SECRET

24 June 1970

MEMORANDUM FOR: [redacted] (b)(3)

SUBJECT : Proposed Outline of Map Library Division History

1. I am sending you herewith OBGI's proposed outline for the history of "Developments in Map Reference Services, 1945 to the Present" by [redacted] together with [redacted] and (b)(3) (b)(3)
your own [redacted].

2. When you have received [redacted] comments, you will wish to present the Board and Staff views to [redacted] OBGI Historical Officer. (b)(3) (b)(3)

WALTER J. MOBERG
DDI Historical Officer
Chairman, DDI Historical Board

Attachments: a/s

Copies: [redacted] (b)(3)

Distribution:
Orig. & 1 - Addressee
1 - Mr. Moberg ✓
2 - OD/CRS
WJMoberg:fjc

[redacted] (b)(3)

SECRET

SECRET

12 June 1970

MEMORANDUM FOR: [redacted] (b)(3)

SUBJECT : Outline of "Developments in Map Reference Services, 1945 to the Present" by [redacted] (b)(3)

(b)(3)

1. The subject OBGI outline is circulated for review and comment.

2. Please submit your comments to me as soon as convenient. Thank you.

WALTER J. MOBERG
DDI Historical Officer
Chairman, DDI Historical Board

Attachment: a/s

Copy: [redacted] (b)(3)

Distribution:
1 - Addressees
1 - Mr. Moberg
2 - OD/CRS

[redacted] (b)(3)

SECRET

Draft

DDI Bd [illegible]
drafted 13 Oct 71

Cartographic Support to Clandestine Operations 1947 through 1970

A DDI Historical Monograph

[redacted] (b)(3)

OBGI CD/R

April 1971

[redacted] (b)(3)

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I. Introduction

This monograph will attempt to describe the type of cartographic support provided the Clandestine Services in their operations which was different from support provided to other Agency components. It will not attempt to explain every map produced in support of operations, but through the selection of several key operations, it will trace the development of this support.

Although it precedes the period covered by this monograph, the early experiences in the Office of Strategic Services (OSS) during World War II are mentioned to provide the background for a comparison with later operational support. Compartmentation problems will be discussed in the transition period between OSS and CIA, since this is the period where they were the most serious. Support to the Guatemala operations is described because it represents support in response to a direct contact and support via a liaison-type unit. Support for Tibetan operations, which began as training support, developed into the first large scale operation involving use of all cartographic assets. Support to Cuba continued the close working relationships that were developing between the DDP and DDI components, but didn't involve Cartography as much as Tibet. Support to Saigon Station is the last major activity discussed. Cartographic support to Saigon

Station will be treated in its broad sense, i.e., support not only served operations, but served the research, analysis, reporting, and overt collection activities of the Agency.

Several programs that were designed to provide long term assistance in operational planning should be mentioned, but will not be treated as a part of this monograph, because the cartographic contributions were not unique to the Clandestine Services. Besides, they have been adequately covered in ~~the~~ another Geography Division history.*

[redacted] (b)(1) (b)(3)

[redacted] were all supported between 1951 and 1970. Map contributions to these series varied from the reproduction of existing maps to the compilation of custom-made maps for each topic. Maps in these series were very similar, covering topics such as: climate, vegetation, physiographic regions, transportation, airfields, population, ethnic groups, telecommunications, administrative divisions, economic activity, or any other subject peculiar to the particular region or country.

The support to operational planning through the production of [redacted] was considerable (b)(1) (b)(3)

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* See the monograph "Geographic Research in Support of Operational Planning 1950 - 1970" by [redacted] (b)(3)

This support, which has been similar to and closely associated with [redacted] has had a long and fruitful history. (b)(1) (b)(3) It will be covered in a separate Cartography Division monograph.*

There have been many other instances of support to clandestine operations and to operational related programs. Some of these have involved [redacted] (b)(1) (b)(3)

[redacted] (b)(1) (b)(3)

The difficulty that the author encountered in digging up information on support to Clandestine Services points up one of the problems inherent in maintaining closely-held, sensitive, covert activities and yet requiring timely and professional support from non-covert sources. Many of the records are lacking in information and detail and had to be supplemented largely through personal experience or through personal interviews. Where detail is adequate, it is due to the author's participation in the support or the excellent memories of other participants. Where detail seems inadequate, the available participants are few and the documentation is sparse.

(b)(1) (b)(3)

* See "Cartographic Support [redacted] 1953-1967" by [redacted]

(b)(3)

II. Early OSS Experience with Cartographic Field Support

A. The OSS Cartographic Organization

The present Cartography Division had its early beginnings in October of 1941 as one of three sections of the Geography Division, Research and Analysis Branch under the Coordinator of Information (COI). Between October 1941 and January 1942, [redacted] and his staff were occupied with the organization of the Cartography Section. (b)(3) Staffing, equipment, training, and the establishment of procedures were necessary before the Section could begin to operate. Most of the procedures developed in this period, with some refinements added periodically, formed the basic philosophy of the present Division. 1/ A review of the minutes of the Cartographic Section's meetings would show a great deal of similarity in content to minutes from meetings held thirty years later. 2/

B. The Formation of Map Division Outposts

In January 1943, the Geography Division was replaced by the Map Division with little effect on the Cartography Section. The first field support of the Map Division was undertaken in the summer of 1943 when [redacted] was assigned to New Delhi, (b)(3) and then to Kandy, under General Wedemeyer. Later in 1943, Captain [redacted] was assigned to Cairo and [redacted] (b)(3) (b)(3) was sent to establish a map outpost in Algiers. In early 1944,

Map Division personnel began arriving in London where the major field activity was to be centered. By October 1944 the London outpost had reached a strength of [redacted] 3/ (b)(1) (b)(3)

The Map Division outposts were established to support military and OSS field operations by supplying maps and map information, and by constructing maps and models. Collecting foreign maps and map intelligence was also a part of this responsibility. The outposts varied from one or two man operations, to large contingents, such as London. Their work varied in scope, nature, and duration. Outposts existed at one time or another, in North Africa at Algiers and Cairo; in Europe at Bari, Caserta, Berne, London, Paris, Rome, and Weisbaden; in Asia at Chungking, K'un-ming, New Delhi, and Kandy; and also one at Honolulu. 4/

In the Map Information Section (MAPIS) of the Map Division, an Outpost Desk was established to perform the following functions: "(1) to maintain administrative and professional relationships between the Map Division, Washington, and its several field operations and outposts; and (2) to indoctrinate Map Division employees going abroad in their duties and (3) to serve as a channel between the outpost and the home office. 5/

C. Cartographic Support at the Outposts

In theory, each outpost was a Map Division in microcosm, using methods identical to those in Washington. Some of the small outposts

had to combine the variety of functions of the Map Division in one individual. It was necessary that the outposts improvise and make do with whatever equipment was available. They were trained to perform all the skills, professional as well as sub-professional, necessary to complete a map from beginning to end. The on-the-spot cartographic support provided by the outpost officers was an early example of how cartographers with professional geographic backgrounds and cartographic skills could provide close support to operational planning. The outpost officers worked closely with the operations officers. For example, in Kandy, [redacted] assisted OSS detachments in planning clandestine operations in Southeast Asia by locating targets, debriefing local assets, and preparing maps. Maps were also constructed in the field to accompany reports which were produced as part of the Map Division's reporting and analysis function. 6/

(b)(3)

III. Transition Period from OSS to CIA

A. Relatively Little Support Between 1945 and Early 1950's

After the end of World War II, OSS was abolished and demobilization took place at a rapid rate. Many of the military personnel returned to academic or to other peacetime pursuits. The cartography component and its related components remained in operation under the Interim Research Intelligence Service (IRIS). The Department of State offered another temporary home for the cartographers and geographers, and they remained there until their transfer into the Central Intelligence Group (CIG) and to the Central Intelligence Agency in the latter half of 1947. During this period there were five physical relocations. 7/

Because a considerable core of OSS personnel remained with the cartography unit through this unsettled transition period, a fair amount of continuity was maintained. This was not necessarily the case for other OSS components.

If it were not for the demand for maps, especially in the Far East, and by the predecessor to the National Intelligence Survey (NIS), the Joint Army Navy Intelligence Survey (JANIS), very little other intelligence work would have been done. Operations support would also have been nonexistent if there had not been the early personal contact between OSS operations officers and the cartographers.

After the establishment of CIA in the fall of 1947 the cartography unit found a permanent home and the opportunity to build a foundation for a lasting intelligence mission. The late 1940's and early 1950's were a period of NIS and other base map development. There were the individual country maps which formed the base for building intelligence themes for the NIS and for all other production components in the Agency. The early 1950's marked the turning point from little to considerable support to the early Clandestine Services.* 8/ Most of this early support took the form of map requests answers to no different from those that provided all the operating offices of the Agency. Operational support was given under extreme compartmentation restrictions.

B. Early Contacts and Compartmentation Problems

Many of the contacts with the Clandestine Services in the early 1950's were in the form of requests for large scale map series on operational target areas. In some cases support was needed to reproduce map sheets or to print map sheets [redacted] Most of the operational officers were unaware of the existence of a cartographic unit and thought only in terms of using existing maps produced by the Army Map Service or reproducing foreign map series found in the Map Library. (b)(1) (b)(3)

When requests for maps to be specially prepared, such as a study of [redacted] for possible operational use, the request from O/PC (b)(1) (b)(3)

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* At this time the Office of Special Operations (O/SO) and the Office of Policy Coordination (O/PC).

in June 1951 came through the Geography Division. 9 / All questions pertaining to the request were channeled through Geography Division personnel in order to restrict the contact with the requester. This procedure was employed throughout the early years of contact and probably developed for several reasons. The Clandestine Services wanted to limit their contacts to as few people as possible, and the geographers were usually contacted first where geographic studies were involved that required supporting maps. The geographers levied the requests for the supporting maps and often became the sole contact with the requester.

This approach by the Clandestine Services developed an internal compartmentation reaction in the Cartography Division. Individual contacts were limited to a few cartographers. Since many of the requests involved support by the Geography Division, cartographic research and compilation of data was done by the geographers and only the construction of the maps was left for the Cartography Division. This, in effect, cut out any contribution by the compilation units. As a result, Cartography Division construction personnel became the sole contact with the operations officers. Areas were closed off and individuals isolated while working on the projects. Monthly report reference to titles, nature of support, and requesting personnel revealed little information.

Some of the early requests for geographic or cartographic support were disguised by asking for support on several areas when only one was

required. Occasionally, attempts were made to by-pass supervisors to further limit the number of people involved.

Relaxation of compartmentation was dealt a further setback during the Senator McCarthy era when everyone was led to believe that there were communists or fellow travelers throughout the Federal government. It was even more difficult to develop a close support relationship under conditions of mutual distrust. A few partial breakthroughs occurred, but it wasn't until the late 1950's that the full assets of the Division were used to support clandestine operations.

IV. Guatemala Operations, 1954

A. Background

In early 1954, due to the rapidly developing communist threat in Guatemala, CIA became involved in the opposition to the communist-backed regime of Jacobo Arbenz Guzman. The opposition was led by an army colonel, Carlos Castillo Armas. The planning and execution of the operation took place in the first six months of 1954. In June 1954 Arbenz was overthrown and replaced by a military junta led by Armas.

B. Headquarters Support

The Foreign Intelligence Staff of DDP had a unit, established in 1952, that was responsible for obtaining operational support from other Agency components. This unit, known as RQM/OIS for Requirements and Operational Intelligence Support, provided the liaison function between DDI components and the operationg Divisions. In early 1954, RQM/OIS made contact with [redacted] (b)(3) Chief of the Western Hemisphere Branch of the Geography Division, ORR, in search of available map coverage of Guatemala. 10/ Map coverage at that time was extremely inadequate as well as inaccurate. One of the most useful small scale maps was the Esso road map. The approach taken by [redacted] (b)(3) of RQM/OIS was to request raw data and to divulge only the information necessary to obtain the data. As a result, very little of the evaluating

or analytical ability of the geographers was used. Because of the inaccuracy of much of the data, this would have been an important function. Much of the geographic and map support was handled in this manner. Fortunately, there was some direct contact between the chief operations officer and the Cartography Division. 11/

C. Assistance at the Task Force Field Headquarters

In January of 1954 [redacted] contacted the Cartography Division in search of support for his Guatemala Task Force field headquarters located [redacted] had been involved in operations in Korea during the Korean War where he had developed an appreciation of close cartographic and photo intelligence support. He wanted a map and grid prepared for his situation room at his Task Force headquarters. 12/ Arrangements were made for [redacted] Deputy Chief of the Development and Construction Branch to visit the base and construct the map. (b)(3) (b)(1) (b)(3) (b)(3)

After [redacted] arrived at the base and was given a briefing of the operation and the purpose of the map, he immediately realized that this would be a major undertaking. Because of the urgent need for the map, he worked long hours and was able to condense a several week job into one week. Using small scale source maps the map was enlarged block by block and painted on Homosote board and mounted on the wall. The map contained all the basic features, with a terrain shaded background and an arbitrary reporting grid. This grid was used for recording data supplied by radio from teams in Guatemala. Field (b)(3)

units were supplied with [redacted] maps that contained a matching grid. (b)(1) (b)(3)
The map and its overlay data became the focal point for following the progress of the entire Guatemala operation. 13/ After the successful conclusion of the operation the map was dismantled and used in a White House briefing given by CIA for President Eisenhower and the National Security Council. 14/

D. Other Support Recommended

While [redacted] was at the base he was approached by members (b)(3)
of the Task Force who were working with aerial photography and needed assistance in its use. He suggested that they contact the photo Intelligence Division for support. Subsequently, the photo interpreters and geographers were able to update many of the features, especially roads, on the existing maps.

V. The Tibetan Operation

A. Background

1. The Tibetan Situation in 1959

Since the Chinese Communist occupation of Tibet in 1950, relations between the Chinese and Tibetans were tense and potentially explosive. In the Seventeen-point Agreement of 1951, China was to have suzerainty over Tibet, but Tibet would retain control over its internal government, religion, and customs. Events proved that the Chinese Communists never intended to provide real autonomy for Tibet. At first, they exercised restraint with the Tibetans, but gradually as they consolidated their position and began to tighten their grip on all controls, Tibetan discontent grew.

In 1955 and 1956 fighting had broken out in Kham and Amdo areas of eastern Tibet. Guerilla uprisings were met with increased military action against the villages and monasteries. By 1959 guerilla activity had spread to central Tibet and relations between Chinese and Tibetans became openly strained. Tibetan fears for the safety of the Dalai Lama in March 1959 created an air of confusion and distrust in Lhasa, which led to the shelling of the Norbu Lingka, the Dalai Lama's summer palace. On 17 March the Dalai Lama and his entourage slipped out of Lhasa. They were joined by a protective force of guerillas and made their way toward India. On 18 April the Dali Lama arrived in Tezpur,

India, after an arduous journey through difficult terrain.

After the escape of the Dalai Lama the Chinese lost no time in abolishing all Tibetan government and establishing a military dictatorship. Chinese troops were quartered in all major towns and sought out guerillas throughout the countryside and along the frontiers of India.

2. The CIA Role

The United States Government contacts with the Dalai Lama, and the encouragement of Tibetan anti-communist resistance date back to 1950. In 1951 a major committment to support the Dalai Lama and his entourage was made on the condition that he leave Tibet. He decided to return to Lhasa and try to work for his people under the Chinese Communists. In 1956 he visited India and again contacted the U.S. representative to seek a renewal of the commitment, as his position was growing untenable. At this time the U.S. representative urged him to return to his country where it was believed that he would be more effective, but should he not return assistance would be given in obtaining asylum. 15/

CIA began supporting the Tibetan resistance in the autumn of 1957 after discussions with the Dalai Lama's representatives in India in 1956.

