Lecture I.

I. INTRODUCTION

1. Fiend hart met.

2. Security warning - T. S. material.

II. MAGIC - WHAT IS IT?

1. Text of sermon - "Magic was the word for it"

2. Read extract from page 20, 17 December 1945 issue TIME, under article entitled "Pearl Harbor:"

"U. S. citizens discovered last week that perhaps their most potent secret weapon of World War II was not radar, not the VT fuse, not the atom bomb—but a harmless little machine which cryptographers painstakingly constructed in a hidden room at Fort Washington.

"With this machine, built after years of trial and error, of inference and deduction, cryptographers had duplicated the decoding devices used in Tokyo. Testimony before the Pearl Harbor Committee had already shown that the machine—known in Army code as 'Magic'—was in use long before Dec. 7, 1941, had given ample warning of the Jap's sneak attack—if only U.S. brass hats had been smart enough to realize it. Now General Marshall continued the story of 'Magic's' magic. It had:

"Enabled a relatively small U.S. Force to intercept a Jap invasion fleet, win a decisive victory in the Battle of the Coral Sea, thus saving Australia and New Zealand.

"Given the U.S. full advance information on the size of the Jap forces advancing on Midway, enabled the Navy to concentrate ships which otherwise might have been 3,000 miles away, thus set up an ambush which proved to be the turning-point victory of the Pacific war.

"Directed U.S. submarines unerringly to the sea lanes where Japanese convoys would be passing.

"By decoding messages from Japan's Ambassador Oshima in Berlin, often reporting interviews with Hitler, given our forces invaluable information on German war plans."

3. Time's source - Chief of Staff Army.

4. Read extracts - Marshall to Dewey letter: 25 Sept 44 (info not to be used for pol purposes)

"Now the point to the present dilemma is that we have gone ahead with this business of deciphering their codes until we possess other codes, German as well as Japanese, but our main basis of information regarding Hitler's intentions in Europe is obtained from Baron Oshima's

messages from Berlin reporting his interviews with Hitler and other officials to the Japanese Government. These are still in the codes involved in the Pearl Harbor events.

"To explain further the critical nature of this setup which would be wiped out almost in an instant if the least suspicion were aroused regarding it, the Battle of the Coral Sea was based on deciphered messages and therefore our few ships were in the right place at the right time. Further, w e were able to concentrate our limited forces to meet their advances on Midway when otherwise we almost certainly would have been some 3,000 miles out of place.

"We had full information of the strength of their forces in that advance and also of the smaller force directed against the Aleutians which finally landed troops on Attu and Kiska.

"Operations in the Pacific are largely guided by the information we obtain of Japanese deployments. We know their strength in various garrisons, the rations and other stores continuing available to them, and what is of vast importance, we check their fleet movements and the movements of their convoys.

"The heavy losses reported from time to time which they sustain by reason of our submarine action largely results from the fact that we know the sailing dates and the routes of their convoys and can notify our submarines to lie in wait at the proper point.

"The current raids by Admiral Halsey's carrier forces on Japanese shipping in Manila Bay and elsewhere were largely based in timing on the known movements of Japanese convoys, two of which were caught, as anticipated, in his destructive attacks.

* * *

"The conduct of General Eisenhower's campaign and of all operations in the Pacific are closely related in conception and timing to the information we secretly obtain through these intercepted codes. They contribute greatly to the victory and tremendously to the savings of American lives, both in the conduct of current operations and in looking toward the early termination of the war."

* * *

5. "Magic was the word for it."

6. Long protracted hearing of the Joint Congressional Committee. (Read excerpts)

"With the exercise of the greatest ingenuity and utmost resourcefulness, regarded by the committee as meriting the highest commendation, the War and Navy Departments collaborated in breaking the Japanese diplomatic codes. Through the exploitation of intercepted and decoded messages between Japan and her diplomatic establishments, the so-called Magic, a wealth of intelligence concerning the purposes of the Japanese was available in Washington."

and again, on page 232:

"...all witnesses familiar with Magic material throughout the war have testified that it contributed enormously to the defeat of the enemy, greatly shortened the war, and saved many thousands of lives."

