' negotiated at that time (R. Erskine, 'The Holden Agreement on Naval Sigint: The First BRUSA', *Intelligence and National Security*, vol. 14, no. 2, Summer 1999).

21 Archer to Little, 24 October 1942 (NAA: A6293/3, 37/401/425).

> I am of the opinion that this diplomatic group should be continued for the benefit of the Commonwealth Government and the Forces but think it would be best to keep it under Army away from Central Bureau as, if under Central Bureau, it would again be under GHQ, SWPA [South West Pacific Area] control who might act similarly to USN.

(In explanation of the preceding, it should be noted that MacArthur's General Headquarters (GHQ) was, essentially, an American organisation responsible to the US Chiefs of Staff, while 'Army' despite its temporary and misleading title, 'HQ Allied Land Forces SWPA (LHQ)', was none other than HQ, Commander-in-Chief Australian Military Forces — the Australian equivalent of the War Office).

The CGS concurred and, on 30 October, wrote to the CNS informing him that Military Intelligence would take over the Diplomatic Section:

> From information received, it would appear that it is intended to discontinue the Special Intelligence Section dealing with Diplomatic traffic, which is at present operating at 'Monterey', and that the civil and army personnel which the Army has provided for the purpose will not be required thereafter.
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> It is understood that in your view the information obtained from this source is of minor value, nevertheless it has been in the past of great interest to the Army on the broad strategic plane and it is considered that it may well prove of even greater interest in the future.
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> For this reason, it is my intention that the Section should continue to function because —
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> (i) intercepts obtained here are frequently not obtained elsewhere;
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> (ii) delay would occur if intercepts were re-transmitted to London or Washington as they would be inclined to deal with intercept traffic from areas that would concern them intimately before attending to material from more distant fields which delay might, occasionally, be dangerous;
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> (iii) the danger of corruptions occurring during transmission to London or Washington would make successful treatment still more difficult.
>
> It is therefore desired to continue the work, and it is proposed to return the personnel to MI at LHQ.

On the same day, Archer, with Little's concurrence, despatched the following cable to the Foreign Office:

> Presumably you will have been informed that under a new arrangement reached between London and Washington American Navy is absorbing

naval section of Australian Special Intelligence Unit. No civilian personnel will be used and our services with Naval board are therefore redundant.

Australian Army which already supplies much of personnel and whole of traffic is most unwilling that diplomatic section in which Graves and I have been concerned should be abandoned and General MacArthur concurs. If therefore our services remain available Army will take over and improve diplomatic section.

Following points are submitted for your consideration:

(a) For several months series of enquiries from London mainly on economic subjects as well as India has seemed to prove that much material was collected here which London did not receive from elsewhere.

(b) Alternative system of relaying all texts to London has so far proved dismal failure since additional corruption acquired en route impairs and frequently destroys value of material.

(c) Statistics show that thanks to services of extremely skilful local expert we have during past three months supplied to London and Washington nearly twice as many solutions of recurrent technical problems as we have received from both countries combined. This presumably has enabled them to handle some material which otherwise would have been useless.

On evidence available here therefore it seems that unit is serving imperial as well as Australian interest and since improved Army machinery has enormously increased volume of traffic received since mid-September we hope usefulness may substantially increase. In particular we feel that improved local organisation should give us chance of making useful contribution to breaking of new Great East Asia system shortly coming into force … .

If you concur we suggest that formal application for our services to be made shortly by Australian Army be approved … . [22]

The Diplomatic Section moved from Monterey to Land Headquarters at Victoria Barracks on 27 November 1942 and, from that date, was responsible to the CGS through Little (whose appointment was renamed Assistant Director of Military Intelligence — ADMI — in March 1943). There it was housed in its own secluded and secure area — the small, top floor of 'A' Block overlooking St Kilda Road, where it remained for the rest of the war. At the time of the move it acquired

22 NAA: A6923/3, 37/401/425.

three more clerical staff and two additional translators — Miss Mavis Tilley (one of Nave's translators) and L. R. Oates (a civilian, aged 17, who had just completed the 12-month, full-time language course at the Military Intelligence Japanese language school at the District Censor's Office). Oates remained with the Section until November 1943 when, on reaching military age, he enlisted in the AIF (Australian Imperial Force).

On 3 January 1943, one month after the move, Archer tendered to Little a report on the work of the Section. He noted that during the previous half year the number of messages in high-grade cyphers received by the Section had increased as follows: June, 178; July, 211; August, 155; September, 254; October, 466; November, 408; and, December, 445; i.e. from a daily average of 6 to one of 15.[23] As a consequence of Cooper's recent return to England, the Section now had only two accomplished cryptographers to exploit this increasing volume of traffic — Trendall and Bond. Trendall was a cryptographer of outstanding quality and he had recently reported that Bond (now a Sergeant) was now no less expert than himself. These two were under intense pressure, working seven days a week, often until 11 pm. It was therefore essential that Trendall be authorised without delay to seek out another member with Bond's potential 'from that small circle of bright young men of whom he has personal experience'. It was also essential that Bond be promoted to commissioned rank — not only in recognition of his skills but also to enable him to deputise for Trendall during his absences.

Archer's recommendations were adopted. For the new member, Trendall's choice fell on E. S. Barnes who, some weeks before at the age of 18, had graduated at Sydney University, carrying off the prizes in Mathematics and French. He had been brought to Trendall's notice by Room (his Professor) and by Bond (his senior by one year at Canterbury Boys High School). Corporal Barnes duly joined the Section (and Trendall and Bond at their boarding house) in February. It immediately became apparent that he did, indeed, possess the cryptographic flair and, in mid-March, Trendall was able to return to Sydney University for what was expected to be 'an extended period', leaving Lieutenant Bond (commissioned on 11 March 1943) in charge. Barnes was promoted to commissioned rank on 10 July 1944.

23 Cf the considerably higher figures reported in 52 Section's Monthly Traffic Records for November and December 1942 — 1,763 and 1,654 respectively. Perhaps Archer's figures exclude not only low-grade traffic (such as LA) but also the traffic in those high-grade cyphers on which his Section was not working, but merely forwarded to GC&CS for solution, i.e. PURPLE and Attaché traffic. By the end of 1943 Trendall was forwarding to GC&CS about 800–900 military and naval attaché messages per month (NAA: A6923/3, SI/2, Military Intelligence file, 16 June 1942, 'Y Organization in Australia', folio 158).

London's anxieties

While the Section was under Naval control its communications with GC&CS had passed through RAN channels, its outwards messages being despatched on a Typex machine at Monterey using the appropriate secret settings/drums provided by GC&CS. On the Section's transfer to LHQ, its outwards signals to GC&CS were despatched by the most secure means available to the army, the LHQ (LANDFORCES) — War Office (TROOPERS) circuit, using the one-time recyphering pads provided by the War Office for that circuit. This did not meet GC&CS's security standards; it meant that, between despatch and delivery, the plaintext of the signals could be read by the general cypher sections at both LANDFORCES and TROOPERS. The reaction of GC&CS was that it could have no dealings with strangers — Military Intelligence at LHQ — who were unindoctrinated and had not subscribed to GC&CS's rigorous and elaborate directions regarding the secrecy, transmission and distribution of intercepts and intelligence derived from them. On 3 January 1943, Archer informed Little that no signals had been received from GC&CS since 26 November and that requests for the resumption of communications had not been acknowledged.[24] Eventually, on 10 March, the following message from the Director GC&CS was conveyed to the CGS through the Commanding Officer of the British Army Liaison Mission in Australia:

> He [the Director] is greatly concerned about the handling by the Australian Military of ULTRA diplomatic material and, as he is receiving requests for assistance, asks me to ascertain the working arrangements of the Diplomatic Section under the Australian Military authorities. His anxiety particularly concerns the control of distribution of material and the number of individuals who have access to it.
>
> Provided he can receive the assurances for which he asks me, that the proper security is fully assured, he will co-operate fully.