(b)(1)
(b)(3)

[redacted] (b)(1) (b)(3)

[redacted] 16/

One part of the program was to "train leaders and cadres who are parachuted into Tibet to instruct and advise the resistance forces in how to use their men and the air dropped supplies in guerilla action against the Chinese Communists. Some of these men are trained as radio operators and thus become agents providing a communication link between the resistance forces and the United States source of their supplies". 17/ The Far East Division of DDP began the covert (b)(1) (b)(3) training program [redacted] in 1957. In late 1958 the training was relocated to [redacted] and in the fall of 1959 to a high altitude (b)(1) (b)(3) training site [redacted]

(b)(1) (b)(3)

B. Training Support

1. Training TDY's

(b)(1) (b)(3)

The initial contact for cartographic support came soon after the training site was moved to [redacted] of FE/DDP approached the Cartography Division looking for assistance (b)(3) in the training program at [redacted] In March 1959, [redacted] (b)(1) (b)(3) made the first of a series of trips to [redacted] to develop procedures for a course [redacted] (b)(1) (b)(3) [redacted] In July 1959, [redacted] deputy, accompanied him on another trip to [redacted] In the interim at (b)(1) (b)(3) Headquarters, work had begun on a series of operational maps. Also several maps were prepared to assist in field exercises. In August (b)(3) (b)(1) (b)(3)

during another training exercise, these maps were used by Messrs. [redacted] and found extremely useful. (b)(3)

In the fall of 1959, field training was moved to the [redacted] (b)(1) (b)(3) base, a site more comparable to terrain conditions in Tibet. In February/March and July/August of 1960, Messrs. [redacted] (b)(3) [redacted] conducted [redacted] In (b)(1) (b)(3) March 1963 another group was trained by a two-man cartography team, but this time [redacted] Deputy Chief of the Special Support (b)(3) Branch (CD/X) replaced [redacted] The final TDY was made by (b)(3) [redacted] in July of 1964 when the last Tibetan group was trained. 18/ (b)(3) The training base was closed in November 1964. 19/

2. The Nature of the Training

[redacted] (b)(1) (b)(3)

(b)(1)
(b)(3)

(b)(1)
(b)(3)

Since the instruction was conducted through interpreters, and the trainees were semi-literate, it was necessary to keep all instruction at a very simple level. Whether a concept was understood could be determined only through the classroom or field exercises. In spite of their low levels of education and lack of familiarity with modern technology, the trainees were remarkably alert, intelligent, and eager to learn. 22/

C. Headquarters Support

1. The 1:1,000,000 Map Series

After the initial training TDY in early 1959, it was evident that a set of operational maps would be needed in Roman and in Tibetan script. Map sources on this area were extremely limited and based on early exploration. There were many inaccuracies, but these would have to be accepted initially and revised when information became available. The 1:1,000,000 International Map of the world series produced by the Army Map Service was used as the first base. These maps (11) were

updated with all of the intelligence data available. New Chinese roads, airfields, and a shaded relief background were added. Shaded relief was vital, because contours were a difficult concept for the Tibetans. Monasteries were also vital, since these were features as familiar to the Tibetans as any feature on the map, and were ideal points for orientation. Tibetan script was prepared [redacted] The script was used on the versions to be printed on cloth and paper for field use. A reporting grid was added and templates were made for use with the grid. The basic research for this first map series was done by the Division's Far East Branch, and marks one of the first times that the total Division's assets were brought to bear on an operational problem. (b)(1) (b)(3)

2. The 1:500,000 Map Series

The 1:1,000,000 map series was a useful series, but was lacking in positional as well as relative accuracy. In 1960 the use of the U-2 overhead photography was extremely restricted. The Cartography Division had only a limited number of people cleared for working with this material. It became evident that this material offered the quickest solution to providing the most accurate operational maps. The Aeronautical Chart and Information Center (ACIC) in St. Louis, Missouri was requested to provide a series of these maps (10) at the scale of 1:500,000. 23/ By September 1960 most of the map series had been completed with partial coverage by U-2 photography.

It pointed up gross errors in the original map series, but lacked the detail in cultural features, since many of these could not be identified from the air. A closer working relationship between the research cartographers and the ACIC photo interpreters would have provided an even more useful set of operational maps. A new type of compartmentation had prevented the best possible cartographic support.

3. [redacted] (b)(1) (b)(3)

[redacted] (b)(1) (b)(3)

D. Feedback

Feedback from cartographic support to operations is usually infrequent. For the Tibetan operation it came fairly soon and for several years proved extremely useful. [redacted] (b)(1) (b)(3)

(b)(1)
(b)(3)

(b)(1)
(b)(3)

VI. Cuban Operations, 1960-1963 *

A. Support Through Geography Division

The Western Hemisphere Branch of the Geography Division was abolished in August 1957. Fortunately, while assigned to another branch, [redacted] had been maintaining the files, and in 1959 the Branch became active again.** One of the first projects after becoming active was a series of operation planning studies on Cuba for WH/DDP. Cartographic support for the studies included maps on airfields, transportation, physiographic regions, vegetation, coastal characteristics. There were also maps on the cities of Havana, Santiago and selected areas such as the Isle of Pines and the Zapata Swamp. These studies were a part of a contingency series on selected Latin American countries. One of the first needs at the start of the Cuba operations was for the best large scale maps. In response to this need 222 sheets of the 1:50,000 map series on Cuba was reproduced. Cartographic support in reproducing this series was primarily in the preparation of the maps for printing. 25/

(b)(3)

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* The Cuba operations had several different names between 1960 and 1966 — WH-4, Task Force W, Special Affairs Staff, WH/Special Affairs, WH/Cuba, and WH/Cuban Operations Group. The major cartographic support activity took place in the 1960-1963 period.

** The Branch wasn't officially re-established until 23 June 1961.

During this period [redacted] became the principal intelligence officer for Cuban operational support in the Geographic Research Area (GRA). Her Branch eventually was enlarged to [redacted] people and most requests for support were funneled through her. It wasn't until January 1963 that the Cartography Division formed a Western Hemisphere Branch by removing that area from the responsibility of the Far East Branch. [redacted] became the Chief of the new Branch, but by then most of the Cuban activity had declined. (b)(3) (b)(1) (b)(3) (b)(3)

B. Support to the Task Force Situation Room

In 1960 a situation room was organized for the Cuba operation. The operations officer in charge of the situation room was [redacted] a former member of the Cartography Section in OSS. [redacted] OSS background experience and contacts in the Cartography Division provided the Task Force with a valuable asset. He was able to breakthrough the DDI/DDP communication barrier. (b)(3) (b)(3) (b)(3)

The demands on Cartography by the situation room were considerable. Three hundred and nineteen sheets of the 1:50,000 map series were laminated and also reproduced in black and white. Seven hundred sheets of 145 symbol cuts were also prepared for use on the situation room maps. 86/ Many special maps were prepared for the situation room. One was a map with a detailed grid for use in plotting all naval, maritime, and small boat activity in Cuban waters. During the Cuban missile crisis, the situation room became the main center

of activity in the Intelligence Community. A close working arrangement had developed with all the DDI components, and many ideas were generated in the support of the effort. The study and map of the Cuban caves where missiles could possibly be hidden, was an example. Another project was the detailed target folders providing all the available data on strategic installations throughout Cuba.

In 1963, Task Force W became the Special Affairs Staff (SAS) and [redacted] became the Chief of the Intelligence Branch. (b)(3) The Intelligence Branch not only maintained the situation room, but handled many of the broad intelligence activities, and provided the bridge between the operational side and the policy planners. It supported the paramilitary activity by supplying research, graphic, and other backstopping.

C. Other Support

1. The Electronic Facilities Atlas

In conjunction with the Economic Research Area of Office of Research and Reports (ORR) Cartography Division prepared 52 maps for inclusion in an atlas of Cuba. The atlas covered all aspects of telecommunications in Cuba and was based on all the intelligence available from U.S. commercial sources as well as the Special Center sources. The atlas was completed in May 1960 after two months of concentrated effort. 27/ In October 1962, during the missile crisis, additional

copies had to be collated and supplementary maps added. 28/

2. The Grid Problem

In 1960 a problem arose over the use of the 1:50,000 map series in operational reporting. The field was using copies of early series of maps with the Lambert grid. Headquarters was using the series that the Army Map Service had reprinted with a Universal Transverse Mercator (UTM) grid. Information relayed to the field based on the UTM grid references were incompatable with the Lambert grid. The consequences could be disasterous to the agents in the field. The operational people were made aware of this problem, but it wasn't until 1962 that action was taken to show graphically the magnitude of the problem. The problem was worked out mathematically by the Cartography and Geography Divisions, and an index map produced with both grids. In some areas a difference of 15 kilometers was noted. 29/

VII. Saigon Station Support

A. Station Buildup 1964-1966

The Saigon Station grew in the mid-1960's as the U.S. military increased its commitment to South Vietnam. Personnel strength in the Station grew from approximately [redacted] by late 1966. (b)(1) (b)(3) Its personnel was significantly different from the usual overseas station contingent, since FE/DDP could not supply enough people from the normal channels and had to draw personnel from other Divisions of the DDP, other Directorates, and from contract sources. Most of the employees in Saigon were aware of the DDI type Headquarters support, but were unfamiliar with how to get this support in the field, especially cartographic and graphic support. They were also unfamiliar with cartographic resources in U.S. agencies in Vietnam or in the Vietnamese Government.

In November 1964, [redacted] Chief of the Far East Branch (b)(3) of CD/RR visited Saigon for three days on the way to a U.N. cartographic conference in Manila. 30/ He held discussions with [redacted] the DDI representative and the chief of the newly (b)(3) formed [redacted] This was to be the component that would be staffed by DDI personnel. In company with a member of [redacted] (b)(3) [redacted] made a quick survey of the available Saigon cartographic and (b)(3) graphic assets. He uncovered a number of sources that could prove (b)(3)

helpful and left a list of all these assets with [redacted]. (b)(3)

On returning to Headquarters, [redacted] looked into the map (b)(3)
distribution problem with the Map Library and suggested an automatic distribution procedure that would get maps to the people that wanted them. Heretofore, maps sent out to the Saigon Station ended up with the first person who happened to see them or were never distributed. There was also confusion over the different State and Agency distribution channels [redacted] which was clarified, but broke (b)(1) (b)(3) down again later.

B. The Station's Attempt to Produce Its Own Maps

In the 1965-1966 period, [redacted] (b)(3)
[redacted] the Station was charged with the responsibility of supervising (b)(3)
the Revolutionary Development Cadre Program (RDC). In this capacity, [redacted] provided field officers in charge of RDC teams in each (b)(3)
province. Provincial maps were needed so that each officer could record his teams' whereabouts, their performance, and progress. [redacted] who was at the time without (b)(3)
knowledge of cartographic support available at Headquarters, launched (b)(3)
a program to produce provincial maps. He procured ozalid copies of the 1:200,000 map series produced by the Vietnamese General Directorate of Land Surveys (Tong Nha Dien Dia) and then took this (b)(1) (b)(3)
material to the [redacted] to

have maps made of each province. [redacted] (b)(3)
[redacted] TSD was assigned the task of compiling, drafting and printing maps of each of the provinces (43 at that time). The personnel [redacted] were highly skilled artists and reproduction experts, (b)(3)
but map design was not their specialty. The results were a usable series of maps, but they lacked the professional cartographic touch. The maps all had fractional scale errors that would have been picked up by a cartographer.

In early 1966, on being assigned to [redacted] at (b)(3)
Headquarters, [redacted] learned of the Cartography Division and (b)(3)
its capabilities. After discussions with [redacted] and members of (b)(3)
the Far East Branch, it was agreed cartographic support to Saigon Station was needed. 31/

C. Recognition of the Need for Cartographic Support

In November of 1965, [redacted] returned to Headquarters on (b)(3)
home leave and met with [redacted] He requested a number of page (b)(3)
size maps of South Vietnam to be used in reports produced by [redacted] (b)(3)
[redacted] and agreed with [redacted] that closer liaison between the Station and Cartography Division was necessary. 32/ (b)(3)
[redacted] of the Director's newly created Vietnam Affairs Staff (VAS) also visited the Far East Branch during November (b)(3)

1965 and was extremely interested in the cartographic problems in the Vietnam area. He was concerned that the Cartography Division was not getting the latest information which was available in the field and should be used in compiling the maps on Vietnam. He wrote a memo to his Chief, Mr. Peer de Silva, who was the Special Assistant for Vietnam Affairs (SAVA), outlining the problem and quoting from [redacted] trip report of November 1964. [redacted] (b)(3) (b)(3) proposal was:

> I am of the opinion that this Agency can do better economic and political mapping of Vietnam than is currently available and that information is available in Vietnam which will make it improve the mapping. It may be that some or all of this information has been sent to Washington but, if so, it has not reached the cartographer. My personal view is that it takes a cartographer in Vietnam with the responsibility of visiting from time to time the provinces and updating the mapping, but this is a question that can best be decided by the DDI. It may be possible for [redacted] to undertake work in the geographic area utilizing either the geographer or cartographer currently scheduled to leave in December or through the TDY of a cartographer from here. I propose that we present this problem to the DDI for solution. 33/ (b)(3)

Mr. de Silva never passed the proposal on to the DDI, but wrote the following note to [redacted] "The Station is just not able to absorb any new tasks now - they're stretched much too thin already in doing what they are - might discuss with [redacted] before he returns." 34/ (b)(3) (b)(3)

The two individuals [redacted] mentioned as potentially able to help relieve some of this problem when they reported to Saigon were [redacted] of the Cartography Division and [redacted] (b)(3) (b)(3) (b)(3)

of the Geography Division. Both ended up as acting regional reports officers in the field assigned from [redacted]; neither was given an opportunity to devote any time to the Station's map problems.* (b)(3)

In early 1966 with interest expressed by VAS, the [redacted], and [redacted] decided that the time had arrived to propose some cartographic support to the Saigon Station. With encouragement from [redacted] he prepared a memo to [redacted] Chief of CD, outlining the assistance that a cartographer could provide the Station and suggesting an initial TDY of 30 to 60 days to survey the situation and make recommendations for continued support. 35/ On 20 July 1966 a meeting was called by [redacted] acting for James A. Brammell as Director of the Office of Basic and Geographic Intelligence (OBGI), at which it was proposed that a cartographer be sent TDY to Saigon for three months, and the Chief of FE Division notify the DDP and the DDI of the proposal. 36/ After approval of the proposal [redacted] suggested that [redacted] be the initial cartographer to make the TDY and on 29 August an itinerary was prepared with an arrival date in Saigon of 24 September 1966. 37/ A stop over [redacted] was (b)(3) (b)(3) (b)(3) (b)(3) (b)(3) (b)(3) (b)(3) (b)(1) (b)(3)

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* Later in the 1967-1969 period a similar situation existed with two cartographers, [redacted] both assigned to the field. [redacted] was able to devote some time to the location of Communist administrative units. (b)(3) (b)(3)

included to review the province map series, which had been prepared by TSD, and return the reproduction materials to Headquarters.

D. TDY's to Saigon in 1966 and 1967

1. Survey of Station's Requirements and Interim Recommendations

[redacted] first order of business on reaching Saigon Station was to make a quick survey of the map situation. Because of the dispersed nature of the Station facilities and the different Station components that required support, he decided to divide the major part of his time between [redacted] At the end of one month an interim report was prepared. 38/ This report became the basis for a cable back to Headquarters prepared by [redacted] and also the senior DDI representative. 39/

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In the report [redacted] indicated that the Station's principal map collection consisted of out-dated map stock inconveniently located under a staircase. He further indicated that there was no mechanism for keeping current on Headquarters cartographic programs or production, and a distribution system was lacking. He recommended that a facility be located in the main embassy building to be used by Station and State personnel, that it be stocked with the latest series of large scale maps for Vietnam and the surrounding countries,

(b)(3)

and that there be gazetteers, atlases, and other related items available. The room could be the focal point for receiving, filing, ordering, and distributing all CIA and military cartographic productions. (b)(3)

[redacted] described [redacted] (b)(1) (b)(3)
[redacted] where there was [redacted] supporting the RDC program. It had graphic capability, but needed cartographic support. The Vietnamese were developing a filing system for maps that was impractical and was based on obsolete map series. He recommended a redirection of this program to avoid wasting additional manpower and money. (b)(1) (b)(3)

Concerning special cartographic services, [redacted] suggested that maps, charts, and briefing aids be prepared at the Station for VIP briefings or conferences. He pointed out that an in-house cartographer could provide help in the use of large-scale topographic maps and the associated Universal Transverse Mercator (UTM) grid reference system. Assistance could be provided for any other peculiar cartographic problems at the Station, and those involving extensive support could be referred back to Headquarters. He referred to a visit to two regional headquarters, Nhatrang and Danang, where the field officers had expressed an enthusiastic desire for map support and had already levied heavy requests for maps. He noted that the field also needed assistance in selecting, mounting, and overlaying (b)(3)

maps, and they needed a special series of maps for use with their reports going back to Saigon.

[redacted] also showed concern for the Agency's collection requirements by describing the type of information that was needed back at Headquarters to make accurate intelligence maps. He mentioned the inadequate coverage by th[redacted] who had to procure maps for the entire Far East. He suggested that a qualified cartographic officer could supplement the [redacted] duties of collection and evaluation of cartographic data for the South Vietnam area. (b)(3) (b)(1) (b)(3) (b)(1) (b)(3)

At the conclusion of the report, [redacted] promised to report additional findings and make final recommendations to the Chief of Station at the end of the TDY. (See Attachment E) (b)(3)

SECRET

2. Activities and Negotiations

After [redacted] explained the need for a map reference room (b)(3)
to Station support personnel, an old storeroom on the ground floor of the Embassy was renovated. The situation began to improve rapidly. Rapport was established by [redacted] with the personnel of (b)(3)
U.S. Army Map Depot and much of red tape eliminated in procuring topographic maps. Personal contacts were established with other U.S. agencies in Saigon that could provide valuable assistance and also be recipients of Agency produced maps. Current maps and related items ordered from Headquarters earlier began to arrive at the Station. [redacted] had a Station notice circulated, announcing (b)(3)
the opening of the map reference room and the presence of a temporary "cartographic advisor". He also sent packages of maps to all of the provinces through the regional offices. Many private map collections were gathered up from closets and corners throughout the Station and were dumped on the new map reference room. All of the pent up desires and frustrations of the Station personnel concerning maps and cartographic needs inundated the new "cartographic advisor".

It was apparent to [redacted] when he was preparing the final (b)(3)
recommendations for [redacted] the Chief of Station, that there (b)(3)
was a strong demand at the working level for continued cartographic support. [redacted] the DDI rep, knew the value of having current (b)(3)

Cartography Division products as "trade goods" in his liaison work with MACV. [redacted] (b)(3)

[redacted] did not fully appreciate the usefulness of the material, but saw that it was a logical part of his branch and wanted the new map room. Unfortunately, he was not inclined to assign anyone but the lowest graded individual (GS-7) to maintain the room, even though there was a volunteer at the GS-12 level. [redacted] Deputy Chief of Station, was very sympathetic to the problem and suggested a talk with [redacted] after the final recommendations were made. (b)(3) (b)(3)

After conversations with Messrs. [redacted] and other Station officers, [redacted] was convinced that the toughest job would be to sell [redacted] on the program. After [redacted] read the final recommendations, he met briefly with [redacted] and remarked that they were very cogent, but indicated that he had just as cogent a reason for wanting to keep down personnel levels at the Station. (b)(3) (b)(3) (b)(3) (b)(3) (b)(3)

With this limitation in mind the other more favorably inclined individuals felt that all the work done during [redacted] TDY must not be wasted, but be continued temporarily. [redacted] decided to assig[redacted] his assistant, the task of receiving all new map shipments. [redacted] of his Branch the task of keeping the room in order and giving out maps. Possibly one of the [redacted] slots could be made to accommodate. (b)(3) (b)(3) (b)(3) (b)(3)

the new responsibility when the next group of replacements came from Headquarters.

3. Follow up Response at Headquarters

On returning to Headquarters in December 1966, [redacted] (b)(3) had a number of meetings with personnel of his office. A meeting was held with Messrs. [redacted] (b)(3) to brief them on the TDY. These men representing office management were interested in the Saigon Station's cartographic problems, but were not too optimistic about getting any professional cartographic support for (b)(3) the Station, especially in view of [redacted] attitude. [redacted] (b)(3) [redacted] not to get any hopes up because probably nothing would come of the recommendations. [redacted] (b)(3) also met with [redacted] (b)(3) of the Map Library to insure the continued flow of maps to Saigon, and to alert [redacted] (b)(3) Attaché in Bangkok, of some of the procurement leads uncovered. [redacted] also held a meeting with [redacted] (b)(3) of the DDI's office in which he described the requirements and duties of (b)(3) a position to man the map room and provide cartographic support. The subsequent development of this position will be explained later.

He also contacted [redacted] (b)(3) of OTR's Vietnam orientation course to offer some briefing support on maps as a tool for the field officer, but [redacted] felt that there wasn't enough time to include any (b)(3) training of this type in his course.

During [redacted] TDY, production of several map series was already underway in the Far East Branch of Cartography. One was the revision of the South Vietnam province series produced originally [redacted] This series was being produced from the negatives sent [redacted] with format changes as well as substantive changes. The plate separation prepared [redacted] made it difficult to design the maps effectively, but a compromise method was worked out to make two versions of the series. One version had basic and administrative data in a light gray and brown so that the maps could be overlaid with red, blue, or green symbols. The other version had red administrative boundaries for use as a reference map. The former maps would be used by province offices and by [redacted] in Saigon, in reporting progress of the RDC program. The latter version, where the boundaries were highlighted, were to be used by everyone interested in locating administrative units in Vietnam down to the village level. A limited number of this latter version was to be bound. 40/ This was the only map series of its kind and was in great demand. Eventually it was revised and copied by the Vietnamese Government, completing the cycle.

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The second series was a regional version of the administrative maps, one for each of the four military regions (corps). This series was produced at 1:500,000 and served to consolidate information from each of the province maps into a single sheet by region. 41/

Of course, an administrative map of the entire country in one sheet was also produced. 42/

In March 1967 another series of maps was initiated as an outgrowth of both Station and Headquarters needs. It consisted of a page size map of each province and each corps to be bound in a handy notebook form. Copies were also printed in loose form. The purpose was to provide a convenient notebook size atlas for training, orientation, and reference, and to have base plates available to the intelligence production facilities on which additional data could be portrayed. Province officers in the field could also use the individual maps to illustrate their reporting. These maps proved to be popular items and 5000 copies had been distributed by the end of 1970. ___/ (See Attachment F)

4. A Second TDY

(b)(1)
(b)(3)

[redacted] was scheduled for [redacted] Deputy Chief CD/F, in early 1967, with a three week stop in Saigon to continue the work started in late 1966 by [redacted] 43/ When he arrived in Saigon, [redacted] found that cartographic support was in great demand and he cabled back to Headquarters for a number of items. He was swamped with the same kind of requests from Station personnel seeking cartographic advice that [redacted] had experienced. He wrote back "Came into the map room and got stuck for about 5 hours concerning a particular problem. I don't know

(b)(3)
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who these people will go to when there isn't a cartographer here, more than likely they'll just fumble around in the dark and do the best they can." 44/

[redacted] TDY was another holding effort until some more permanent solution could be devised to continue the Station's cartographic support. (b)(3)

describe his title + [illegible] again
last mentioned on p. 36

E. Map Specialist Position in Saigon, 1967-1970

A DDI vacancy notice was issued on 20 January 1967 which described [redacted]'s duties as running a miniature map reference library. 45/ The grade GS-7, did not attract any qualified candidates to apply for the position. Nothing was done about upgrading this position until later. The position was filled by [redacted] of NPIC who merely used the opportunity as a means to get to Saigon where he eventually transferred to a photo interpretation job. (b)(3) (b)(3) (b)(3)

In February 1968 the job was advertised again, this time at the grade of GS-09 to GS-11 and as a map specialist position. The description read: (b)(3)

> Incumbent is responsible for maintaining the map reference facility of [redacted] the Vietnam Station. Duties involve providing map support to Station elements, including the distribution and procurement of maps: [redacted] 46/ (b)(1) (b)(3)

[redacted] Special Assistant to the Director of OBGI, had replaced [redacted] and having more knowledge of (b)(3) (b)(3)

map problems, rewrote the job description. [redacted] had arrived in Saigon in November 1967. [redacted] of the Publication Division also of OBGI, was accepted for the map specialist position and reported to Saigon in April of 1968. [redacted] was a GS-08 map/graphics editor with some military experience in cartography with the U.S. Army in Tokyo. He was a significant improvement over [redacted] and provided the Station with some graphic production capability as well as maintenance of the map room. He had no experience as a research cartographer and could only supply limited support in this area. (b)(3) (b)(3) (b)(3) (b)(3)

Communications always seem to be insufficient between the field and Headquarters, and during this period there was the usual confusion. The Map Library was concerned over the lack of contact and tried to get some sort of progress report. Its efforts were never too successful and most contact had to wait until periods of home leave for Station personnel. Even though the map specialist had as part of his designated duties the running of a map library, the DDI had always made it clear that DDI personnel in Station positions were there primarily to lend support to the COS. Unfortunately, the quarterly reports prepared by [redacted] which could have shed some light on the activities of the map specialist, were never routed to the Map Library or the Cartography Division after they were sent back to Headquarters. 47/ (b)(3)

Some of the cartographic problems that the map specialist had to wrestle with were, in some cases, difficult assignments which could have used the experience of a professional cartographer. Maps were produced by [redacted] for briefing the Mission Council on infiltration routes used by the Viet Cong during the Tet offensive. Keeping track of the VC infrastructure and the Liberation Committees was another difficult research problem. In addition the map specialist provided maps and related material to organizations outside the Station such as: USAID, National War College, MACV, and the National Training Center. From July through September 1968, following the Tet offensive an average of 1000 maps were distributed per week. This was one of the highest demand periods. The demand dropped to an average of 400 maps per week during the next quarter. 48/ As a comparison, the Headquarters Map Library facility average distribution is only slightly higher.

(b)(3)

F. Personnel Reduction and the Decline of the Program, 1970

Because of the reduction of overseas personnel, the map specialist position was not renewed at the end of [redacted] tour in December 1969. After that, [redacted]

(b)(3)

(b)(3)

(b)(3)

[redacted] took over the duties of the map reference facility. She (b)(3)
shared these duties with two others in the section. [redacted] (b)(3)
was a member of the Cartography Division who had been sent to
Saigon in an assignment other than cartography. With her profess-
ional cartographic background and grade level, GS-13, she knew
the value of maps as tools to the field officer. Her fight to
maintain service was a losing battle against forces out of her
control. In response to Federal and Agency budget cuts, additional (b)(3)
personnel cutbacks were ordered at Saigon and all overseas stations
in 1970. [redacted] looked on the map reference (b)(3)
facility as marginal, and planned to close out the business. [redacted] (b)(3)
[redacted] insisted on retaining very basic map items as a minimum, but
when she went on home leave in November 1969 more of the map cases (b)(3)
were eliminated than had been planned. Later in June 1970 while she was
on emergency leave quite a number of maps were given to MACV. Many
of these were vital and had to be retrieved when she returned.
Regardless of this action, the Station's demands remained as strong
as ever. 49/ (b)(3)

After the final departure of [redacted] in June 1970, [redacted] (b)(3)
[redacted] asked (b)(3)
[redacted] (b)(3)
to take over the remains of the map reference facility from [redacted] (b)(3)

(b)(3)

If this could not be done, then the map orders would have to be referred back to Headquarters. MACV already had been told that they would have to service their requests for CIA maps through their own channels. [redacted] felt that cutting back any further would be impractical and decided to maintain a limited number of essential maps. He assigned the switchboard operator to watch over the map room as one of her duties. [redacted] replacement, [redacted] took over [redacted] and the map responsibility at the end of 1970. (b)(3) (b)(3) (b)(3) (b)(3)

Close cartographic and related map support to the Saigon Station has apparently returned to a situation similar to 1966, but the final outcome depends on the direction and requirements of different Station personnel as the U.S. military commitment winds down.

VIII. Conclusions

The early experience with OSS in supplying cartographic and related support in the field no doubt gave the early CIA cartographers expectations for a continued close relationship with the new Clandestine Services that were forming in the postwar intelligence organization. These expectations were soon proved in vain as compartmentation created a barrier to communication. At the same time the cartographers were busy developing programs to build a base for making cartographic support a vital part of the overall intelligence production activity of the Agency. When support became necessary, the Clandestine Services (CS) attempted to provide most of it internally through organizations such as RQM/OIS. They were charged with getting information within the Agency as well as outside in response to the requirements of the operating divisions. Occasionally, someone would make direct contact with cartography or another DDI component, and receive close support. Of course, a little more exposure of the operational mission became necessary to insure the best support. This was against policy and took some courage on the part of operational officers. [redacted] in the Guatemala operation, is an example of an officer (b)(3) who felt that close support was vital to the planning and execution of any operation.

In 1959, as a result of a study by the Inspector General, RQM/OIS

was abolished. The period between 1959 and 1963 proved, coincidentally, to be one of the most productive and one of the closests supporting periods in Cartography's relationship with the CS. Two major operations were running concurrently, Tibet and Cuba. Tibet became the first really broad support given to any operation. Cuba was an operation supported through the situation room and Geography Division, it never involved the full assets of Cartography because those assets were already spread thin with support to Tibet. This period was not without its problems. Since there was no coordinating unit, Cartography personnel often had to provide continuity in DDP programs in order to prevent duplicate requests from other operations officers. Most of this was due to the rotation of DDP personnel overseas. In September 1960, Cartography suggested a liaison position between ORR and DDP for the coordination of geographic and cartographic information. 50/

[redacted]

(b)(1)
(b)(3)

The Vietnam War and the build-up of the Saigon Station presented many opportunities for a wide range of close support activity, but unfortunately these never reached their full potential. With a few notable exceptions, the Vietnam War did not bring out the best in American motivations and performance. The same could be said of the Station personnel. Agency personnel were drawn to the Vietnam assignments, not by a sense of duty, but more for personal reasons. Family problems, stagnation problems, promotion problems, financial gain, and adventurism, all were factors in their decisions. The DDP had to draft personnel from other area divisions, which also created a deterrent of motivation. The DDI provided its quota of personnel, but never encouraged its top analyst to take any assignments beyond short TDY's. Senior DDP officers were continually frustrated by the lack of sufficient case officers and the necessity to rely on the constant turnover of personnel, with which there was no effective means of control, i.e., from other career services not under the direction of the DDP. All new DDI personnel had to prove themselves before they were accepted as part of the team. These and many other factors led to the erratic cartographic and map support activity. The Vietnam War did not bring about the opportunity for a full and close support role that was experienced in OSS. The Saigon Station cartographic support activity may improve as personnel and direction change.