This was followed the next day by a list of the specific undertakings required — chiefly acceptance of the regulations regarding ULTRA telegrams and Special Intelligence in force throughout British theatres of war and the US navy and an assurance that there would be no 'political interference' in handling such material. To this the CGS gave a prompt reply, accepting each of the undertakings.[25]

Later in the month the Army's most senior Signals Intelligence officer, Lieutenant Colonel A. W. Sandford (Officer Commanding, Australian Army

24 Ibid.
25 NAA, A6923/3, SI/10.

Section, Central Bureau, GHQ SWPA), whose relations with GC&CS were already firmly established, was flown to England to confer with GC&CS on this and other matters. At a meeting with A. G. Denniston, Head of its Diplomatic and Commercial Section, and his officers on 30 April, it was agreed that:

> (i) GC&CS would pass to Australia all relevant cryptographic information on Japanese diplomatic codes (including microfilms of complete information on FUJI and X) and translations of London intercepts thought to be of interest to Australia — with special reference to Timor, the Greater East Asia area, and general Pacific strategy;
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> (ii) Australia would cease sending summaries, would send cypher texts of messages of interest to GC&CS (reserving the right to send translations where preferable), and would continue to send *at once* all B [i.e., PURPLE] machine traffic and any other unidentified diplomatic traffic intercepted by them (e.g. NE);
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> (iii) On receipt by the Australian Army of special Typex settings, communications would be transferred from the Navy to the Army and passed from LANDFORCES to TROOPERS (MI8);
>
> (iv) Sandford would arrange with GC&CS a revised allocation of intercept coverage (with particular reference to traffic between Berlin and Tokyo, where UK stations experienced considerable difficulty).[26]

The very scattered and fragmentary records that survive suggest that the extensive daily exchange of raw material that this envisaged continued and expanded. For example, on 3 April 1944, Sandford relayed to Little the following signal from GC&CS: 'Reference Little's WWW78. Japanese texts or summaries about Portuguese Timor in JBC (the Foreign Office Cypher Book) or other systems, but excluding JAA, will henceforth be sent to you for your limited circulation in the north. Series JAA will be sent in ABC series just begun'.[27] In April 1944 the Section was sending GC&CS, in addition to Attaché traffic, between 4,000 and 5,000 groups of diplomatic traffic daily, consisting of selections from the daily lists of intercepted messages, all Moscow to Tokyo traffic and all Greater East Asia Ministry (GEAM) commercial traffic.[28] Apparently, reception conditions for traffic between Tokyo and its Embassy in Russia were better in Australia than at GC&CS and its overseas outstations. For example, Bond, on 25 May 1943, signalled 52 Section as follows: 'Both quantity and quality of traffic to and from RTZ [i.e. Kuibyshev] during the last fortnight has been most pleasing. Hope flow

26 Interception of Berlin–Tokyo traffic was also difficult in the United States: 'We eventually found we could get best coverage of the Berlin–Tokyo circuit at Corregidor' (L.F. Safford, 'Brief History of Communications Intelligence in the United States', US National Archives: 457, SRH–149).

27 NAA: A6923/3, Military Intelligence file 16/6/289, 'Central Bureau — Administration of', folio 75.

28 NAA: A6923/3, SI/10 Military Intelligence file 16/6/328, folio 88.

will continue from this source as we seem to intercept more of it than anyone else'.[29] For a period in early 1944, when reception conditions at Mornington were unfavourable, the watch on RTZ was delegated to a section of Australian Special Wireless Group located elsewhere, with 'considerable success'.[30]

July 1943 — The Japanese Foreign Ministry changes its codes

Since its inception, the principal function of the Section was to decrypt and process the telegrams sent in the code FUJI that were intercepted in Australia and New Zealand. In February 1943 the Section consisted of: on the cryptographic side, Trendall, Bond, Barnes and an assistant cryptographer; on the language side, the two British Consular officers (Archer and Graves) and two locally engaged translators, and a clerical staff of about five. After the recruitment of Barnes to fill the gap caused by the recall of Cooper, Trendall was able, in March, to take leave to return to Sydney University. On 1 July, however, the Japanese Foreign Ministry replaced FUJI with three new recyphered codes. Next, on 21 July a new transposition cypher was introduced for communications between Asian posts and the GEAM. Then, on 20 August another high-grade cypher, BA, was introduced by the Ministry for Foreign Affairs. Thus, the Allies were suddenly deprived of a considerable proportion of Japanese diplomatic traffic — until such time as their cryptographic organisations managed to break the new systems and laboriously establish their constituent code groups. In this vital task GC&CS urgently sought the Section's assistance. The immediate response was to recall Trendall to full-time duty on 9 July and to postpone for some weeks Graves's transfer to the Department of External Affairs (to become Adviser on Political Warfare to the Minister) and his replacement by another Consular officer (H. R. Sawbridge).

The role of the Section in breaking these new systems and establishing the new code groups is described in the report on Japanese Diplomatic Cyphers reproduced in Chapter 3. It was not until 13 June 1944 that Trendall could again be released to the university. He was back with the Section again from 4 August until 5 September, on which date he returned to the university for good.[31]

During 1944 Trendall was able to recruit and train three additional cryptographers. Private A. C. Eastway from the 2/3 Machine Gun Company at Merauke joined the Section in February. He had probably been brought to Trendall's attention

29 Australian War Memorial (AWM): 52, 7/39/19.
30 Little to CO Aust. Special Wireless Group 2 March 1945 (NAA: A6923/3, [DMI Message Traffic]).
31 University Archivist, University of Sydney to D.C.S. Sissons, 10 June 1998.

by J. W. Gibbes, his Classics master in his final year at North Sydney Boys High School in 1940. Private I. H. Smith (who had taken the exhibition at final honours in French language and literature at Melbourne University in December 1943) arrived in May. He also had been recommended to Trendall by Gibbes. In July, Trendall secured the transfer of Sergeant K. L. McKay from a LAA Regiment at Darwin. He had taken high distinctions in Classics in his second year at Sydney University when he enlisted in December 1941. The cryptographic section had now reached it maximum size and continued at this strength for the rest of the war.

Another translator, Warrant Officer II C. A. James (an Oxford classics undergraduate who had just completed the British army's Japanese language course at Bedford) arrived in May 1944. Later in the year Sawbridge and Archer were recalled to the United Kingdom and replaced by other Consular offices, E. T. Biggs in July and R. L. Cowley in December.

The raw material

In April 1942 a small W/T [Wireless/Telegraphy] Section of the Australian Corps of Signals was set up at Ferny Creek in the Dandenongs to intercept Japanese diplomatic circuits. In July it received reinforcements from 2nd Company GHQ Signals to bring it up to strength as a Special Wireless Section (Type B) and was named 52 Australian Wireless Section. It operated successively at Ferny Creek between April and August 1942, Bonegilla between August 1942 and November 1943 and Mornington between November 1943 and February 1946. Its sole task was intercepting Japanese diplomatic traffic for delivery to Trendall's Section (about 20 per cent by hand Morse by a direct landline, the remainder by a daily bag delivery). From the time of its move to Bonegilla it was the principal source of the Diplomatic Section's raw material and, after the latter's transfer to the army it was, with certain exceptions, its sole source of raw material.[32] 52 Section's all-ranks strength was 85, comprising one Captain, one Lieutenant, one Lieutenant (Australian Women's Army Service), one Company Quarter Master Sergeant/Company Sergeant Major, two Sergeants, seven Corporals, 72 Signalwomen/Signalmen (including seven Lance Corporals). Of the rank and

32 The principal exceptions were diplomatic traffic intercepted by the New Zealand cryptographic organisation and specific intercepts provided to the Diplomatic Section by GC&CS at the former's request. For a period from December 1942 the US army's 126 Signal Company in Brisbane were providing Trendall with copies of their intercepts of Japanese diplomatic traffic (Sandford to DDMI, 14 December 1942, NAA: A6923/3, 16/6/289). On occasion, when reception conditions at Mornington for a particular station or circuit were poor, the task of covering Japanese diplomatic traffic was undertaken by other Sections of the Australian Special Wireless Group — e.g. the Russian station RTZ in early 1944 and the low-power Far Eastern network R75 in February 1945 (ADMI to CO Aust. Special Wireless Group, 2 March 1945, NAA: A6923/3, [DMI Diplomatic Message Traffic]).

file, 52 were operators.[33] The unit operated 24 hours a day in four shifts using communications receivers of various makes (Kingsley, Hallicrafters, AWA and Philips) and an elaborate system of rhombic aerials set up on the Bonegilla racecourse. The operators kept watch on designated call signs and frequencies and were able to identify Japanese diplomatic traffic from the sending station's output by the originator and addressee designated in the preamble of each message (which, of necessity, was transmitted *en clair* and at hand speed). The text of the message was usually transmitted at machine speed. The operator recorded this on Edison wax cylinders and later replayed it at manageable speed and transcribed it.[34]

The Monthly Traffic Records that occasionally appear in 52 Section's war diary indicate the quantity and extent of the intercepts received by the Special Intelligence Section. An example is their record for May 1944 (see Annex 1, herein). It includes a listing of the stations from which traffic was received.