In light of past experience with support to the CS, what has been

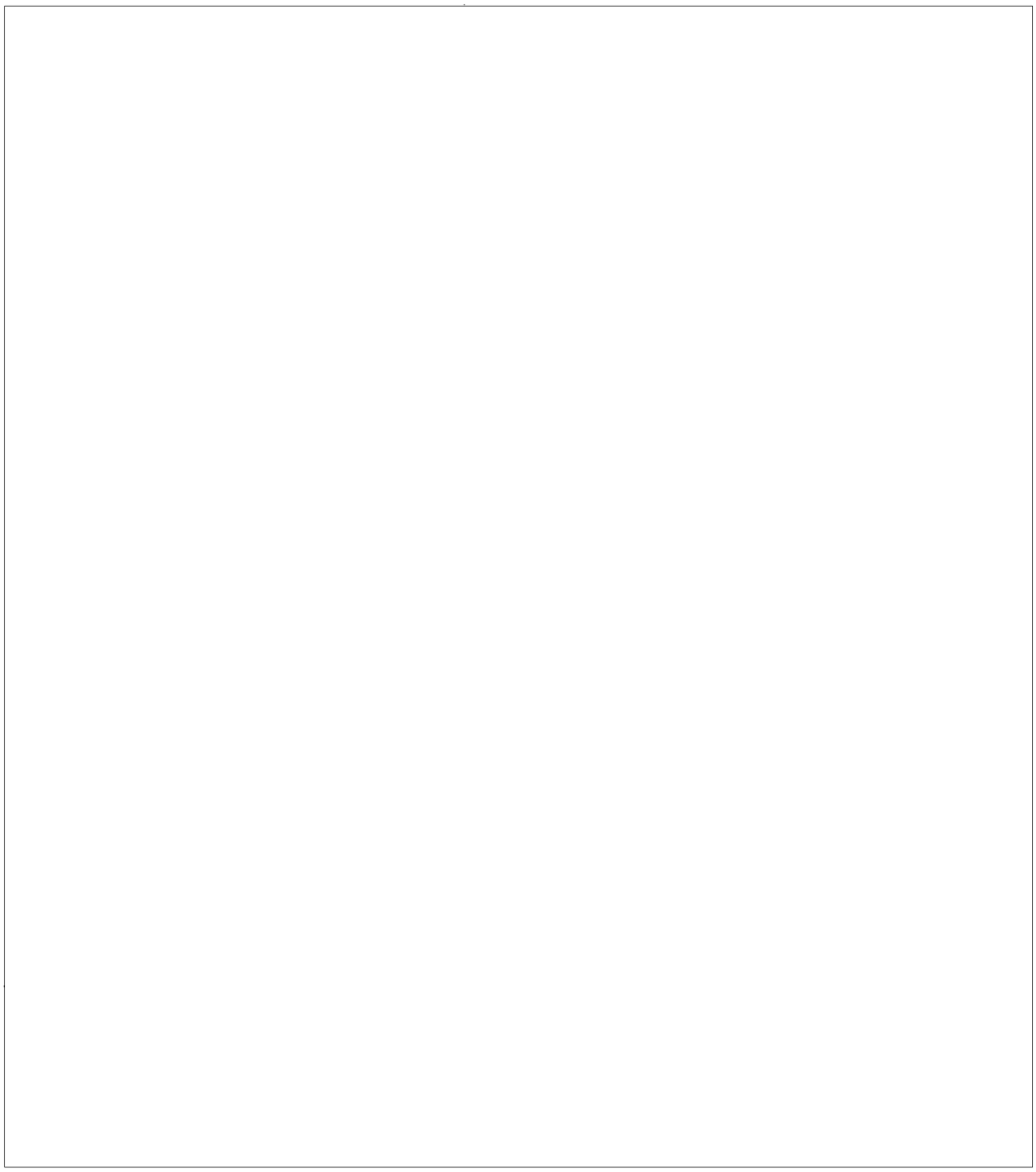
learned, and how should OBGI, and CD respond to CS support requirements in the 1970's? Certainly, compartmentation is not the problem it used to be, although it could reoccur. Support characterized by internal OBGI or CD compartmentation has proved to be an overly reactionary response and has never been an efficient way to use office assets. Training programs such as the Midcareer Executive Development Course, where middle level officers from all Directorates have come together in a frank review and appraisal of the total Agency, has done a considerable amount in breaking down communication barriers. The Agency has been emphasizing the need for an environment more conducive to communication, the necessity of maintaining a unity of function and purpose, and the discouragement of tribalism.

OBGI must maintain closer liaison with the CS, using the offices as much as possible. Cartography's support of the CS has had many high periods, but its support has only represented a small percentage of its total effort. Geography Division, on the other hand, must be careful that it does not become the exclusive research arm of the CS. (b)(1) (b)(3)

The 1970's may see a directional change in the activities and cover status of the CS, which could have a significant bearing on the nature of future support. Regardless, if operational support is required, it must be approached in OBGI as a team effort with the entire office's assets used in the most efficient and effective manner.

Appendix A. List of Persons Interviewed (arranged by chapter)

(b)(3)



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14. Interview, [redacted] with author (12 above) (b)(3)

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22. Interview, [redacted] with author 20 April 1971. S. (b)(3)

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24. [redacted] (b)(1) (b)(3)

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Foreword

There are several agencies in the United States Government which are engaged in the production of maps and charts. Their product characteristically presents the various physical and cultural features of the earth's surface in detail, at large scale, and is produced in large quantity. The market for such maps and charts is varied and extensive. A specialized category of maps, the thematic map is produced infrequently and only under special circumstances.

One agency of the United States Government is unique in that it is a significant producer of this specialized category of maps. The mission of the Central Intelligence Agency is to supply finished intelligence to the White House and to the Intelligence Community. The need for accurate, concise, rapid communication of finished intelligence requires the use of specially designed graphic materials; the thematic map (sometimes called the special subject map or topical map) is a vital element in the communication. Furthermore, in the process of fulfilling its obligations, the C.I.A. has a need for unique maps to be utilized in meeting its own peculiar analytical and operational requirements.

The C.I.A. has had to rely on its own resources in order to meet its peculiar map needs. While the products of other mappers are selectively utilized in the process of thematic mapping, the need for speed,

accuracy, relevance, clarity of communication, and security maintenance has made it necessary to develop the best possible thematic mapping capability entirely within its own structure. The result has been that the C.I.A. is a leading producer of thematic maps of high quality covering a wide range of topics.

It is the development of intelligence thematic mapping in the C.I.A. which is the subject of this history. The organizational development began immediately prior to the attack on Pearl Harbor in 1941 and was nurtured in the Coordinator of Information (C.O.I.), the Office of Strategic Services (OSS), the Department of State and since 1947 in the Central Intelligence Agency where it is now known as Cartography Division, Office of Basic and Geographic Intelligence. The writer of this paper has been continuously associated with this activity in a modest capacity since the latter days of the C.O.I.

I. Introduction

A. The Role of Cartography in Support of Intelligence

A wide variety of maps are part of the experience of most people. They range from the large scale, small area encyclopedic detail of the topographic quadrangles through medium scaled, larger area, more selective content of the aeronautical and hydrographic chart to the very small scale relatively large area coverage, and minimum content of the newspaper map with its large X showing yesterdays earthquake location in Turkey and little else.

Maps are used extensively in the planning of intelligence operations, in the analysis of collected intelligence, and in the final reporting of finished intelligence. In the first phase it is frequently possible to utilize existing maps produced by other agencies, especially when detailed geographic information is required, but in the latter phases special maps are needed.

The role of cartography in intelligence is to produce appropriate maps for use in the various phases of intelligence. Events of intelligence interest take place on the earth's surface and it is necessary to locate and describe them on the earth's surface in relation to each other and in relation to pertinent geographic features. This requirement is most often and most effectively met by the use of appropriate maps either by themselves or in coordination with textual presentation.

B. The Thematic Map is a Valuable Tool in Intelligence Support

While the CIA makes frequent use of all kinds of maps it has found that the special kind of map known as the thematic map is a most useful tool or medium for intelligence support. The use of thematic maps enables the I.O. to give clear, concise graphic treatment in map form to the pertinent elements involved in an intelligence problem or event. The elements of what it is, and where it is, are laid out clearly in relationship to the basic geographic factors involved in the event. In the situation when several intelligence items are shown their spatial relationship are also clearly shown.

The CIA mission to supply the White House and the Intelligence Community with finished intelligence involves the use of many kinds of maps from many sources in the collection and analysis of intelligence but the finished intelligence product requires the extensive use of the thematic map in communicating intelligence to the recipient or consumer. The essential properties of the thematic map make it most useful in the support of intelligence.

The principal characteristic of a thematic map is that it tells a story, it has a central theme. It never tells all about everything in the area mapped. It may tell all or little about a topic or selected number of topics in an area but is always limited to a theme as it's objective. The thematic map is designed to present information clearly, concisely, free from distracting superflous material. The thematic map is tailored specifically to the immediate intelligence objective and to get its message across to the reader quickly without causing him to ponder the meaning. In each case only that underlying geographic data required to support the map objective and to enhance the reader's appreciation of the subject will be included in the map; i.e. selected streams, significant bridges, towns figuring in the presentation of the theme, relief features involved, etc.

Maps showing roads, administrative divisions, soils, population distribution, housing types, unfolding events, or current events of intelligence interest are among the wide variety of maps which are classified as thematic maps. The intelligence requirement may call for the presentation of one or more topics on a single map, it may

C. Definition of the Thematic Map

The objective of a map is to show a phenomenon or group of phenomenon in relationship to the earth's surface and to each other. The phenomena shown may be natural or man-made features or events.

A familiar map type, the general reference map, primarily shows a large number of things in their geographic positional relationship (to the earth's surface) at moderate and small scales, but any interelationship are alluded to or implied. The number of items shown on such maps varies with the scales selected for such maps. Common examples of such maps are atlases, and wall maps.

The topographic map presents a detailed pattern of various cultural features existing in an area against a detailed background of the physical features of an area. Here again the relationship between items on the map are left to inference by the reader. This kind of map is usually produced at large scale covering a limited area. The topographic map sheets produced by the United States Geological Survey and other official mapping agencies in the United States and abroad are a well known examples of this type of map.

These two general types of maps are used by the intelligence officer as sources of information. The mission of the CIA does not require that this kind of map be produced by it and the established producers of these maps generally meet the needs of the CIA from normal production programs.

call for treatment of them in depth or only very lightly. As long as it tells a specific story it is a thematic map.

D. The Thematic Map as an Intelligence Document

The thematic map is generally used (designed) to support textual presentation of intelligence. It is not, in its full development, supported by text; it is a complete intelligence document in and of itself. Thematic maps contain all the information necessary to make a complete presentation of intelligence, and frequently are used as such. Thematic maps used with written documents serve as summary statements to give emphasis and focus to intelligence.

E. Basic Assumptions in the Development of Thematic Maps

Several basic initial assumptions or principles have been made in the development of thematic map production. These principles were taken in the beginning (1941) and have been followed through the succeeding years. No attempt has been made to discard or significantly modify them in this period.

The first of these assumptions has already been dealt with. It is the principle that a thematic map is a complete intelligence document not needing a body of supporting text to communicate its message.

The second principle is that thematic map production should be divided into three basic phases: compilation, construction, and reproduction.

Compilation is the research process in which data is selected, evaluated, and presented in the form of a manuscript map.

Construction (frequently called drafting) is that series of technical/mechanical operations by which finished map drawings are prepared ready for reporduction.

Reproduction is that phase which, utilizing the finished drawings, produces the required number of copies of the map in a usable form.

A third principle is that the three production phases in thematic mapping should be organized as separate tasks: Compilation should be handled by one person or unit, construction should be done by a different person or unit, and reproduction should be performed by a third unit. Earlier thematic mapping often combined

these phases to varying degrees in one person or unit but it was felt that more and better work could be accomplished if each phase were carried out by different individuals.

In order to further facilitate the production of quality thematic maps a fourth principle was adopted: Individuals engaged in each of the production phases would be specialists in the operation involved in those phases. Cartographic draftsmen would be employed in the construction of maps. Research geographers with cartographic experience would do the compilation. Reproduction would be done by trained photographers and printers. It was recognized that while personnel engaged in either of these areas might have facility in one or the other that it would be best to utilize the individuals' major skill in the most appropriate area. It was also recognized that each individual should have some understanding of the other phases so that he could do his task in a manner that would facilitate the work of the other specialists involved in the production of thematic maps.

A fifth assumption in the development of thematic mapping was that it should be performed essentially in the role of support to intelligence production. This position was taken in order to focus the efforts of a small and new group on a phase of the oeverall intelligence mission that it could handle effectively on a continuing basis. It does not preclude the production of individual maps projects outside of the normal support role under special circumstances.

F. Thematic mapping did not originate in the CIA. It has, however, reached a much higher level of development in the last three decades and the CIA has been and is in the forefront of that development. This history is confined to the development of thematic mapping as it has occurred in the CIA and its predecessors from 1941 through 1970.

II Thematic Map Production

The production of thematic maps in the C.I.A. is accomplished largely in the Cartography Division of the Office of Basic Intelligence; (CD/BGI) one of the three basic phases of production, heretofore noted, that of reproduction, is carried out in and by the Printing Services Division (PSD) of the Office of Logistics in DDS. While a limited number of rudimentary maps and cartograms are produced in graphics units outside of CD/BGI they are exceptions and are not included in this discussion. It is the development of thematic mapping practiced in CD/BGI today, which is the Standard of quality for such mapping, with which this history is concerned.

A brief expansion of the phases of production of thematic maps, including some subsidiary activities, is presented here before going into the more typically historical presentation of the subject.

II A. Compilation

There are several different activities in the compilation phase and they are all characteristically performed by one I.O. (Cartographer), hereafter referred to as a compiler, for each map project. This one aspect is enough to make thematic mapping in C.I.A. unique as other producers of such maps usually divide this phase among several individuals. Compilation is performed in the Cartographic Research Branch (CD/R) of the Cartography Division.

As CD/BGI performs mostly in a support role it reacts to requests for maps placed on it by other units in the C.I.A. or other U. S. Government Offices. Requests are evaluated by the CD/R and the appropriate response determined.

In some cases the request is presented in a complete package and little work is needed on the part of the compiler, in other cases the request is quite nebulous and the compiler is faced with a much more extensive problem . In any event the compiler conducts the necessary research, often in a wide range of source materials, to enable him to prepare a map to meet the needs of the requester. This may involve little more than the development of basic map data to provide a suitable background for the requestors subject matter, or it may involve the compiler's developing the requester's subject matter as well.

The compiler is responsible for designing the map to achieve the most effective presentation of the subject or theme, the most efficient means of construction, and reproduction.

The compilation phase culminates in the preparation of a hand-drawn map (a manuscript map or worksheet) which contains all the data that is to be included in the final printed maps. The compiler prepares written instructions (specifications) to the Technical Support Branch (CD/T) for the construction (drafting) of the various drawings which make up the map and from which the printed map will be made.

After the map is drafted the compiler is responsible for the review and edit of the drawings to be sure that the specifications have been adhered to and that it will fulfill it designed objective.

II B. Construction

The construction (drafting) phase is performed in the Technical Support Branch of the Cartography Division (CD/T). This phase consists of those technical/mechanical operations which are conducted to make final drawings of the map from the manuscript map and specifications prepared by CD/R. After editing in CD/T to determine that it meets CD quality standards. The subject of construction is given detailed treatment, in a separate history.

II C. Editing

Editing of the map prior to reproduction is necessary to assure substantial and technical accuracy of the map and that it will meet the objectives of the intelligence project for which it is being prepared. Editing of the drafting aspects of the map is done in CD/T. CD/R edits the map for substantial accuracy, and adherence to drafting specifications, and the design of the map; the requester is also drawn into the editing operation.

II D. Reproduction

In order for thematic maps to be utilized in intelligence, they need to be reproduced (printed) in suitable form, and in a sufficient number of copies to satisfy the consumers of the intelligence. A number of different reproduction systems are utilized depending on the number of copies needed and the complexity of the map. The reproduction method to be used is selected by CD/R, frequently in consultation with CD/T and PSD, and instructions for reproduction are prepared in CD/R.

The principal reproduction facility used by CD is PSD. Some special jobs have been done in other U.S. Government Agencies which have capabilities not found in PSD. CD presently has no reproduction facilities of its own which would permit the printing of finished maps.

II E. Special Units

Some request placed on CD do not require that the usual production phases be retained. Special units ad hoc task forces have been established to facilitate the production of such projects.

II F. Training

All personnel in CD/BGI have related training and usually some significant experience prior to joining the Division. Compilers have geographic research and cartography training. Draftsmen are trained in drafting, usually cartographic drafting. An extensive program of training is carried out for all personnel after entering on duty in order to fit them into the Division Program. Additional training is conducted to keep CD personnel abreast of new developments in their respective specialized fields.

II G. Relationships with Other Offices

CD/BGI maintains active working and consultative relationships with other offices in C.I.A., other U. S. Government Offices, and with private mapping organizations. Products are exchanged, Services rendered, and Consultations are conducted concerning new methods, materials, and techniques.

III. A. Laying The Foundations 1941-45

Thematic Mapping as presently known in the CIA had its origin in the Coordinator of Information (C.O.I.) in July 1941. The need for a coordinated intelligence service in the United States Government was recognized amidst the gathering clouds of World War II.in the later 1930's. The eventual result was a Presidential Order establishing the C.O.I. under the direction of Col. William J. Donovan who had been largely responsible for recognizing the need and for recommending ways to meet it.

Col. Donovan, a well known figure from World War I, was a prominent lawyer with extensive contacts in academic circles. In staffing the new kind of Agency, Col. Donovan drew heavily upon established scholars with varying disciplinary and regional specialties. [redacted] was the first geographer to be recruited. He in turn recommended another prominent geographer; [redacted] to develop what became the Geography Division in the Research and Analysis Branch (R&A) of the C.O.I. [redacted] a geographer who was especially interested in cartography was invited to join the group and became the first chief of the Cartography Section in October 1941. Others who joined the Section in this carly period were [redacted] The latter was to become the Chief of Cartography Section at the end of World War II and continue in that function as thematic mapping developed through successive organizations until 1965.

(b)(1)
(b)(3)
(b)(1)
(b)(3)
(b)(3)
(b)(3)

The Cartography Section was founded for the purpose of compiling, designing and drafting maps and charts for the use of the Coordinator of Information. The idea that the C.O.I. would need special subject maps and charts was perhaps a reflex action. The presence of professional geographers (voracious and critical consumers of maps) in the C.O.I., especially in the Geography Division and in the Cartography Section, would, however, insure that the maps produced would be geographically sound, ~~and~~ accurate, and of a high level of technical excellence. Early in 1942 the Section's products began to circulate widely in the War and Navy Departments, resulting in requests for thematic maps from various branches of the military Services. Other agencies learned of the maps produced in C.O.I. and began to ask for this kind of map. So, the purpose was expanded to include production for other appropriate U.S. Government agencies as it lay within the capability of the Cartography Section to do so.

The basic approach to thematic mapping and its organization for production were established by early 1942 under the leadership of [redacted] (b)(3) [redacted] In addition, many of the personnel who helped carry thematic mapping to its present level of development in the C.I.A. were brought into the new organization early during [redacted] leadership (1941-1945). (b)(3) A few of these are on duty today and others have recently retired. Many others contributed significantly during this period and returned to more academic pursuits upon the termination of World War II.

The Cartography Section was organized for the purpose of compiling, designing, and drafting custom-made intelligence maps, for which there was a definite need. In the first weeks of its existence the Section was faced with two major tasks. One task was to handle the large flow of requests for presentation materials for Col. Donovan and for maps to illustrate Geography Division reports. About two-thirds of the time of the Geographic Reports Section was devoted to the compilation of maps which the Cartography Section had to draft. The result of this flow of work was to cause the poorly organized Section to become a custom drafting unit before it could get its breath and decide what it would become. The original members of this Section were too well trained trained in geography, too imaginative, to be satisfied with drafting maps others had compiled. The urgency of the second task, that of establishing policies and procedures and organizing for efficient production of intelligence maps, was made very clear by the undesirable trend toward becoming a service organization. The second task consisted of the definition of the relationship of the Cartography Section to the rest of C.O.I. and other offices, determination of it's role in supplying intelligence maps in support of the war effort, division of the mapping function into appropriate phases for accurate and efficient production, the recruitment of appropriate personnel, and it's training, the acquisition of space and equipment. These two major tasks, production, and organization had to be undertaken more or less simultaneously; under the pressure of wartime emergency and with the dedication of all hands they were accomplished.

The Cartography Section was organized on a basic principle, that of the complete separation of map compilation (research) and map construction (drafting). No other mapping organization had ever existed based on the principle of separation of the basic phases of map construction. There was also a national lack of cartographic training especially in the area of thematic mapping. Consequently there was no source to which the Cartography Section could look for personnel for staffing or guidance in the detailed establishment of policies and procedures.

The organizers of this new activity were professional geographers who were familiar with established mapping operations and of the short comings of many existing maps in conveying information. They had individual experience in making maps to support their own geographic research activities, maps which were special subject or thematic maps. Lacking precedent for the kind of mapping organization that was being organized they decided to avoid the defects in established mapping organization which were inefficient or utilized poorly trained personnel.* The separation of the compilation and construction phases permitted the focus of professional (research) and technical (construction) personnel on the respective phases, which they were best qualified to do. Consequently professional personnel were recruited for their geographic knowledge and research ability, and technical personnel were recruited for their ability to use drafting tools and hopefully some design ability. After recruitment it was also necessary to train these individuals (!) in their respective phases of production to produce intelligence maps which were geographically and visually sound.

*The Map Division Branch of Research and Analysis September 1943 p11

Another basic principle adopted in these first months was that the intelligence map should be a self sustaining or complete intelligence document in itself. When removed from any document which it supported it would tell a story by itself; while the intelligence map would support a documentary presentation, and be a part of it, it would not need the document to support it as it would tell a whole story by itself.

The adoption of these principles coupled with the professional and technical competence of Cartography Section personnel prevented the Section from becoming a strictly service unit, and enabled it to take its place as a contributing partner in the production of intelligence and lead to the initiation of intelligence contributions in map form by the Cartography Section throughout its history.

III. B. The Evolution of the Basic Organization

1. The Coordinator of Information

With the establishment of the Cartography Section in October 1942 and the immediate requests made on it for cartographic service it was necessary to set policies, to organize for production, and to produce almost simultaneously. As stated earlier, two basic decisions made at this time largely set the pattern for the subsequent practice and development of thematic mapping in the C.O.I. and its successor organizations to the present time in the C.I.A. The decision to divide the two basic operation in map making and to perform them in distinctly separate units is the one to be considered here.

Prior to the establishment of the Cartography Section relatively little thought had been given to the organization of intelligence cartography. In fact the whole problem of intelligence, at least in the United States, was not well understood. There were three general methods of producing maps in practice at that time. The commercial method of mapping utilized highly supervised compilation by relatively poor personnel. The academic practice was to have a professional research man and a draftsman working shoulder to shoulder. A third method of mapping was that in which the professionally trained cartographer compiled, designed, and drafted his own map. The first method lacks the quality of personnel that is necessary for intelligence cartography (thematic mapping); it was, however, suited to such more routine operations as the Army Map Service and the Hydrographic Office. The academic method is inefficient and is

subject to inconsistency of accuracy and presentation. The third method was very little practiced in the United States and was ruled out.

It was necessary then to evolve a system of cartography for the C.O.I. which could operate in the field of intelligence. It would need to produce maps which were geographically and visually sound, and to produce them rapidly on a wide variety of topics. The two basic operations in map making were recognized as (being) compilation, and construction; the first of these is largely a professional research process and the other is more a technical/mechanical process. It was decided to separate these processes into two distinct units staffed by appropriately qualified personnel. This would enable personnel to focus on those parts of the process which they could do best, and production should be more efficiently controlled with a resultant high level of accuracy, consistency of presentation, and production.

The compilation operation was assigned to the compilation unit. The personnel of this unit were recruited for their geographic knowledge and research ability. The mission of this unit was to compile, design, and prepare drafting specifications for a wide range of special subject maps for intelligence purposes. The compilation unit was organized in sub-units, or teams, consisting of [redacted] similarly qualified cartographers (b)(1) (b)(3) each under the direct supervision of a Sr. Cartographer. This was done in order to establish close personal supervision and to insure consistency in work and product. No attempt was made to organize the sub-units on a topical or regional basis. Assignments of projects were made on the

basis of workload, complexity of the projects, and the relative experience and ability of the individual cartographer. The three compilation sub-units* reported directly to the Section Chief; there was no chief of compilation subordinate to the chief of the Cartography Section.

The second major operation in the map making process was concurrently organized as the Construction Unit. It's mission was to perform those technical/mechanical tasks necessary to prepare finished map drawings (fair drawings) from work sheets and specifications produced by the compilation unit(s). The larger part of it's personnel were designated as cartographic draftsman and were grouped in a drafting sub-unit which produced fair drawings ready for reproduction. The cartographic draftsman had varied experience and training; a few were draftsman, some had been artists, all had some familiarity with the usual drafting tools, and all were flexible.

A second sub-unit in the Construction Unit was the Composing Room which was established in the Spring of 1942 when a small letter press was procured. This unit was staffed by experienced printers and

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* An organization chart of 1 July 1944 shows three units although they are referred to a sub-unit in accompanying text. The relationship to the Chief of the Cartography Section, still a direct one, which required special techniques and procedures which didn't fit readily into the work of the Compilation Unit. The second function was to do research and experimental work in new materials and techniques for application to its own work and to that of the rest of the Section. It also trained draftsman in the methods and techniques of drafting special intelligence as developed by the Cartography Section.

was totally concerned with pre-printing of all names and words (type) and many of the Symbols used on maps produced by the Cartography Section.

The third sub-unit on the Construction Unit was called the Design Sub-unit. It was staffed by professional workers with experience in commercial art and design. There were two general functions assigned to this unit. One was to plan the layout and construction of special map projects. The second function was to develop methods and techniques to improve the quality and production of the maps.

The Spring of 1942 saw an innovation that was to be expanded in succeeding years. The Board of Economic Warfare (BEW) had a great need for maps of the kind that the Cartography Section was producing and proposed that it become a prime requester from be permitted to organize a cartography unit of its own. The Bureau of the Budget countered with a proposal that the C.O.I. do the maps for the BEW. The volume of requests was heavy and the distance between the BEW offices in Georgetown (D.C.) and the C.O.I. office at [redacted] were such it was decided to install an OSS Cartography Section controlled Staff in BEW to handle the map requests originating there. This was the first of what later became outposts of the Map Division of OSS. The arrangement continued until July 1943 when OSS had to recall its BEW assigned members in order to meet its other priority commitments. (b)(1) (b)(3)

The Cartography Section was unique in that it was organized by geographers to meet a new problem that of thematic mapping for intelligence. There was no precedent for it's organization and nobody of specifically trained personnel in the nation upon which to draw. The wartime urgency required organization and production to be accomplished concurrently. The map production process was analysed and divided into phases which would permit the application of special talents to more or

less specific task with consequent high levels of control, geographic and substantive accuracy, graphic design and production. Because it was the first of its kind it also had to train its recruits, regardless of previous experience, in the understanding of its objectives and specific methods and techniques of attaining. The basic organization and philosophy has existed with only minor modifications to the present time (1970) as the Cartography Division of OBGI.

III. B. The Evolution of the Basic Organization

2. The Office of Strategic Services

When the Office of Strategic Services (OSS) succeeded the C.O.I. in June 1942 the Cartography Section had approximately [redacted] members. (b)(1) (b)(3) The organization of the Section remained unchanged. There was a Compilation Unit consisting of three compilation sub-units, and a Construction Unit consisting of a construction sub-unit (Drafting Room, a Composing sub-unit (type shop) and the Design sub-unit. Each unit reported to the Section Chief through a Chief of Construction and a Chief of Construction respectively.*

The basic principles and organization had been established and the Section was less than a year old. Its product was becoming known as C.O.I., and later OSS, documents containing special subject maps circulated in the intelligence community with the result that, along with increasing requests for maps from within its own agency, other U.S. Government agencies began to request cartographic support from the Section. The Section was working to its full capacity utilizing considerable amounts of overtime, and two shifts in the Construction Unit.

In January 1943 the Geography Division of R&A Branch was disbanded and the Geographic Reports Section was divided among the several regional Divisions of R&A. The Cartography Section was joined with the Map Information Section to form the Map Division, R&A, OSS. [redacted] (b)(3) [redacted] previously Chief of the Cartography Section became Chief of the new Division. [redacted] (b)(3) who had been Chief of the Map Information Section became Deputy Chief of Map Division. [redacted] (b)(3)

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*The Cartography Section Chief was [redacted] (b)(3) The Chiefs of Compilation and Construction are identified ~~in this period~~ not clearly for the entire period 1941-1945

[redacted] was the new Chief of Cartography Section with [redacted] and [redacted] designated as Chiefs of Compilation and Construction Units respectively. (b)(3) (b)(3) (b)(3)

This reorganization had no significant effect on the organization of Cartography. It did, however, serve to strengthen the position of the Map Division in respect to R&A Branch, and the rest of OSS. Mapping activity in the OSS was now centered in one Division among other Divisions in the R&A Branch and was no longer considered as a parochial appendage of the old Geography Division. The Cartography Section was now an individual contributing partner in intelligence production and its contacts became more wide ranging both within and without the OSS.

Two additional Sections, one of which was related to thematic mapping, were added to the Map Division on March 15, 1943 without affecting the organization of Cartography Section. The Topographic Models Section, was created in response to a need for accurate terrain models to be used for briefing, operational planning, pilot training, radar research and navigation, and terrain intelligence reporting. While [redacted] the Chief of Topographic Models Section had some experience in making terrain models, this was a new field and trained personnel were not available to form a production staff. There was a very urgent need for models and without much precedent to guide it the Section was free to devise its own production methods and techniques. Most of the personnel of the Section were geographers who were trained on the job. Initially people were borrowed from the Cartography and Map Information Sections to perform research for and actual production of models until personnel could be recruited specifically for the new Section. Within three weeks (b)(3)

of its establishment two models had been produced. The models were enthusiastically received and in great demand by all who saw them. By the end of December 1944 sixty four original models and one hundred and seventy three duplicates had been produced and the Section had a staff of [redacted] (b)(1) (b)(3)

The Topographic Models Section was housed in Cartography Section space in South Building for a very short time before it found its home in the [redacted] (b)(1) (b)(3)

[redacted] in Washington, D.C. The Department of the Interior made all of its own model making equipment available to the Section so it could begin construction with a minimum of delay.