In the table that follows, I have shown the earliest and latest monthly totals available and those of two intermediate months. These figures, of course, include much material that the Special Intelligence Section did not read, e.g. naval and military attaché and JAA (i.e. PURPLE) traffic (all of which was forwarded to GC&CS) and messages in the low grade cypher LA (which were read only if specifically referred to in a high grade message).

Japanese diplomatic traffic intercepted by 52 Aust Wrls Sect:[35]

Originators and addressees

Country	Nov 1942	Feb 1943		May 1943		May 1944	
	From	From	To	From	To	From	To
Japan	1,000	828	817	1,351	1,318	1,108	1,621
Germany		1	195	101	421	817	315
Russia	2	125	79	293	243	623	266
Netherlands East Indies						424	602
French Indo-China	126	272	126	232	115	173	288
Thailand	231	218	186	88	60	84	50
Afghanistan	16	20	26	48	41	53	25
China (Occupied)		2	8		26	29	10

33 War Establishment III/38B/4, issued 31 May 1944 (NAA: A10908/1, 2, 'Report on Special Wireless Units (Signals) 1940–45').

34 ASWG Association to D.C.S. Sissons, 26 September 1994.

35 These figures are taken from Monthly Traffic Records occasionally appearing in the war diaries of HQ Australian Special Wireless Group (AWM: 52, 7/39/3) and 52 Australian Wireless Section (AWM: 52, 7/39/19), November 1942 and March 1943 and May 1943 and May 1944, respectively.

Country	Nov 1942	Feb 1943		May 1943		May 1944	
	From	From	To	From	To	From	To
Sweden	3	3	32	94	61	27	49
Philippines						9	2
Spain						1	9
Switzerland	122	83	23	85	81		45
France		6	44	22	16		26
Burma							16
Portugal				3	8		9
Vatican City							9
Italy	129	153	71	415	186		3
Hungary							3
South America	134	4	106	3	153		
Other (Call Sign YOM)					5		
Unaccounted for			2		1		
Total: Messages	**1,763**	**1,715**	**1,715**	**2,735**	**2,735**	**3,348**	**3,348**
Total: 5-Figure Groups	**145,101**	**126,645**		**212,723**		**268,219**	

The product and its dissemination

From the time of the transfer to the army, Archer produced a weekly Special Intelligence Précis of Japanese diplomatic intercepts, which the ADMI distributed to the following recipients: Commander-in-Chief Australian Military Forces, CGS, Director of Military Intelligence, Director of Naval Intelligence, Director of Intelligence (RAAF), Director of Military Intelligence (New Zealand), Director of Naval Intelligence (New Zealand), Central Bureau Brisbane, G2 GHQ SWPA, and Commander SWP Force (US navy).[36] All recipients were required to burn the précis after perusal and to sign a receipt stating that this had been done. It was distributed to the New Zealand recipients because there was close cooperation with the New Zealand signals intelligence organisation, which provided Australia with the cypher texts of any Japanese diplomatic telegrams that it intercepted.[37]

36 Northcott to Dewing 16 June 1943 (NAA: A6293/3, 37/401/425).
37 Undated note, Archer to Little (NAA: A6293/3, 37/401/425).

Initially, the Australian Department of External Affairs was not a recipient. This is surprising; in the United Kingdom it was the practice of GC&CS to pass on an intercept, under the strictest conditions of secrecy, to those civil departments that it might concern.[38] And, in this manner, some intercepts reached External Affairs in Canberra via the Dominions Office, introduced on each occasion by the well understood formula 'Information available from a secret but entirely trustworthy source'.[39] In June 1943 the content of a telegram despatched by the Japanese Ambassador at Kuibyshev on 14 April reached External Affairs by this route. In it, the Ambassador reported that he had heard from a diplomatic colleague that William Slater, the Australian Ambassador at Kyibyshev, was returning to Australia for good the following day because he had found that he was making no headway against Russian officialdom. The Domions Office passed this on to the External Affairs Officer in London, together with the information that the message had been intercepted at Melbourne.

When this became known to the Secretary of the Department of External Affairs, W. R. Hodgson, he immediately called on Little and enquired why the information had not been passed to him direct. In replying, Little laid stress on the danger to the source should it become known, as it might be if it came to the notice of a Minister. For this reason, he said, it was not possible to provide Hodgson with the information. Hodgson then intimated that if such information were not made available he would have no alternative but to take the matter up officially. Little thereupon promised to refer the matter to the CGS.

In a letter to Hodgson dated 14 June the CGS proposed the following solution, which Hodgson accepted:

> You will be sent a copy of the Special Intelligence Précis issued weekly on the understanding that the précis is regarded as being for your own personal information and is to be destroyed by fire immediately after perusal.
>
> The contents are to be used as background information only. Where you consider any information contained in the précis vitally affects Australia

38 For example, among the 41 GC&CS intercepts of Japanese diplomatic telegrams for the period 21 November 1941 – 22 December 1941 that were later tendered to the Clausen Investigation (US 79th Congress, *Joint Committee on the Investigation of the Pearl Harbor Attack*, Hearings, part 35, exhibit 8) a typical distribution had been: Director GC&CS (3 copies), Foreign Office (3 copies), Political Intelligence Division, Admiralty, War Office (3 copies), India Office (2 copies), Colonial Office, Air Ministry, Ministry of Economic Warfare (2 copies), Sir Edward Bridges, and Dominions Office.

39 For example, in this manner the Australian External Affairs Officer in London was able, on 9 January 1940, to cable to the Department in Canberra summaries of telegrams from the Japanese Minister at Lisbon dated 24 November, 4 and 22 December and his Foreign Minister's replies of 21 and 30 December regarding Japanese plans to apply pressure on Portugal in order to secure oil concessions in Timor (NAA: A981, TIM P20).

> and should be disclosed to the Minister, I would be glad if you could get in touch with me so that the paraphrased edition of that particular portion of the document might be made available.
>
> I will instruct the Intelligence Branch to bring under my notice specially any matters of this nature which should be brought officially to the notice of your Department so that by this means we will endeavour to keep you informed officially apart from our present arrangements.[40]

Eight months later, on 3 February 1944, Sandford, from Central Bureau, Brisbane, informed Little that arrangements had been made for Hodgson to receive texts or summaries of telegrams of interest to Australia intercepted by other partners in the cryptographic network:

> I have just received a personal signal passed by the DMI, War Office from the Director GC&CS. He states that the Foreign Office have consulted the American authorities and have agreed to send to me texts or summaries of Japanese highest grade messages for showing to the Australian Department of External Affairs when the interests of that Department are directly concerned.
>
> The messages are to contain the phrase 'Pass to Archer', and Archer is to be made responsible for passing this material to Colonel Hodgson. London insist that Hodgson should be reminded of the conditions of security which were enjoined on him last July. They state that no further distribution, not even to Central Bureau, should be given to these messages which are only intended for Hodgson.
>
> They suggest in a final paragraph that Archer should make it clear if necessary that he is not in a position to discuss the political implications of the messages.
>
> I shall therefore send the messages when they arrive by safe hand means 'Most Secret and Personal' to Archer care of you, so that he will be the only people [*sic*] at LHQ to whom they are available. I should think this should meet London's requirements.[41]

Surprisingly, distribution of the précis to US recipients ceased in April 1944. On 29 March Sandford informed Little that:

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40 Northcott to Hodgson, 14 June 1943 (ibid.).

41 Presumably after May 1944, when the Melbourne Section acquired its own cypher section and Typex machines, for which GC&CS provided its designated settings, such intercepts were dispatched by GC&CS to Archer direct and not through Sandford.

(a) London has requested that we no longer supply diplomatic Special Intelligence to United States authorities in the South-West Pacific Area and they state that this request emanates from G2 (Special Branch) Washington.

(b) They also specially request that political intelligence contained in these and the UKBJs be not discussed by Australian recipients with their United States counterparts.

As a result, G2 GHQ SWPA and Commander SWP Force (USN) were promptly excised from the distribution list of the Special Intelligence Précis.[42]

The content of the intercepts

This is dealt with in the section of the report entitled 'Intelligence Derived from the Messages' (see below). On this, one is little able to elaborate; for the records of the Section systematically and painstakingly maintained in its own office appear to have been destroyed in their entirety. These included: (i) the leather-bound foolscap register (dubbed by Trendall 'The Koran') into which the particulars of every intercept was entered; (ii) the file of every intercept received (including the message form filled in by the telegraphist, and, where decrypted, the cryptographer's work sheets and the typed translation); (iii) a file of the weekly précis; (iv) a person and subject card index of the contents of all intercepts translated; (v) files of the Section's inwards and outwards correspondence and signals.

The Department of External Affairs appear scrupulously to have fulfilled their obligation to burn on perusal each document received from the Section.

The recipients of the précis appear to have done the same. Of the copies received by G2 HQ SWPA, only one, No. 4, for the week ending 21 December 1942, escaped destruction. It has found its way into the MacArthur Archives at Norfolk, Virginia (Box 60, Typescript 5 pp). We have, however some indication of the contents of No. 13 (22 February 1943) to No. 45 (22 November 1943) of the précis; G2 SWPA, when tendering these to the Chief of Staff SWPA for his perusal, attached to each a one-page 'brief' of its contents, and these have survived among the wartime records of the US National Security Agency.[43] Two typical examples are reproduced in the following pages.

42 NAA: A6293, 37/401/425.

43 US National Archives: 457, SRH-307.

G.H.Q. South-west Pacific area, Checksheet
From: G-2 To: C. of S. Date: July 9/43
Brief of Special Intell. Precis No.32, July 8, 1943

Note the following items:

Russo-Japanese Negotiations: The question of American air bases in Russia is still alive; Sato fears Russia will demand Tokyo's assurances that Germany will not be granted submarine bases in Far Eastern waters, and he discusses the dangers of such grants: German subs would surely attack Soviet shipping in order to bring Japan into war against Russia.

Prime Minister Tojo: Extraordinary secrecy surrounding itinerary and schedule of Tojo's tour of occupied territories suggests Japanese suspicion concerning Admiral Yamamoto's death. (Comment: Central Bureau's reports since 1 July indicate the Japanese have introduced new W/T security measures).

Shipping: A Bangkok message indicates no shipping available for shipping of cereals from Siam to S. China.

Europe: Jap Minister in Budapest does not expect much action on Eastern front this year, nor a European Second Front. He admits that grounds for optimism are few, but expects a stalemate rather than a German defeat. He also argues that England is playing a deep game by seeing the exhaustion of Russia as well as the destruction of Germany.

Japan's Outlook on the War: [About 17 characters expunged by NSA] furnish a most interesting insight into past and future Japanese aims. It is recommended that this section of the Precis be read in detail. Significant items: original Tokyo war aims; attitude toward Russia; food and shipping situation; a/c and pilot losses; damage from Tokyo raid; policy on treatment of captured airmen; strained Army–Navy relations after war reverses.

V.S.M-S [presumably Colonel Van S Merle-Smith]

G.H.Q. SOUTH-WEST PACIFIC AREA, CHECK-SHEET
From: G-2 To: C. of S. Date: 23 Oct '43
Brief of Special Intell. Precis No.41, 14 October, 1943

Note the following items:

Italy: The Italian diplomats in Greater East Asia have failed to rally to the establishment of the Fascist Party, resulting in the Japanese Ambassador [sic] having no dealings with them. Japan's decision is still to hand over all Italian extra-territorial rights in China to the Nanking Puppet Government.

Philippines: Raul Jose P. Laurel, President Designate, and Bargas Jorge Vargas, head of prospective Administration, have been summoned to Tokyo; also, they have been notified of Japan's decision to grant independence. Shozo Murata has been appointed Japanese Ambassador to the Philippines and will conduct negotiations for a formal treaty.

French Indo-China: Allied air raids cause considerable damage on port of Haiphong. Japan is trying to purchase the newspaper 'La Depeche' for propaganda; the French appear reluctant on the matter.

Siam: Pi-bun claims that his health will prevent him from attending the Greater East Asia Conference as Chief Siamese delegate. Pi-bun has proposed to send a deputy, likely Vichit, who was lately Foreign Minister, and is now Ambassador Designate to Japan. The transfer of 'new territories' to Siam has been fixed for 18 October. In anticipation of air raids on Bangkok, the Japanese Ambassador asks that arrangements be made for insurance of Japanese property.

Inter-Axis Trade: Bangkok message, 6 October, states a German vessel will call at this place to purchase tin. The Germans want 1,000 tons; Japan's tin holdings total 1,747 tons. Purchase of Siamese rubber for October have been fixed at 250 tons for Germans, 750 for Japan.

Shipping: Hanoi, 13 October, of the two ships being constructed under naval contract, one was laid down 15 April and launched 9 October. the engines do not appear ready. Both vessels are the 20 ton class.

C.A.W. [presumably Maj.Gen C.A.Willoughby]

The report alludes, very briefly, to the high intelligence value of the intercepts of the telegrams exchanged between the Japanese Foreign Ministry and its Ambassador in Russia, Sato Naotake.

It seems that in its coverage of the Kuibyshev–Tokyo–Kuibyshev circuit, the Section was able to provide strategic intelligence of value. In this connection two preliminary points should be made. The first point is that, as we have already noted, thanks partly to its location, 52 Section's coverage of this circuit was successful. Several signals from Bond to 52 Section during the period February to May 1943 indicate that 52 Section were instructed to watch this circuit carefully, and that they were more successful in this than were GC&CS and its various outstations.[44] Indeed, it seems that GC&CS were in fact relying heavily on 52 Section for its coverage of this circuit. The figures in 52 Section's Monthly Traffic Records attest to this success.

Kuibyshev–Tokyo–Kuibyshev circuit

Messages intercepted by 52 Section February–July 1943

	Feb	Mar	Apr	May	Jun	Jul
Kuibyshev–Tokyo	125	114	152	293	374	363
Tokyo–Kuibyshev	79	163	192	243	273	262

The second point is that all the communications on this circuit appear to have been sent in cyphers that the Section could read — Kahn's statement that the Embassy at Kuibyshev was not equipped with a PURPLE machine appears to be correct.[45]

We know the content of some of these messages; some of them (intercepted by Washington and its outstations) are quoted in Washington's daily *Magic Summary*. It is likely that most, if not all, of those quoted there were also intercepted and solved by Melbourne. An example of this traffic is the Ambassador's long telegram of 26 February 1943, the full text of which is reproduced in Washington's *Magic Summary* No. 344 issued on 5 March. One can be confident that 52 Section also intercepted this. Their traffic log indicates that, for messages from Kuibyshev, 26 February was one of their good days — they intercepted 12 messages from Kuibyshev on the 26 February, followed by one on 27 February.[46] The telegram would have been sent in FUJI and, according to the report, by May 1942 the Section was able to read virtually all the FUJI traffic it received. Below is the telegram in full, as reproduced in the *Magic Summary*.