While the work of the Section was certainly map related and its product a special kind of map its methods and techniques were uniquely specialized. It properly belonged in the Map Division but it did not fit into the usual operations of the Cartography Section which was engaged in the production of a wide variety of special subject maps and was not made part of that Section. Its major effect on Cartography Section was that it utilized Cartography Section personnel & expertise on a temporary basis and eventually its products came to be used as background in some of the Cartography Section products.

In the fall of 1942 the Cartography Section placed its first request on the Color Photography Unit of the Visual Presentation Division (V.P.). The request was for color reproductions of several maps of Morocco to be included in the Strategic Survey. A subsequent request

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*WASH-Hist off-OP-23 History of the Map Division p15
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for color reproduction of vol. II (Russia) of the Great Soviet Atlas was made by Map Division. The USSR would not make copies available to the United States and there were only two copies existing in the United States. The success of this kind of production lead to an increasing number of requests from Map Division until about 42% of the Unit's work was done for it. The Color Photography Unit was originally established to provide a limited number of color copies of V.P. jobs at moderate cost. Subsequent to the advent of OSS less importance was placed on color photographic work in V.P. and in late 1942 or early 1943 it was found that only about ~~45%~~ 4.5% of the Unit's work was being done for V.P. so in June 1943 the Unit was transferred to Map Division as the Special Photography Section with [redacted] continuing as its Chief.* (b)(3)

The transfer of Special Photography Section to Map Division took place at about the same time that the Topographic Models Section was getting into production. As the production of terrain models was a relatively slow and tedious process the demand for these high quality products immediately outstripped the capabilities of the Section. Special Photography Section was called on to photograph the terrain models in color, and in black and white so that at least a two dimension version could be made available to users. By September 1943 90% of Special Photography Section's work involved photographing and preparing copies of the models for intelligence use. These copies were widely utilized by United States and several allied agencies.

The Special Photography Section was more than a professional photographic unit. It was also active in researching processes

*History of the Map Division R&D June 1941-Sept. 1944 p. 24

and equipment to improve photography and it took on many special assignments in this field for various agencies of the U.S. Government. While not related to cartography as such, Special Photographic Section did supply a most valuable service to Map Division which provided an organizational home for it when its original parent lost interest in it.

In June 1945, after the conclusion of the war in Europe, circumstances caused the Special Photography Section and the Topographic Models Section to be transferred to the War Department.* The move was effected in early July 1945 and included all equipment and personnel of which there were [redacted] persons respectively. (b)(1) (b)(3)

With this transfer the Map Division was once again composed of its two basic Sections Cartography and Map Information and thematic mapping was still organized essentially as it was in early 1942. Now with end of World War II in sight plans were beginning to be made for possible post war organization of thematic mapping in the United States Government.

With the end of World War II in September 1945 the national rush to return to normalcy, whatever that might be, resulted in the liquidation of many U.S. Government agencies which had been established under the emergency pressures of a war for which the country was largely unprepared. The liquidation ceremony of the OSS in the Riverside Stadium on 26th St. N.W. in Washington D.C. took place on 30 September 1945. For many of us it was an occasion fraught wiht mixed emotions. While it was recognized that the end of the War would necessarily result in the termination of many activities brought on by that emergency, it was also recognized that some intelligence activities should be retained in the governmental structure in order that we be better prepared to cope with problems affecting our national security in the future. There was a sense of (elation) (exhilaration) satisfaction in the knowledge of having contributed affectively in the prosecution of the War in a way which had not been done before. There was, especially in the R&A Branch, the consciousness that a new dimension had been introduced into the field of intelligence. Was this dimension, research and analysis, to be discarded and would national intelligence too return to its normal ways?

The Map Division was unique and it was a distinct part of the new dimension. The Map Information Section in its procurement, analysis and dissemination of all kinds of maps had put map intelligence on a sound and effective footing establishing it as a recognized intelligence activity. The Cartography Section, combining geographic knowledge and research ability with technical skill, had developed the thematic map into a vital supporting element to intelligence and beyond that to the level of a complete intelligence document itself.

With the formal liquidation of the OSS many of its components were assigned to various appropriate agencies of the United States Government. The Research and Analysis Branch was placed in the Interim Research Intelligence Service (IRIS) of the Department of State. Here the Cartography Section found a home where it could continue to produce maps for projects in hand and for new projects resulting from the efforts to organize the peace. Also it proved an opportunity to formulate plans for the organization and establishment of thematic mapping in peace time.

In November 1945 the Cartography Section was reorganized. Personnel changes were frequent as people left suddenly to return to their pre-war (b)(1) (b)(3) occupations. By the end of December 1945 there were [redacted] names on the personnel rostor of the Cartography Section. [redacted] was (b)(3) Chief of the Section. There were three compilation units under [redacted] (b)(3) [redacted] respectively. [redacted] (b)(3) [redacted] was in charge of the Construction Unit.

The end of the period in which the foundations were laid was marked by two events. One was the planning for and the shift from the wartime excitement in OSS to the more prosaic yet uncertain future of the Department of State in peacetime.

The other event was the resignation of the man who founded and lead the Cartography Section from its organization in 1941 until he was made Chief of the Map Division in January 1943. [redacted] was (b)(3) always closely concerned with the activities of the Cartography Section throughout this entire period and the Section continued to think of him as one of its members also. It was recognized by those remaining that basic policies and approaches had been established during [redacted] leader- (b)(3)

ship and that they were the basis on which to proceed in the future. With these two occurances one chapter in the development of thematic mapping was closed and a new one begun.

III. C. Nature and Volume of Production

As described earlier the Cartography Section was afforded little opportunity for prospective reflection upon its role and method of operation before it was called upon to provide cartographic support to the C.O.I. Simultaneously with its establishment it had to define its role, organize itself for production, and produce. The pressure of the impending war and its open outbreak upon a country which was lacking in appropriate intelligence upon which to base its conduct of a war required it to be this way.

The initial production consisted of presentation materials for the Director and sketch maps to illustrate reports of the Geographic Reports Section. Records of these items aren't available in the files at this date (1971). As the Section became better organized and staffed its founders could devote time to administration rather than cartography and we find a map No. 1 dated December 11, 1941, entitled Supply Routes to the Russian Front. Other maps dealing with various topics followed and as the product became known through the dissemination of C.O.I. reports and studies other U.S. government agencies began to seek cartographic support from the C.O.I. Support was given to all appropriate requesters when it was practical to do so.

Somewhere between twenty-five and thirty United States Government Agencies received varying amounts of cartographic support from the Cartography Section. The larger number of these agencies are listed under the heading Service Agencies and included various offices in Joint Chiefs of Staff, the War Department, the Navy Department. The

Strategic Surveys of the Military Intelligence Service (MIS) was one of the first programs for which the Section produced maps. These dwindled in importance as the C.O.I. and OSS Topographical Surveys came into being. The first of these, which preceded the allied landings in North Africa in November 1942, illustrated the capability of the Cartography Section only nine monthes after its founding. Between a Saturday noon and the following Monday noon twenty-five maps were initiated, completed and reproduced in seventy-five copies each; similar maps were done later on other areas at a somewhat slower pace and of better quality.

In the spring of 1943 contact was made with the Joint War Plans Committee of the Joint Chiefs of Staff which for a while was the leading requestor of map service from the Section. On several occasions cartographers found themselves walking with a kit of tools to the office of the JWPC to perform cartographic service on maps which had to be done there for reasons of security. While the Section had close contact with this office throughout the War ~~but~~ the total amount of direct support rendered was minor in relation to its total production.

The need for constant support in the Operations Operative Division of the War Department lead to the assignment of [redacted] to that office in late 1942. He remained there during the rest of the War providing direction and skill for daily cartographic support of the Chief of Staff. (b)(3)

The Office of Naval Intelligence (ONI) was a frequent recipient of Section Support. The ONI weekly regularly carried maps done in OSS each week.

The Joint Army Navy Intelligence Study (JANIS) program was begun in this period and from ~~late in~~ mid - 1943 ~~on~~, the Section was engaged in producing maps for the JANIS. The program, modified quite a bit, continues today as the National Intelligence Survey (NIS). This is the only program begun in this founding period which exists in Cartography Section today.

During the last portion of this period , 1945, the Service Agencies as a group constituted the largest requestor of Section maps. At the beginning of 1945 the proportion of man-hours spent on their requests was about 52% (4,%%) hours). The proportion varied reaching 30% (2,550 hours) in April but rebounding to 63% (5175 hours) in July and August respectively as the War in Europe ended and full attention was directed toward Asia. With the sudden end of the War in August the requirements which had been closely associated with Strategic Planning and Operations dwindled and by December 1945 these agencies received only 16% (665 hours) of a markedly reduced number of overall man-hours expended by Cartography Section. Throughout this year the JANIS program regularly absorbed about half (46%) of the man-hours spent in support of the service agencies.

Even while the conflict was in full swing and with the victory in sight plans were being formulated for the post hostilities organization in the countries to be occupied. A great deal of attention was given to the production of administrative, population, economic maps of the area to support post-war planning. A number of such maps were made of Germany and central European countries. A program known as CAHSA (Civil Affairs Holding and Staging Area) was undertaken by the Civil Affairs Division (CAD).

in anticipation of the eventual military occupation of Japan. As part of this program Cartography Section undertook to help establish the compilation operation at Fort Ord, California. The compiled manuscript maps were forwarded to the Section in Headquarters where they were reviewed, drafted and reproduced for the program. These were generalized administrative maps of Japan, individual prefecture (province) maps, and detailed maps of the Ken (counties) of Japan which would be necessary for the occupation force ~~produc~~ ~~in this program.~~ [redacted] (b)(3) Chief of the Cartography Section spent a month at CAHSA in the Spring of 1945 establishing the compilation activity at CAHSA. The War ended shortly after the cartography program got underway but as the maps were intended for occupation needs the program continued and formed a significant unit of the Section's postwar production in Headquarters.

The second largest consumer of the Section's effort was its parent organization(s), the OSS (including COI) and in the last three months of 1945 IRIS. During the last fourteen months of record in this period 27% of the man-hours worked by the Section were on projects for various components of the OSS and especially for the R&A Branch. As with the Service Agencies this proportion fluctuated rather widely from month to month ranging from a low of 16% in the first month following the dissolution of OSS to 36% in November 1944 and again in December 1945.

While Cartographic support to non-service agencies continued throughout this period it seldom accounted for more than 5% of the man-hours worked judging by the record available for 1945. The Department of State, The Department of the Interior, Foreign Economic Administration (FEA),

formerly the BEW) United Nations Relief and Rehabilitation Administration, and the High Commissioner for the Philippines (HCP) are listed in this group this year. There was a flurry of work done for the Department of State in March and April of 1945 when 17% of the man-hours spent was on projects for that Department. In July only 1% of the Section's effort was directed toward this requestor. The amount of time spent on non-service agency requests rose at the end of the year as total man-hours used dropped sharply with the end of the War and Service Agencies no longer required Cartography Section service as before.

The last claimant of Cartography Section time was its administrative component which utilized a rather steady 19% (average) of total man-hours expended during 1945.

Other programs and other agencies were served by the Section. A list of most of the agencies served is found in the Appendix.

Cartography Section production during this period typifies thematic mapping. Any topic that can possibly be presented in any form was handled. A summary of the type of maps prepared by the Section by the end of FY 1943 is characteristic of the kinds of maps produced during this period. A total of 2,861 maps are listed as having been produced during the period October 1941 thru June 1943. The variety is characteristic of the topics treated in this period but the proportion of each general type changed with the intensification of war in Europe and the Pacific. The summary groups thirty six subject areas into twelve broad categories. Two-thirds (65%) of the total number of maps were rather closely divided between four broad categories:

1. Economic 18%

   General

   Industry & manufacturing

   Agriculture and Land utilization

   Fishing

   Natural resources, mining, lumber, oil

   Shipping

   Public utilities, water supply electric power, gas

2. Geographic 17%

   Terrain and beach maps

   /NOTE: (Probably) other physical maps but under other titles; beach maps may be Strategic or Operational/

   General

   (Includes ONI maps and many small island maps)

3. Operational 16%

   Bombing objectives

   Airline distances

   Strategic Planning (for JWPC etc.)

   Historical (chiefly War Front Maps, Situation Maps)

4. Transportation 14%

   General

   Land routes

   Water routes

   Airlines, airfields, facilities

   Roads

   Railroads (includes administration, facilities, profiles etc.)

The remaining 35% of production to the end of June 1943 was widely distributed among the following eight categories:

5.	Ports and town plans	9%
6.	Base maps	6%
7.	Political	5%
	Administrative	
	Movements (parties)	
8.	Population	4%
	Distribution and density	
	Ethnic	
	Religions	
9.	Communications	3%
10.	Weather and climate	3%
11.	Strategic	3%
12.	Miscellaneous	2%
	Soldiers Handbook	
	A.S.T.P. Manuals	
	Other	

The wide range of topics listed here is a direct reflection of the lack of organized comprehensive intelligence on foreign countries at that time. The outbreak of World War II caught the United States without sufficient knowledge of the various countries and areas of the world to permit the efficient conduct of a war or diplomacy. There was a frantic rush to remedy this difficiency concurrently with the conduct of a two-theatre war.

The emphasis on economic, geographic, operational and transportation topics represented the effort to develop information regarding the vital factors in the enemies capability to wage war, a knowledge of the basic geographic elements involved, and at the same time to conduct military operations against him. Other topics, deemed of secondary importance at this time, would receive more attention as the war drew nearer its conclusion and would be more important in the production of the Section at the end of this period.

The volume of maps produced during the initial period of the Section's existance was rather remarkable. Beginning in October 1941 with a very small staff it had produced about 125 items by the end of the year. As it became organized and secured personnel it increased its volume and departed from the sketch map type illustration to the production of maps which were more complete intelligence items. In June 1942 something over 600 maps had been produced. As the country got more fully into World War II the tempo of production stepped up and by the end of June 1943 2861 maps are recorded as having been produced.* Monthly reports for the period March-December 1944 record the completion of 1,115 maps, an average of 111 completions per month. During the next year, 1945, a total of 880 maps were completed. This later period saw the end of the war in Europe, the end of the war in Asia and consequent reduction in production of maps.

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*History of the Map Division June 1941 - September 1944
Washington R&A Branch Historics
Washington Hist Off. op - 23
Folder 46 Box 32

An assessment of the existing records indicates that ~~Judging from the map numbers of projects being worked on just be-~~ between 8,000 and 9200 ~~fore V-J day~~ something ~~over~~ 8,000 maps were produced in the period 1941-1945 by the Cartography Section. Single file copies of many of these items are in the files but many maps which were done in limited numbers of copies and which were highly classified were destroyed at the end of the war. Nevertheless there are sufficient maps on hand to show the wide variety of topics and method of treatment, the range, from small simple hand lettered one color sketch maps to maximum size, multicolored maps utilizing various projections and pre-printed type and symbols.