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44 AWM: 52, 7/39/3, Trendall to Walker, 10 February 1943, 12 February 1943, 6 March 1943; Bond to Walker, 16 March 1943. AWM: 52, 7/39/19, Bond to Walker, 20 April 1943, 21 April 1943, 25 May 1943, 28 May 1943.

45 D. Kahn, *The Codebreakers* (New York: Macmillan, 1967), p. 446.

46 In light of the time difference between Kuibyshev and Melbourne, the message intercepted on 27 February could also have been sent on the previous day.

Kuibyshev to Tokyo 26 February 1943

What the Russians have done to the Germans this winter has astonished everyone. Whether the Russians can continue their headlong advance for three or four weeks more until the middle of March defies conjecture, but everything up until February 20, about which I have already wired you, indicates that this is a possibility. The course of the war between Germany and Russia naturally has great bearing on the battle of Greater East Asia. That is why I venture to express to you my very frankest feelings, and I hope that my Government will not fail to consider them.

1. It is problematical whether the Germans will stop in the Ukraine at the Dnieper line, or whether they will flee beyond the border, form a line and come back this summer as they did last. Some say they can and some say they can't, but I will tell you my frank opinions. I personally am pessimistic. The Germans have to think about the war in North Africa and I don't think they can afford to waste too much of their strength in this dim battle of the East. I think that they will, rather, get out of the Soviet Union and then make a truce. Germany lacks men, materials, and oil, so I believe that she will concentrate on Western Europe and will strive to save North Africa, all the while continuing her aerial and U-boat campaign against British and American ships.

2. The fall of Stalingrad caused Germany to propagandize the danger of the Bolshevization of Europe. That was, of course, to frighten England and the United States, and this prospect, to tell the truth, is a real danger. I think it may be quite true that in their hearts England and America have both begun to fear the dread strength of the Soviet. But I do not think they will let up on the Reich, nor do I believe that they will forsake the Soviet, refusing her aid. Nevertheless, facing what they consider the peril of Bolshevism, they must be in quite a dilemma.

Of course, I do not know, but I think it hardly likely that after the Soviet forces chase the Germans beyond the borders they will pursue them far into the Reich. Stalin's various statements indicate that they will not. I do not mean to say that we can take every word that falls from Joseph Stalin's mouth as the gospel truth, and we have to make allowance for the possibility of his changing his mind, if it is to his advantage. Nevertheless, under the present circumstances in Europe, I doubt if Stalin considers it to his own advantage to see Germany exterminated. So rather than cooperate further with England and the United States, he might, quite possibly, let Germany turn on them and fight it out to the destruction of both sides. It would seem to me that after driving

Germany completely out of her borders, after retaking her cities, and being faced with the problem of reconstruction, the Soviet Union would be loath to have the Red Army go on and on.

In other words, I believe that when she gets back all the land she has lost, she will not try to annihilate the Reich. I think that she will let it go at that and turn to the task of rebuilding her nation.

3. That is how it seems to me the German–Soviet situation is shaping up. As soon as it becomes apparent that a German–Soviet peace or truce is imminent, England and the United States will, of course, do their level best to prevent it. However, I think there is every likelihood that the Russians will stop at the border. I already seem to perceive a lack of interest throughout the land of the Soviets as to what happens in Western Europe, and I doubt if Russia will continue her blows against Germany for the sake of the Anglo-Saxons. Thus, if the Kremlin adopts an entirely new policy, there will be no point for England and America to try to sway her. As soon as Russia decides just what to do with respect to Germany, it will have a tremendous effect.

4. And again I must point out to you that these sudden changes in the European picture will certainly have a big effect on our own Empire. I tell you that the time has already come when we must reconsider our policy, which has been one of friendliness towards Germany, neutrality towards Russia and war on England and the United States. I know that in Japan there are those who agree that we must save Germany, because if we don't the Soviet will get so great that she will forever be a tremendous threat against us. They say that, while Germany is recouping, we ought to strike the Soviet immediately, breaking her suddenly, and make our Empire safe and stable.[47] But as for me, I tell you that the only course to follow is to do our level best to avoid a clash with Russia. As man to man, that is how I see it.

We Japanese can be expecting harder blows from America and England, so we ought to try to wean the Russians from them. I earnestly pray that we will not attack Russia, because, if we do, don't you know that she will join hands with the United States, establish a new front and ruin

47 As the Military Intelligence Service (MIS) analyst editing that number of the *Magic Summary* noted, this is probably a reference to the repeated advice from Oshima, the ambassador at Berlin, that Japan should come to Germany's aid by launching an attack on Siberia. Oshima again urged this on the foreign minister in a telegram dispatched on 26 January (see C. Boyd, *Hitler's Japanese Confidant: General Oshima Hiroshi and MAGIC Intelligence, 1941–45*, University of Kansas Press, 1993, pp. 62–65, 79–80).

us? That is a thought from which I recoil instantly. In spite of all the vicissitudes to which our Empire has been exposed, have we not, thus far, managed to keep level-headed in our policy toward Russia?

5. Let us consider our own Empire's relations with Germany and with Russia. Germany has already fought twenty months in Russia and in the end she has lost much and gained nothing. In the meantime, we got into war with America and England, but we still maintained good relations with the Soviet. Of course, if Germany had been able to whip the Russians, everything would have been better for Germany and for us, but that is like crying over spilt milk. Now Germany herself is so thoroughly demoralized that I personally do not believe that she can keep up her fight against the Soviet. So let us forget Russia for a moment.

We Japanese have one thing in common with the Germans: It is to our mutual interest to increase our prowess against the Anglo-Saxons, and, at the same time, wean Russia from their camp. Let Russia and Germany make peace if they will — because if Germany didn't have to waste so much of her strength on the Eastern front, she could help us out more against America and England. I don't need to tell you that.

As a matter of fact, since it has already been demonstrated that it would be futile for Germany again to try to shatter Russia and take her resources, I think we should take it upon ourselves to try to mediate for peace between those two powers, at the same time making clear to Germany that our Empire expects her to help us out even in Greater East Asia in our struggle against America and England.

Let me repeat again, this time more clearly, that I think the time has come for us to become even more friendly with Russia and to convince Germany that the time has come to desist, and for us to try to mediate for peace between the two combatants.

6. If Germany is headstrong, and says she is going back for more, let her go. But as for me, I still say that, insofar as the battle of Greater East Asia will permit, we should remain on the best of relations with Russia and do nothing that would harm those good relations. I tell you that this is of the utmost importance, because, even if Germany is not now ready to stop, sooner or later she is going to find it necessary. Let us, in the meantime, do our best to wean Russia from the United States, and when Germany has had a belly full, mediate for peace.

7. In trying to settle the question of border lines, the question of interests in northern Sakhalin comes up most frequently. Judging from my experience, since I arrived here a year ago, the question of those

interests is the most important obstacle to amity between our two nations. In the spring of 1941 Molotov and Matsuoka talked this over. If war hadn't broken out, I think we would have already settled this trouble, and, if so, we wouldn't have this facing us now in the midst of fireworks.

Right after I took office here last April, I expressed this feeling in an interview with Molotov and we both agreed that the present was no time to worry about it and that we had better wait, leaving the status as of 1941. However, it is true that this status is very shaky, a status in name only. The fact is that, after the Communist regime was established, it took over many of the rights of other countries which held over from the Imperial regime, and the only instance where foreigners are still allowed to manage and control any of these interests is in the case of our rights in northern Sakhalin and our fishing rights.

We can easily imagine that Russia is worried considerably about this, because it is a question of a great nation saving face. The fishing question is a little different and they have not yet called us to task about it, but the question of our interests in northern Sakhalin is a source of great dissatisfaction to them. I think, therefore, that, for the time being, we should withstand their pressure as much as possible, and, if we come to mediate between Germany and Russia, or when we independently begin to improve our relations with Russia, we should certainly do our very best at the outset to settle these provoking questions once and for all.