III. Compilation and Research

The compilation and research activities performed by the compilation units of the Cartography Section distinguished this Section from other offices in government which made a similar type of map. These other units were essentially drafting room whose members could draft but who were not trained geographers or research personnel. The other units combined both compilation, design, and drafting in one unit.

As the Cartography Section was cast in a supporting role it made maps for other offices who were engaged in the preparation of intelligence reports on a wide range of topics. The thematic topic of a map was supplied by a requestor needing a map to give focus to his report. In conference with the requestor real objectives of the project were defined.

The compiler was then responsible for: 1) the preparation of an accurrate base map suitable for the objectives of the project; 2) designing a map which showed the subject matter in an effective way; the preparation of a manuscript map containing all data which would appear in the final map; 3) the preparation of written instructions to be followed by the Construction Unit in drafting the finished drawings; 4) the selection of the appropriate means of reproduction of the final map and writing instructions therefore; and 5) the conduct of necessary research to do all this.

In most cases the compiler's research activities focussed on assuring the accuracy and soundness of the basic geographic data appearing in the base map. The thematic material was usually provided by a substantive specialist in the particular field being portrayed in map form.

The compiler leaned heavily on his available library source, the Map Information Section, to get him the best source maps for his purposes and from which he made his selection. Compilers were mostly trained geographers and were employed for their broad geographic knowledge and research and analytic abilities. Most of them had some simple cartographic training, and had worked with maps extensively in their college courses.

The compiler never did function as unquestioning processor of the results of some other analysts research. His geographic training, where in he at least sipped from many different subject cups, often lead him to question some aspects of the material he was given to put on his map. The requesting analyst could usually explain the seeming contradiction but the compiler often came up with slippages in fact or in meaning which were significant. The requestor also was brought in to check the work-sheet and the final drawings for substantive accuracy. This attitude prevented errors and also made the compiler a recognized part of the team especially as any apparent discrepancies were identified in a constructive cooperative manner. Hence ~~the recognition~~ was recognized of Cartography as a support activity rather than a service organization.

The visible product of the compiler's activity was the manuscript map or work sheet. This was the synthesis of all data which would appear on the final map. It was usually prepared on medium weight tracing paper and usually done in colored pencils as it was faster than if ink had been used. Written instructions were prepared by the compiler which were to be followed by the Construction Unit in preparing the final drawings of

The map from which reproduced copies would be made. The reproduction plan was also prepared by the compiler.

During the compilation and design process the compiler often conferred with the Construction and Design Units of the Cartography Section in order to achieve the most effective map from the point of view of presentation, the intelligence objectives, and ease of drafting and reproduction. ~~These~~ Such interunit cooperation coupled with close liaison with the Map Information Section as well as with the requesting offices resulted in the maps being a true team product to which several experts had lent their peculiar talents.

The compilation function in the Cartography Section was organized for effective supervision. Three manageable units of from [redacted] compilers each headed by a Sr. Cartographer made up the Section. Assignments of projects generally were made on the basis of priority and available manpower. As there were no national standards for thematic cartographic training there was a wide variety in the degree of such skills available; each compilation unit was made up of compilers reflecting this variation. The personnel recruited were mostly geographers selected for their ~~and they had~~ research ability. An effort was made to assign the more complicated and difficult projects to the more experienced and better trained compilers. It was often impossible to match projects to personnel in this way so compilers frequently learned at a rapid rate. There was no concerted effort to match cartographic assignments to the regional or topical expertise of individual compilers. The work load was too often concentrated in a very few areas, or one area, and it was necessary to employ all hands wherever they were needed.

(b)(1)
(b)(3)

In addition to their geographic knowledge,

As the production of thematic maps was a new activity and little or no precedent existed the Sr. Cartographers worked closely with the compilers in order to establish a desirable level of uniformity in the approach to end execution of thematic map production. This was not an attempt to set up rigid bounds but it was designed to maintain the basic principles of, the separation of compilation and construction, and that thematic maps should be intelligence documents in their own right. Also it was useful in establishing the total teem concept in the approach to thematic mapping, while leaving some room for individual expression.

One factor of life in the Cartography Section was the need to educate the other offices in COI and OSS to the need for and use of maps in intelligence. When this was done the demand for cartographic support was constant but it seemed to need repetition from time to time as personnel in the other components changed.

The founder of the Cartography Section, [redacted] was the (b)(3)
first draftsman. He was also the entire Section from mid October 1941, well into November by Nov. 4.* He had drawn six maps, had them duplicated, and given other assistance on two maps for the East European Section of the Geography Division. The initial tools were brought from his home and paper and tracing linen, etc. were promoted as best (b)(1) (b)(3)
they could be locally.

By the end of the year [redacted] cartographer had been recruited. This gave [redacted] time to think about the direction (b)(3)
of which he should go and the nucleus of the Construction Unit was in being. One of those recruited in November 1941, was [redacted] (b)(3)
He was an experienced draftsmen and was chief of construction, but equally important, he knew his way around government channels and was instrumental in getting supplies and equipment for the new Section.

One of the draftsmen who came into the Section at this time was [redacted] who soon became a cartographer and from 1946 to 1965 (b)(3)
was the chief of the cartography operation through its various designation of Branch, Section, Division.

The basic function of the Construction unit was to prepare finished drawings of maps which had been compiled by cartographers in the compilation unit(s) from which copies would be reproduced. Most of the drafting was done on medium weight tracing paper, using Le Roy pens, some crow quill, paysant pens, ruling pens, etc., as was characteristic of drafting at the time. Tracing linen, ~~which had been widely used~~, was used very little and was dropped early as it was harder to handle in many ways especially in making multi-plate maps.

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*1st Monthly Report of Cartographic Section, Nov. 4, 1941, Job 54-335, Box 1.

Initially all symbols were drafted by hand using various pens. All names were either free-hand lettered or more characteristically done with Le Roy templetes and pens.

As noted earler the Construction Unit was composed of a Drafting unit, a Design unit and a composing unit. The drafting unit went into operation immediately as a one man Section, [redacted] (b)(3) ahead as soon as it got some personnel. The Design unit was activated when [redacted] (b)(3) came in early in 1942 and he took over that function. His initial activity was largely concerned with the appearance of maps, the symbols and type to be used and with indoctrinating the cartographers in these phases of design.

In the Spring of 1942 a small letter press was procures and the composing unit was in being. A printer [redacted] (b)(3) was the first man in this unit which was under the supervision of the construction chief. This acquistion opened the way to the eventual use of preprinted symbols and names (type) to be used on the Section's maps. This permitted the draftsmen to focus more on the drafting of lines, and reduced the amount of time spent in drafting symbols, and names. Standardized symbols could be printed routinely and held in a file until needed. The selected names could be printed in the composing unit while the drafting unit was performing other parts of the construction phase. Both symbols and names could be affixed to the map by the use of adhesives.

The first preprinted, or stick-up, type used sucessfully on a large scale was printed on rice-paper. It was hard to use as the paper had no adhesive backing. A solution of acetone and Duco cement was brushed on the printed name after it was placed in position on the map plate. The rice paper was porous and the solution quickly penetrated to the

map drawing surface. The Acetone evaporated rapidly leaving the Duco cement holding the type in place. If a false move were made in the process and the name was not properly located the process had to be repeated and the name repositioned. This system was faster than Le Roy lettering and also achieved a wider range of type styles and sizes and a much higher uniformity of type quality than heretofore. One of the earliest maps incorporating stick-up type is: map 1256 The Solomon Islands.

In June 1943 after the acquistion of a Chandler-Price Platen Press the first successful impressions were made on a material called Dura-Seal. This material was a transparent film with an adhesive backing. Symbols and type could be printed on it and affixed to the map by merely removing a protective covering from the back and pressing it to the face of the map by hand. It could also be moved around relatively easily. The consumption of Acetone and Duco cement dropped markedly and the process of adding stick-up symbols and type was speeded up. The use of Dura-Seal continued throughout this period.

The Design Unit played an important rôle in the Cartography Section during this period. The personnel in this Unit fluctuated during this period. [redacted] were both (b)(3) experienced designers prior to coming to the Cartography Section and they were the principal members of the Design Unit in this period. [redacted] and initiated the work prior to taking on other (b)(3) duties in the Map Division. [redacted] was the Unit Chief during the later (b)(3) part of this period during which he raised the level of relief represen-

tation in OSS maps to a high degree.*

The Design Unit was engaged in a constant search for new materials and techniques to be used in producing thematic maps. It also constructed special projects which involved unusual presentation problems including the use of air brush, and terrain representation.

During the period 1944-45 this Unit was given position of authority which the design function has not enjoyed since then. The compilers were required to get approval of the design of their maps prior to submission to the Construction Unit for drafting. This step did serve to improve the level of design of the maps produced by the Section and probably was responsible for what was known as the OSS look to the maps. Since this period design has been subjected to cooperative consultation and friendly persuasion with the compiler having defacto responsibility.

The workload was very heavy during the war years and the pressure to meet requirements was often intense. Many hours of overtime were worked in the early years and in 1942 and 1943 the drafting unit was on two shifts as there was not space to house all the draftsmen needed to handle the load at one time. Yet the Construction Unit met its commitments and established the precedent of continually seeking new materials and new ways for constructing maps.

[redacted] was described as "the outstanding cartographer in relief representation in the country" (b)(3)

Letter dated 27 July 1943
From: [redacted]
To : [redacted]

in chrono file
job 52-7
box 2

(b)(3)

III. F Editing

No research item can be published without an edit, a review for accuracy and clarity of presentation. This is especially true of the product of the Cartography Section. The Section never had an editorial unit nor editor as such during this period. The editorial function was the responsibility of the compiler and the requestor. Each of these checked the manuscript may for accuracy: the requestor was responsible for substantive matter; the compiler was responsible for the accuracy of the base map and the overall design of the map. Naturally these officers looked over the fence and frequently supplied a cross check on each other.

The practice of requiring a third party, a compiler who was not familiar with the map project, to review the map for clarity, soundness, accuracy was established in this period and continues to the present time. Many inconsistencies and omissions were detected in this way before the map was published.

The problem of checking or editing was heightened in the case of multi-plate maps. The usual drafting medium was translucent tracing paper. When several sheets of this material were placed in position one above the other it was very difficult to read the material in the sandwich against the manuscript. This problem was lessened to a large degree during the period of JANIS production which

began in 1943. Editing was carried out largely as before but a new factor was added. The JANIS maps were subjected to an editing process outside the Section and in order to carry it out affectively color profs were produced in a required number of copies. The production of Ansco color proofs, essentially color photographs, with all data shown in correct position and symbols, approximate color, and on one sheet of paper made the editing process quicker, less painful, and immensely more accurate. The requestor and the compiler still checked the map in the fair drawing stage, however, in order to present the most accurate proof copy possible to the final editing process in JISPB. The Ansco color proof technique was not used for other than JANIS maps with very few exceptions; it was expensive and added a time factor to other projects with very short deadlines which made it impractical.

It was at this period ~~JANIS~~ that geographic names standardization was introduced on an inter-agency scale. The Board on Geographic names participated in the JANIS and provided approved Standard Names for the JANIS. The Research and Analysis Branch of OSS had established a Committee on Place Name in October of 1942 to establish standards for names to be used in R & A reports but this new move lead to the standardization of names on a wider scale.

The Cartography Section stood to benefit from both of these programs to standardize names. Requesters frequently had their own ideas concerning proper name usage and this often lead to different names for the same feature appearing in one report or a series of reports involving more than one analyst. The cartographer was often caught in the middle,and approach to standardization names helped him greatly.

III. G. Reproduction

With the exception of the presentation-type maps produced by the Section, all maps were reproduced in various numbers of copies to satisfy the peculiar requirements of each project. Reproduction was performed mostly in the Reproduction Branch of the OSS. Initially, any system available was used as most of the production was in black and white. Photostat was the most common process used in the first few months as it was available, simple, fast, relatively inexpensive, and the need was for a few copies of maps to illustrate a large number of copies of reports.

Few maps were printed in color in the first few months and they were printed elsewhere. The first maps printed in color were at the request of the Far East Division of Military Intelligence Service (MIS) War Department, and they were printed at the Engineer Reproduction Plant of the Army War College. The Section utilized other sources for color printing for some time until the Reproduction Branch grew enough to handle all its requests.

The writer recalls a request placed on the main United States Government Printing Office (U.S.G.P.O.) to print a map which involved one color and black. This particular plant lived on black and white printing and

had little, if any, experience in color printing, especially in the use of screens to create tones of a color. It was necessary for this neophyte in the field of intelligence mapping, who knew less about printing, to travel to the GPO plant and in a few minutes tell and experienced printer almost twice his age just how to print his map! The printed map was not up to expectation, but it was a step along the way.

As the volume of map work increased through 1942 and 1943 and the complexity of the maps required color in their design and printing, and maps were needed in greater quantity to satisfy the needs of the intelligence community, offset printing became standard and photostat, ditto, etc., became very little used. The facilities and capabilities of the Reproduction Branch grew under the pressure exerted by OSS for increased quantity and variety of production. The Cartography Section was a primary factor in pressuring the Reproduction Branch to develop a wider range of capability and sophistication in printing. One problem that tended to hold that Branch back was its dependence by U.S. Government edict on the US-GPO for authority to exist, to print, and to secure equipment. Being quite conservative and parochial in its background and outlook, it was reluctant to permit the growth of printing plants elsewhere in government which

seemed to be getting outside its area of development. This was to be a problem for many years.

Some projects such as the Theatre Map had to be contracted for in commercial printing plants. At the time it was initiated, this project was too large in number and sheet size for OSS facilities and other government plants were engaged in higher priority projects. So, [redacted] undertook the job (b)(3) (b)(1) and eventually completed it.

Two other maps of note were printed by [redacted] These maps also were too large and of insufficient priority to get them printed in any government plant. So the maps, 763 1256 ~~on~~ New Guinea, and The Solomon Islands were printed by this company. (b)(3)

The Cartography Section in these early years used the Reproduction Branch for the bulk of its reproduction needs. Its relationships with the Branch were friendly and pushy and professional. The day-to-day contact was via a reproduction clerk in the Section who had been thoroughly briefed in reproduction techniques and facilities, and all requests and routine problems went through him. Special problems were handled through the front office with participation of appropriate construction unit and compilation unit personnel. Whenever Reproduction Branch was unable to handle a request from the Section, other

U.S. Government printing plants or commercial plants were utilized as appropriate.

III. H. Self-initiated Projects

One of the early guidelines adopted by the Cartography Section was that it would exist as a support function producing maps which were well designed and geographically accurate and sound. As there were plenty of requesters for this kind of service during the war years, the opportunity to engage in self-initiated mapping projects didn't really arise.

The very nature of the personnel in the Section, a combination of geographically trained, research oriented, artist/designer individuals lead to the recognition of topics of a basic intelligence nature which could be done advantageously in map form. Priorities did not permit the Section to produce items not specifically and immediately required by the war effort.

There was a recognition that a set of base maps on individual countries or regions would be of great importance in streamlining the map production of the Section. There was never time to engage in such a program during this period. It was suggested, however, that for any one project involving several topics on one country that a single base map be produced to be overprinted by each overlays or set of overlays. This would reduce the amount of time spent in compiling and drafting duplicate base maps and greatly facilitate the reproduction of the maps.