[The parts numbered 8 and 9 were so badly garbled in transmission that they cannot be read]

10. The best policy would be for us Japanese to get together with the Germans and help them to make peace and ourselves to establish better relations with Russia. I would like to see a truce between those two nations, but, if Germany won't listen, we must remember that we are waging a terrible battle in Greater East Asia and we will have to make up our own mind. What Germany says need not matter! Our country is free to make her own diplomatic decisions, isn't she? Please bear that in mind when you negotiate with Berlin.

11. Of course, it may be said that, if Russia gets out of the war and we keep fighting America and England for a long time, as soon as we are exhausted there is the great danger that the Far East will be Bolshevized. This is the same problem that confronts Europe. But is it a real problem? I doubt it. If we are exhausted, the Soviet will still be so busy reconstructing her nation that she would be no great menace to us.

> However, the settlement of borders and interests is something for the future. Right now we are forced to fight the United States and England, and until we have whipped them, it is very necessary to keep on the good side of the Soviet Union. So I say that we should continue to strike at the Anglo-Saxons and, in the meantime, endeavour to establish firmly what we call Greater East Asia. That is enough for our present objective. After we have established this Greater East Asia, then it will be time enough to make it a bulwark against Bolshevism.
>
> 12. What I have told you here has direct bearing on our war effort in Greater East Asia, so will you please follow my advice? Please get in touch with the military, and as soon as you can possibly get a chance bring about a Cabinet decision along these lines. Also please listen to what Morishima* has to say and see that his views are given due consideration.
>
> I have confidentially given the Army and Navy Attachés here a copy of this message.
>
> [* Minister Morishima, second in charge at the Japanese Embassy in Russia, recently returned to Tokyo to submit a first-hand report to the Foreign Office.]

From the telegrams quoted in successive issues of the *Magic Summary*, it becomes apparent that Sato's policy of accommodation with Russia at all costs was adopted and pursued. In early May, Morishima telegraphed to Sato that he was returning on 15 May and that: 'As for the big thing … I have reached a degree of understanding with the quarters concerned here which makes me think there is no longer any question of there being a disaster after I leave'. Shigemitsu, the Foreign Minister, telegraphed to Sato on 26 May: 'We are agreed that the fundamental principle of Japan–Soviet relations must be adjusted. Therefore we are glad to say that we are able to concur with the message you sent us by Morishima … . We want to get down to business now, and in all subsequent talks you are to make our primary object the ironing out of all political difficulties between Japan and Russia'. Shigemitsu's telegraphed to Sato again on 28 June: ' … These negotiations are designed to settle gradually all problems pending between Japan and Russia and to compose relations between the two nations. … As you say, we are going to conduct these negotiations in order to keep the Soviet neutral.' The daily totals of 52 Section's Kuibyshev–Tokyo–Kuibyshev intercepts shown in its Monthly Traffic Records for the period February to July indicate that Melbourne was intercepting at least as much of these exchanges as was Washington.

The talkative signalman

About 20 per cent of Mornington's intercepts were delivered to the Section in hand Morse by a direct landline. The telegraphist on duty would bring each message into the cryptographers' room as soon as he had taken it down. One evening late in 1944, one of these telegraphists, an Australian Corps of Signals corporal, was relaxing in the servicemen's recreation hut beside St Paul's Cathedral. He was an outgoing, helpful chap by nature, and the few drinks that he had had at Young & Jackson's across the road had made him more so. He got into conversation with a young soldier at the same table who had just completed his recruit training and was awaiting allocation. The corporal urged him to apply to join the Section and explained to him in some detail the work that it was doing. By way of illustration he sketched out the transposition block of the GEAM cypher (JBB) and showed him how each row was read off from it. He told him to go to Victoria Barracks and ask for Little. The following day the recruit did so. He was directed to the office of Little's Captain I(x). There he stated his business and the Corporal was placed under arrest. There were several courses open. One was to charge him with the unlawful communication of secret information under Section 79 of the *Crimes Act* (Penalty: seven years imprisonment). This, however, could be tried only by a civilian court and this would entail the secrets being further disseminated. An alternative was to charge him under Section 73A of the *Defence Act* with communicating naval, military or air force information otherwise than in the course of his official duty (the charge commonly preferred against soldiers who mentioned troop movements in their letters to their families). This was tryable by court martial, which could impose a penalty up to £10. Instead, the matter appears to have been disposed of extra-judicially: he was posted forthwith to a remote and insalubrious part of New Guinea and remained there for the duration of the war.

The *Kormoran* — HMAS *Sydney* Vigenère

Early in 1945 a small cryptographic task, quite unrelated to signals intelligence or Japanese cyphers, was assigned to the Section. On 11 January, 20 German prisoners of war (POW), including Commander Detmers, the Captain of the raider *Kormoran* that had sunk HMAS *Sydney* off the coast of Western Australia in 1941, tunnelled their way out of the Dhurringile POW camp in northern Victoria. When, a week later, Detmers was recaptured, there was found in his possession an exercise book of the type on sale in the camp canteen (the local 'VANA' brand), the contents of which were in code. This was seized by Military

Intelligence and sent to the Section for decryption.[48] The text, amounting to about 6,250 characters (the 26 letters of the alphabet plus an additional four: A, B, C, D), consisted of 25 sections (or entries) of unequal lengths varying from 39 to 525 characters. To give an example, the largest section read as follows:

```
L X C F U R Y I B Y B D U V E J M K B H Z A O Y J A R O I
H K J X A H Z I J E M V N V X K T U K S P M C H V J F B G
Q Y M J A J U T E V J Q W R W C D N A U S G M C T I L F N
J I J P R Y H K Z U J D J B V R B E Y J T W D C C J P Y W
A G Z K J P B Z Q M B B G S A R V A B H S M B H Q B B P I
W A E M I J M G I L O J X P K W D H Z B V X I M O M C I W
S Y M H Z X Y Z I P V W Z D T Y K N J N C M Q K N Q A I B
G G W W Y Q Y Y K A S I M C C U B S L K U U Z H N N Q Q I
I O J D M H B C B S J Q L K B W G R C X P U U U I G S W M
D T W K V N U J H B H Q J C C X B G X W A C M C A L O S J
M D W K J A X W W H L S J Z U K B D O I H K H N C L M R Y
C C L X T X I L K M D D J T N J A J X P X W R Q M D T T Z
T U A C X F J F T O I H C Z H J N W C B G S S U O M L L W
Y Z F P Y B P I W W P I I J M O S H V H T W R W R Q D K K
W O S J M D L C W W W H Z Z V Q M Q R A Y B P X K V X J Y
Y R O Y W M B I G G W O H P B R R J Y W M B X H T B R V K
B C T T Q H K A O G S H A D T Y H S R Y L U C T U H Z U H
Q J Z Y G S G T D B G Q V N W M P B W A H N L U H N G W O
H P B
```

As Smith was fluent in German, he was given first shot at the material. With some help from Barnes and from one of the clerical staff whose native language was German, he soon broke it. The method, Smith tells me, was simple. First the cryptogram was examined for its constituent symbols. This showed an alphabet of 30 characters — the standard 26-letter alphabet plus the additional A, B, C, and D — each of the 30 symbols appearing frequently. Next, a sample portion was tested for periodicity — the recurrence of the same interval between repeated polygrams. This revealed numerous examples of intervals of 15 and its multiples between repetitions — e.g. in the sample above, between: the HZs in rows 1 and 2, the OIHs in rows 2 and 12, the OSJMDs in rows 11 and 16, and the GWOHPBs in rows 17 and 20.

Taken together, these phenomena strongly suggested polyalphabetic substitution in which a cycle of 15 encyphering alphabets was employed. Working on this hypothesis, they then sought to identify in each of the 15 encyphering alphabets the most frequently occurring symbol. These should each represent the most frequently occurring letter in the plaintext message, which if the message was

48 A copy of Detmers' GEFECHTSBERICHT cryptogram and the solution of it by GC&CS in England is available from NAA: B5823, 'Folder of documents titled Dietmars' Diary — account of action between Kormoran and Sydney — decode and translations'. Treweek, when interviewed in 1990, had a clear recollection of what he termed the GEFECHTSBERICHT cryptogram and its speedy solution by his colleague at FRUMEL, Miller, at the time of its capture.

in the German language, must be E, which constitutes about 16.7 per cent of normal German text (The runners-up are N and I with 9.9 per cent and 7.8 per cent respectively).