(b)(3)

A proposal by [redacted] in February 1944 for a joint program between Cartography Section of OSS and the Division of Geography and Cartography (GE) of the Department of State to produce a comprehensive set of base maps bore no fruit. The Secretary of State, Cordell Hull, declined in August 1944 as it was felt that GE was too busy on its own program to participate.

The nearest approach to the production of a set of base maps came in 1943 when blue line images of a selected map were prepared of each JANIS area and mounted on boards for use as bases in the JANIS program. Selected base material was inked on these boards for use in a final map. This helped somewhat as the base was selected, but it didn't overcome the redundant drafting of basic map data for maps in the program.

And common to all maps in the study

So, the Section went through the war years doing maps on topics selected by others, but getting its satisfaction from insuring geographic accuracy and relevance of base material, effective design, and adding an editorial review function on the side.

The members of the Cartography Section did not all spend this period of time bound to a drawing board and library in Washington. There were a variety of assignments in which many persons participated.

In early 1942 requests from the Board of Economic Warture (BEW and later FEA) became quite numerous. BEW wanted to establish a cartographic unit like that in COI, but the Bureau of the Budget countered with idea that COI does all the cartographic work for BEW. In July 1942, a small group at COI compilers and draftsmen were assigned to BEW to work in the cartographic unit of BEW headed by [redacted] transferred from OSS to BEW (b)(3) as head of BEW cartographic unit. This was essentially an Cartography Section outpost and was located at [redacted] about (b)(1) (b)(3) a mile and a half from the Section in [redacted] This group was to do all cartography in the unit and to follow COI/OSS (b)(1) (b)(3) procedures and would report to the Cartography Section. The arrangement was terminated on 1 July 1943,* when OSS personnel were directed to return home.

When this unit was established OSS had agreed to supply equivalent (b)(1) (b)(3) of [redacted] men to BEW. This total wasn't reached and in BEW proposed for FY 1944 a total of [redacted] were requested of OSS. OSS couldn't do this, (b)(1) (b)(3) it needed all the hands it could get at home.**

*Memo: [redacted] 28 Dec 1942 (b)(3)
Job 52-7
Box 1
Folder BEW Unit

**Memo: [redacted] (b)(3)
to: June 1943
Job 52-7
Box 1
Folder BEW Unit

[redacted] (b)(1) (b)(3)

[redacted] This "group" was received as an upstart and soon split up and outside of effective OSS control. For sometime [redacted] (b)(1) (b)(3) and as the R & A Branch got established with a Map Division (included Cartography Section) outpost he was returned to the fold. [redacted] (b)(3) had a more varied experience in Europe and was largely lost to the Map Division. There was a lesson here which was learned by others independently [redacted] (b)(1) (b)(3) It was not profitable for Map Division to assign personnel overseas to any other service or component of OSS, because once in the theater of operations, the theater commander, or the Strategic Services Officer had control over the individuals and could assign them to any task he saw fit. With the sheltering presence of R & A Branch and the Map Division it was possible to keep Map Division personnel in sight and on tasks which benefitted the theater command and OSS Map Division, too.

At about this same time spring of 1943, [redacted] (b)(3) was assigned to Operations Division (OPD) at the Office of the Chief of Staff. He was in charge of the Current Section and directed its cartographic activities in direct support of the Chief of Staff. He was in charge of the Current Section and directed its cartographic activities in direct support of the Chief of Staff coordinating them with Map Division activities* [redacted] (b)(3) remained in this activity

*Chrono File 10 Feb 1944
Job 52-7
Box 1

until the end of World War II to his credit and to the benefit of the mutual Chief of Staff and OSS benefit.

Another activity which engaged some of the Cartographic Section members was in connection with the War Plans Committee (WPC) of the JCS. The nature of their work made it unwise to bring jobs to Section offices at that time. Security was a problem and it was faster for a cartographer to grab his kit and walk to the WPC Offices and perform the type of cartography needed there. Later in the War the requests were more complex and the appropriate security arrangements were made so that projects were executed in the Section office. Work of this sort continued throughout the war. Compared to the total work load, WPC didn't take much time but it was vital and always rush. (b)(1) (b)(3)

Beginning with the Quebec Conference in August 1943, Map Division teams provided a full map service to the [redacted] of conferences during World War II. Significant Cartographic Service was performed by members of the Cartography Section as required. The Cairo, Quebec (1944), Tehran, and the United Nations organizing conference, the latter in San Francisco, California, were also effectively supported by Cartography Section and Map Information Section members. (b)(1) (b)(3) Possibly the most exciting and rewarding non-headquarters activities of Cartography Section personnel was in the various R & A Branch Outposts overseas. There were Cartography Section personnel in R & A Branch contingents in [redacted] (b)(1) (b)(3)

[redacted] With the shifting of the scene of fighting the [redacted] operation moved into [redacted] (b)(1) (b)(3)

(b)(1)
(b)(3)

[redacted] Further moves were made in that some personnel went (b)(1) (b)(3)
to field units operating from the headquarters such as one man missions
fro[redacted] The outposts were (b)(1) (b)(3)
essentially a miniature of the headquarters in Washington. Cartography Section produced maps to accompany R & A and other Branch reports, to transmit intelligence to other offices or into headquarters, to support operations going on in the outposts.

The same division of the cartographic process between the compilation phase and the construction phase was maintained, at least in principle. In some instances the volume of work exceeded the number of available hands and compilation and instruction were performed by the same person and sometimes simultaneously.

The outposts all had problems in getting supplies. Personnel often arrived ahead of their equipment and it was necessary to develop supplies and services locally. In some areas a 100 Watt light bulb was such a rarity that it might be locked up when not in actual use for cartographic purposes. Asiatic Cabinet makers made good looking light tables, drafting tables, and map cases, but the wood was not seasoned so they were sometimes hard to use. A good scrounging enlisted man was invaluable. If he were at home he would probably be in trouble most of the time but when we needed India Ink he would get it and other seemingly commonplace items through some unidentified extraordinary source without delay.

It was expected that Headquarters would not always realize the nature of the field problem, as this was the first experience of this sort for all of us. But somethings went beyond mere inadequacy of communication. A complaint about the high humidity in Cartography

Section space and its effects on paper, tools, and furniture when used in quite open buildings of thatch construction brought forth a rather naive suggestion from an otherwise rational headquarters officer. The message stated that some silica gel which would absorb water was in route. It was further noted that if these were placed in the room it should produce a significant lowering of humidity! The sheer ludicrousness of this suggestion gave the outpost crew something to exclaim over about for several days.

Another operation away from headquarters was that at the Civil Affairs Holding and Staging Area or CAHSA sometimes shortened to CASA. The Civil Affairs Division (CAD) of the Army was working on plans for the post hostilities occupation of Japan. A program of preparing maps of the individual prefectures (KEN) of Japan for this purpose was established [redacted] (b)(1) (b)(3) [redacted] Chief of the Cartographic Section, in the spring of 1945 spent a month in March-April organizing the compilation (b)(1) (b)(3) of worksheets by CAD personnel [redacted] When the program got underway [redacted] was left there to supply direction and (b)(3) guidance to maintain a flow of worksheets to headquarters where they were reviewed and drafted and printed. [redacted] handled the coordination at headquarters and this program continued on into (b)(3) 1947 at least before it was completed.

It isn't possible to determine the number of maps produced in these outposts. Of the total numbers assigned to the various outposts and headquarters, 8135, 2930 of them were assigned to

outposts including CAHSA. Of this later number there are records of 930 maps having been completed and in the archival file at the Record Center. A total of 2,00[illegible] assigned map numbers are unaccounted for. Apparently a significant quantity of assigned numbers were never used for maps.

There are other instances wherein a number was placed on an outpost map which was not made in sufficient quantity for headquarters distribution and no record made of it. The writer is aware that such instances did occur in the rush of events in this field. In any event it may be said that the outpost produced at least a thousand thematic maps between the time of their establishment in Sept. 1943 and the end of their production term with the dessolution of OSS in Sept. 1945.

The Map Division outposts were a useful part of the OSS operation overseas. They served to supply an professional organized thematic mapping capability to OSS Units in the field both to support their operations there and to report intelligence to headquarters. The same basic attitudes toward thematic mapping followed in headquarters were followed in the field, modified only by the exigencies of a war time field environment.

III. J. Problems

The story of problems in connection with thematic cartography development in this period is the story of the Cartography Section.

When [redacted] came to the COI in October 1941, he (b)(3)
had to bring his own tools and was given space of one room in South Building, one of a group of buildings at 2430 E Street, N.W., Washington, D.C. He was given no time to reflect on his future activities but was promptly faced with the need to produce maps for various units of the COI. He did what compilation was done and all of the drafting. The pressure of work soon outran the capabilities of the Section even though he was joined by [redacted] draftsmen by the first of (b)(1) (b)(3)
December. The Section was taking on the nature of a custom drafting room serving the COI.

The adoption of the basic policy that the Section would be a producer of intelligence maps which were self-contained documents, and the separation of compilation and construction operations removed it out of the category of a custom drafting room and set the Section on the course it still follows. The recruiting of additional personnel helped to make these steps possible. There was no precedent for the kind of operation that was being established, and it was up to the Section to decide what it could best do in behalf of the war effort and how it would be done.

There was no pool of trained thematic cartographers in the country. Geographers in various universities

had some experience in produce research-related maps and cartography as a subject was not widely taught. Professional geographers were recruited largely by word of mouth and by inquiry among acquaintances in the field and to geography departments in various universities.

Drafting personnel were also secured wherever they might be found. Some of the first draftsmen were geographers but as an organization was set up and positions and grades established, they soon became compilers. The same approach was made to acquaintances, schools, and so on in order to recruit draftsmen as was employed to secure compilers.

It was necessary to train personnel on the job. The principal requirement for compilers was geographic knowledge and research ability. The principal requirement for draftsmen was a familiarity with basic drafting tools or art training and manual dexterity. The training in research/compilation and cartographic drafting took place on the job. Later in the period, 1944, plans were put forth for formal training of both compilers and draftsmen after entry on duty.

One primary problem developed with respect to men employees. The wartime Selective Service was after most men in the age group from which prospective employees might be drawn. Several men were drafted away from OSS

and many of these were eventually reassigned as military personnel to work in OSS in their former positions. Few civilian men were recruited after the summer of 1942, and subsequent male employees were procured from the services and the Section had a large number of commissioned and enlisted personnel throughout the rest of the war. Many women were recruited especially as draftsmen because they were available and capable and not liable to be drafted.

The mix of civilian and military personnel was a problem. A man holding a P-4 civil service rating and position could be in uniform as a corporal. His professional capabilities had no equivalent in the military grade structure which would permit him to be ranked higher. Eventually, [redacted] was commissioned as a captain and a few others were commissioned at lower ranks. The low grades and ranks held by some Section personnel made it difficult for them to work with other military men of higher rank but markedly lower professional training and responsibilities. This was a problem which, while eventually modified by promotions, was a source of discontent until the war ended. (b)(3)

The Civil Service was also a problem in that it had no precedent for cartography (compilation) and drafting as practiced in the OSS. It took a good deal of negotiations with the CSC and the Bureau of the Budget to get the Cartography Section firmly established with grades appropriate

to the qualifications of its members.

Like many other offices in Washington, there was an acute lack of adequate working space. The Cartography Section began in one room in South Building and spread along with the Map Information Section to occupy much of the second floor. For much of this period it was necessary to run the drafting unit on two shifts per day as there was not enough space for all the draftsmen to work at one time. By 1943 the Cartography Section was occupying much of the third floor of the building. Then in 1944 the Section was moved away from South Building, away from its principal supporting unit, the Map Information Section (Map Library), to the [redacted] where it remained until the end of 1945. This separation between Cartography and the Map Library was never remedied; the Map Library occupied space in the [redacted] and the library removed to [redacted] There were times in South Building when quality and quantity of production suffered because of a lack of enough space to work. (b)(1) (b)(3) (b)(1) (b)(3) (b)(1) (b)(3)

Short time lack of equipment sometimes caused annoyances. Maps were sometimes held up to sunlit window panels and selected materials traced therefrom. Lack of screens on windows let insects into the drafting area

where they caused drafting problems by getting onto wet ink lines; this was especially true on summer evenings.

The reproduction facilities have been noted earlier. Cartography found that it had to work closely with the Reproduction Branch to get it to try new techniques, especially the use of color screens. The conservative nature of the plant tended to slow things down but cooperation was good and progress was constant.

Requesters were a problem as well as a necessity. First it was necessary to educate many COI and OSS offices to the need of intelligence maps in their analysis and reporting. Then they needed to be trained by the Section in the ways to prepare substantive material for presentation by the Section as a finished map. This was a continuing problem even as it is in 1970 as new people were coming into OSS daily. Even in 1970 in CIA we find that education of this sort is necessary but on a much smaller scale.

There are, of course, other "problems" that could be described, but they were more or less routine and didn't pose much of a threat to the development of thematic cartography.

It should be remembered that this part of the Section history transpired largely under the urgent compelling pressure of a great war. The morale of the

members of the Section was excellent, and there was little complaint about the problems that under other circumstances might have become disruptive. Even in the last 4 months of 1945 when the war was over and the future uncertain, plans were formulated for the establishment of a thematic cartography activity to continue on in the United States Government.

The story at the Cartography Section during this period is one of its birth and growth to young maturity. The urgent need of intelligence made it necessary to organize and establish an intelligence mapping organization, for which there was no precedent or ground rules, while at the same time producing urgently needed maps.

From a beginning at one person [redacted] its chief, (b)(3)
until Jan 1943, when he became chief of a larger Map Division, Carto- (b)(1)
graphy Section grew rapidly for about a year. In June 1942, [redacted] (b)(3)
[redacted] persons were engaged in thematic mapping and in December about [redacted] (b)(1)
persons are listed in the Cartography Section. By September 1943, (b)(3)
there were [redacted] persons in the Section and [redacted] of them were military (b)(1)
assigned to the Section. The strength of the Section in headquarters (b)(3)
remained at about this level fluctuating as personnel were sent over- (b)(1)
seas. Replacements were slow to be obtained, and a few resigned. After (b)(3)
the end of World War II the work load dropped dramatically and many
cartographic personnel resigned to return to their former pursuits. (b)(1)
At the end of 1945 [redacted] persons remained in the Section and (b)(3)
[redacted] resigned to return to the academic scene.

During this period policies and procedures were established simultaneously with map production, personnel were trained in the new field of thematic mapping. Many offices of the United States Government concerned with the war effort and with the post war planning were given significant cartographic support. Many OSS outposts contained cartography units which gave them substantial support and greatly enhanced the reporting to headquarters by producing intelligence maps on the spot.

Several international war planning conferences and the United Nations Organizational Conference were given cartographic support by Cartography Section Personnel officially assigned to them. The Section produced approximately 4,200 maps at headquarters and another 1,000 at its outposts and there are other maps for which no record is currently available.

Exciting as much of the war-related activity was the most important contribution to thematic intelligence mapping consisted of the basic approaches taken in the early months. The decisions that geographers would be used to compile maps, that the construction and compilation phases would be conducted by separate groups (professional and technical respectively) and that each map should be a complete intelligence documents served to establish thematic mapping on a firm basis. The same basic concepts are followed today (1970) and have been modified only when necessary to meet peculiar situations.

The Cartographic Section had matured by the end of the war and was an solidly established intelligence mapping organization. Then as the war emergency passed plans were made by the Section which soon lead to the post-war establishment of thematic mapping the United States Government. The stays was set for the advance of thematic mapping in the less exciting times of peace but a time in which it would need to justify itself as much as before.