If we apply this method to our sample section, ordering it into the 15 columns representing the encyphering alphabets produces the following:

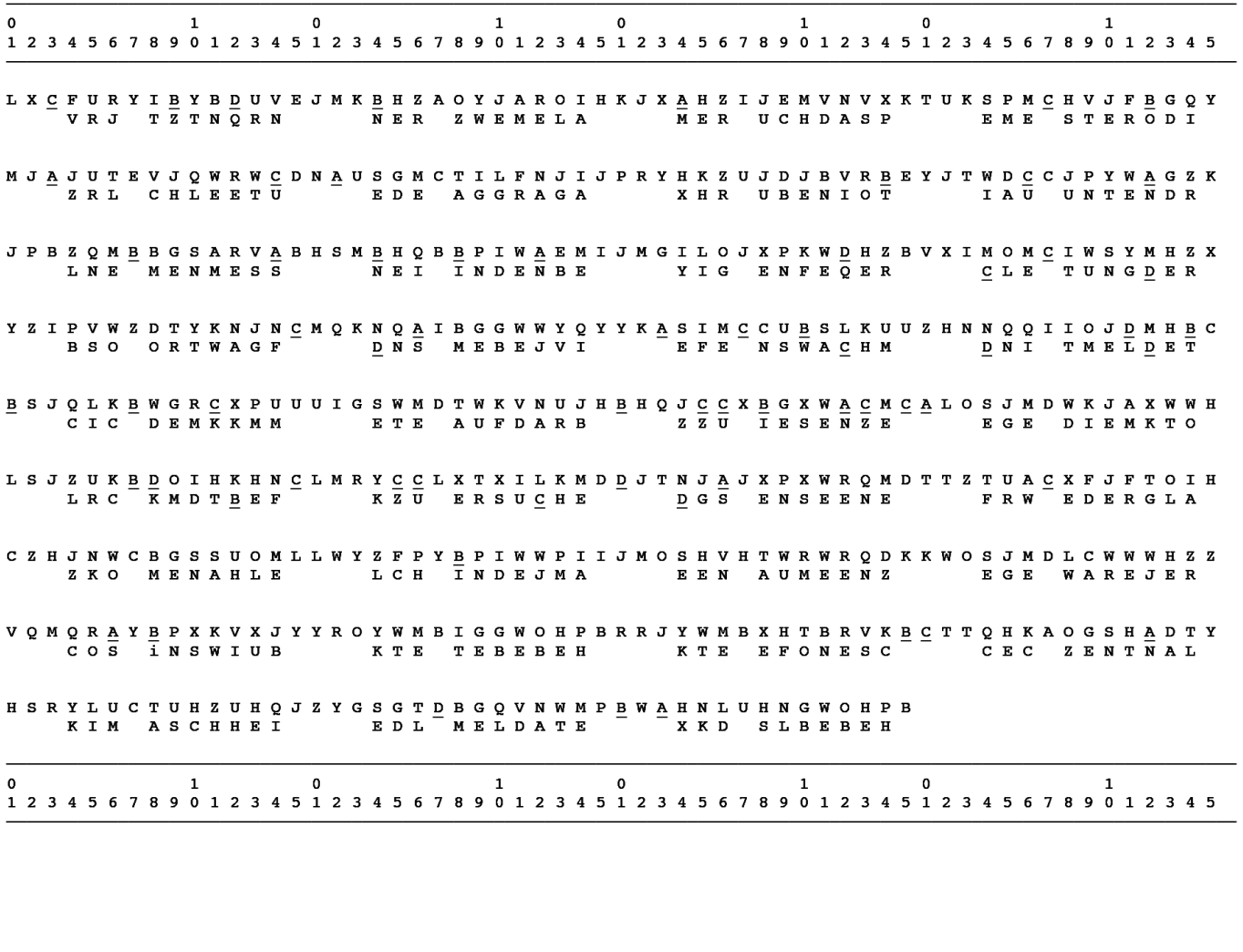
```
0                       1
1  2  3  4  5  6  7  8  9  0  1  2  3  4  5

L  X  C  F  U  R  Y  I  B  Y  B  D  U  V  E
J  M  K  B  H  Z  A  O  Y  J  A  R  O  I  H
K  J  X  A  H  Z  I  J  E  M  V  N  V  X  K
T  U  K  S  P  M  C  H  V  J  F  B  G  Q  Y
M  J  A  J  U  T  E  V  J  Q  W  R  W  C  D
N  A  U  S  G  M  C  T  I  L  F  N  J  I  J
P  R  Y  H  K  Z  U  J  D  J  B  V  R  B  E
Y  J  T  W  D  C  C  J  P  Y  W  A  G  Z  K
J  P  B  Z  Q  M  B  B  G  S  A  R  V  A  B
H  S  M  B  H  Q  B  B  P  I  W  A  E  M  I
J  M  G  I  L  O  J  X  P  K  W  D  H  Z  B
V  X  I  M  O  M  C  I  W  S  Y  M  H  Z  X
Y  Z  I  P  V  W  Z  D  T  Y  K  N  J  N  C
M  Q  K  N  Q  A  I  B  G  G  W  W  Y  Q  Y
Y  K  A  S  I  M  C  C  U  B  S  L  K  U  U
Z  H  N  N  Q  Q  I  I  O  J  D  M  H  B  C
B  S  J  Q  L  K  B  W  G  R  C  X  P  U  U
U  I  G  S  W  M  D  T  W  K  V  N  U  J  H
B  H  Q  J  C  C  X  B  G  X  W  A  C  M  C
A  L  O  S  J  M  D  W  K  J  A  X  W  W  H
L  S  J  Z  U  K  B  D  O  I  H  K  H  N  C
L  M  R  Y  C  C  L  X  T  X  I  L  K  M  D
D  J  T  N  J  A  J  X  P  X  W  R  Q  M  D
T  T  Z  T  U  A  C  X  F  J  F  T  O  I  H
C  Z  H  J  N  W  C  B  G  S  S  U  O  M  L
L  W  Y  Z  F  P  Y  B  P  I  W  W  P  I  I
J  M  O  S  H  V  H  T  W  R  W  R  Q  D  K
K  W  O  S  J  M  D  L  C  W  W  W  H  Z  Z
V  Q  M  Q  R  A  Y  B  P  X  K  V  X  J  Y
Y  R  O  Y  W  M  B  I  G  G  W  O  H  P  B
R  R  J  Y  W  M  B  X  H  T  B  R  V  K  B
C  T  T  Q  H  K  A  O  G  S  H  A  D  T  Y
H  S  R  Y  L  U  C  T  U  H  Z  U  H  Q  J
Z  Y  G  S  G  T  D  B  G  Q  V  N  W  M  P
B  W  A  H  N  L  U  H  N  G  W  O  H  P  B
```

In each of the columns, the most frequent characters, it will be observed, are as follows ($_c$ denoting cyphertext, $_e$ denoting plaintext):

Alphabet 1: 4 x J, 4 x L, 4 x Y, 3 x B
Alphabet 2: 4 x J, 4 x M, 4 x S, 3 x R, 3 x W
Alphabet 3: 4 x O, 3 x G, 3 x J, 3 x K, 3 x T, 3 x A
Alphabet 4: 8 x S, 4 x Y, 3 x J, 3 x N, 3 x Q, 3 x Z ∴ $S_c = E_p$
Alphabet 5: 5 x H, 4 x U, 3 x J, 3 x L, 3 x Q, 3 x W ∴ $H_c = E_p$
Alphabet 6: 9 x M, 3 x K, 3 x W, 3 x Z, 3 x A, 3 x C ∴ $M_c = E_p$
Alphabet 7: 4 x C, 4 x C, 3 x B, 3 x D, 3 x I, 3 x Y, 3 x B
Alphabet 8: 5 x X, 4 x B, 4 x I, 4 x T, 4 x B, 3 x J ∴ $X_c = E_p$
Alphabet 9: 8 x G, 6 x P, 3 x W ∴ $G_c = E_p$
Alphabet 10: 6 X J, 4 x S, 4 x X, 3 x G, 3 x I, 3 x Y ∴ $J_c = E_p$
Alphabet 11: 12 x W, 3 x A, 3 x B, 3 x F, 3 x V ∴ $W_c = E_p$
Alphabet 12: 6 x R, 5 x N, 4 x A, 3 x W ∴ $R_c = E_p$
Alphabet 13: 8 x H, 3 x O, 3 x V, 3 x W ∴ $H_c = E_p$
Alphabet 14: 6 x M, 4 x I, 4 x Z, 3 x Q ∴ $M_c = E_p$
Alphabet 15: 4 x B, 4 x H, 4 x Y, 3 x D, 3 x C

This, unfortunately, gives us no clear signs for E_p in alphabets 1, 2, 3, 7, and 15; but, as we have indicated, it provides hopeful indications in each of the others. The next step is, in the test section, to convert each character in these encyphering alphabets into plaintext.

Taking the first row, LXCFURYIBYBDUVE, as an example, U in Column 5 must be the product of plaintext encyphered with Alphabet 5. In Alphabet 5 cyphertext H_c represents E_p. This leads us to the assumption that U_c represents R_p. For, in polyalphabetic substitutions, the usual method adopted by the encypherer to provide and designate the various alphabets used is for him to write out a Vigenère square. In this, the top line is the letters of the alphabet in alphabetical sequence. This becomes the plaintext alphabet. Underneath it he writes out the same alphabet shifted one letter to the left, and so on, with each succeeding alphabet shifting one letter to the left. These are the encyphering alphabets, to each of which he gives an identifying letter, which he uses in the keyword. Thus, the usual Vigenère square is 26 x 26, with A at the top-left corner, the top row and the first column each extending from A to Z. But Detmers, the cyphertext indicates, was using the alphabet plus an additional four characters — A, B, C, and D. We assume, therefore, that his Vigenère square was 30 x 30. We also assume that, for ease of encypherment, he put the additional four characters in sequence at the end. Converting back into plaintext on this basis the characters encyphered with these ten alphabets, the sample section will read as follows:



Unfortunately, when we examine the plaintext above, it is evident that in Alphabet 4 S_c cannot represent E_p, for that would sometimes produce, as plaintext, letters that do not exist (e.g. C in Column 4, Row 3; D in Column 2, Row 4; Column 3, Row 6; and, Column 4, Row 4). For the same reason in Alphabet 12, H_c cannot represent E_p (this would produce as plaintext B in Column 1, Row 6; C in Column 2, Row 6 and Column 3, Row 4; and, D in Column 4, rows 3 and 4). Our solutions for these two alphabets must therefore be struck out. The string ZENT?AL in Column 4, Row 8 suggests that in Alphabet 12, A_c represents Rp, which would produce ZENTRAL (i.e. that N_c, the runner-up in our frequency count represents E_p). We shall therefore assume this.

It now remains for us to identify the unsolved alphabets by filling in the missing letters in obvious words in the plaintext that has so far emerged. TE?EFON?SC? in Column 3, Row 8 is obviously TELEFONISCH. This indicates that in Alphabet 7, B_c represents plaintet L_p (i.e. Y_c represents E_p); in Alphabet 12, R_c represents I_p (i.e. N_c represents E_p — confirming our assumption in the previous paragraph); and, in Alphabet 15, B_c represents H_p (i.e Y_c represents E_p).

If in Alphabet 15, B_c represents H_p, then U_c represents A_p. In the light of these identifications the string DEMK?MM?????TE in Row 5, columns 1 and 2 becomes DEMKOMMA????NTEN. This, obviously, is DEM KOMMANDANTEN, which means that in Alphabet 1, U_c represents N_p (i.e. L_c represents E_p); in Alphabet 2, I_c represents D_p (i.e. J_c represents E_p); in Alphabet 3, G_c represents A_p (i.e. K_c represents E_p); and, in Alphabet 4, S_c represents N (i.e. J_c represents E_p).

In this manner, each of the 15 encyphering alphabets has now been identified as follows: 1 $L_c = E_p$, 2 $J_c = E_p$, 3 $K_c = E_p$, 4 $J_c = E_p$, 5 $H_c = E_p$, 6 $M_c = E_p$, 7 $Y_c = E_p$, 8 $X_c = E_p$, 9 $G_c = E_p$, 10 $J_c = E_p$, 11 $W_c = E_p$, 12 $N_c = E_p$, 13 $H_c = E_p$, 14 $M_c = E_p$, 15 $Y_c = E_p$. This enables the whole passage to be decrypted. It reads as follows:

> es war jetzt nur noch ewerk zwem klar. Der Versuch des Pumpenmeisters die Feuerlochleitung von dem Aggregat im Schraubenmotorenraum unter Druck zu nehmen misslang weil in der Beschadigten Feuerloschleitung der Druck sofort wegfiel.
>
> 1745. Eins wach Maschinist meldet mundlich dem Kommandanten auf der Brucke zu dieser zeit gingen die Motoren durch. Kmdt befiehlt zu versuchen wenigstens einen Motor wieder klar zu bekommen. Alle Versuche in den Maschinenraum ein zu dringen waren erfolglos. Eins wm ubermittelte befehl Kmdt telefonisch von Leck zentrale an L.T. im Masch leitstand L.J. meldete zuruck dasl befehl …

When devising a cypher of this type the encypherer usually prefers to designate each of the alphabets on his Vigenère square by a distinguishing letter, rather than by a number, and to form the cycle from a codeword; this is easier to

remember than a string of figures, both during the encypherment process and afterwards. A convenient choice is the letters at the margin of the square. In this case the encypherer used the right margin — the column of letters encyphering D_p — and chose the code word:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
G	E	F	E	C	H	T	S	B	E	R	I	C	H	T

This means 'Action Report' and probably served also as the document's title.

Reference to the other 24 sections indicated that they were consecutive parts of the one document, the encyphering of each section beginning with the first letter of the keyword. The divisions appear to have been made at random; their purpose may have been to make decryption by the enemy a more tedious process.

This Action Report purports to be the deck and the engine room logs for the period from the sighting of *Sydney* (3.55 pm 19 November 1941) until the scuttling of the *Kormoran* some 8½ hours later. It provided the most reliable account of how *Sydney* met her fate. The material passage reads as follows:

> 1715 hrs — Cruiser cuts across starboard at range of 800 metres.
>
> 1725 hrs — Further signal: 'Hoist your secret call'. Further delay can only make situation worse … Thereupon at 1730 hrs identity declared. Strike Dutch flag, German colours clearly shown. Time taken to reveal identity 6 seconds. Order to stand by with guns and torpedoes. Enemy falls slowly astern … Salvoes 3, 4, 5 up four points — about 4 seconds later hits on bridge and control tower… . AA [Anti-aircraft] machine-guns and starboard 37 mm guns effective on bridge, pom-poms and AA guns. Until 5th salvo no reply, then X Turret opens rapid and accurate fire. Hits on [sc. our] funnel and engines. Y Turret only fires two or three salvoes, all wide. A and B Turrets silent …

In short, before verifying the raider's identity, *Sydney* approached to within point blank range and was crippled by fire from *Kormoran*'s main and secondary armament before she could bring fire to bear.

Disbandment

After the Japanese surrender, the Section was disbanded and its members returned to civil life. Bond joined the teaching staff at Scotch College Melbourne where he later became Vice-Principal. Eastway joined the postwar cryptographic organisation. The other three resumed their studies. Barnes went to Cambridge

and was elected to a Fellowship at Trinity in 1950. He became Professor of Mathematics and Deputy Vice-Chancellor at the University of Adelaide. McKay went to Cambridge and took a First in the Classical Tripos in 1950. He became Reader in Classics at The Australian National University. Smith went to the Sorbonne, where he took his doctorate. He became Professor of Modern Languages at the University of Tasmania.