7. The hightest in Army, Navy and State testified to this effect - and yet in open hearing, much was limited.

8. Read extract - Memo from Secretary of State to AC of S, G-2 - 3 January 1944:

"The Department has found this material valuable at all times, and vital in a number of highly important situations. It would appear that information of this kind, and its analysis, will be even more vital in the future than in the past, both during the period of actual hostilities, and for a considerable period of time (which cannot now be estimated) after the hostilities may be concluded. This material is of great value in determining the facts on which policy must be formulated or action taken."

8½ Magic was the word for it

9. What is this magic?

(a) TIME'S application to machine - wrong.

(b) Army had such machine - but technicians who produced it by pure analysis, bulldog perseverance, and brilliant research never gave named machine "Magic."

(c) "Magic" first used (by British) as a cover name for product of highly specialized operations which we call

(1) Signal Intelligence, or

(2) Communication Intelligence.

(d) "Magic Summary."

(e) Highest classification [illegible]

III. VALUE OF MAGIC - Let's examine more closely:

1. (a) Communique in New York Times - July 12 - 13 - 14:

"July 12: Aitape-Wewak: Our medium units attack planes and fighters, with twenty tons (of explosives), harassed enemy-occupied coastal sectors from Wewak to Yakamul, starting fires in bivouac and supply areas. Air and naval patrols attacked lines of communications."

"July 13: 45,000 Japanese troops trapped between Aitape and Wewak on New Guinea since April have started a desperate battle to fight their way to the northern part of the island."

"July 14: Our outposts inflicted heavy casualties in a preliminary engagement with an enemy force moving westward, apparently to attack our

our Aitape position. Our medium units and attack planes with 53 tons of explosives, struck enemy concentrations in the Yakamul and Wewak areas."

(b) Inside story behind it -

(1) 28 May 1944 message, available 1 June, mentioned supplies needed by the 18th Japanese Army (controlling operations in eastern New Guinea) must arrive at Wewak by end of June in order to be of use on "attack on AITAPE."

(2) 24 June 1944 message, the Southern Army stated 18th Army would attack AITAPE.

(3) Other fragmentary messages confirmed this.

(4) 20 June 1944 message (available 25 June 1944) from 18th Army planned all-out attack on U.S. Aitape perimeter on July 10, giving detailed dispositions and operations. Total strength of forces involved about 20,000.

(5) Attack was made and defeated with heavy losses for the Japs.

2. Story how Jap duplicity was thwarted.

(a) Extract New York Times - 5 August 1945:

"The long suspected fact that Japanese hospital ships, bearing Red Cross insignia, have been carrying supplies for the Japanese military forces was confirmed today when General MacArthur announced that such a vessel, carrying guns and shells as well as personnel, had been boarded in the Banda Sea near Timor Island Saturday.

"When bandages were removed from some 'patients' no wounds were found ... preliminary examination disclosed 23 heavy machine guns, 15 light machine guns and an undetermined number of 75 mm. shells. The shells were packed in boxes labelled 'medical supplies'."

(b) Inside story:

(1) Early 1945, it became apparent (from reading Jap traffic) that the enemy was attempting to redeploy their forces in N. E. I.

(2) One objective - to withdraw units from Banda Sea area to Java and Sumatea.

(3) By June, lack of transport forced them to utilize hospital ship

TACHIBANA MARU (contrary to Geneva Convention)

(4) Ship (renamed HEROSE MARU) assigned 1500 troops of 11th Infantry and 150 tons ordance and munitions from TUAL in the KRI Islands to SURABAYA.

(5) Precautions to prevent discovery:

(a) Supply of hospital clothing for troops.

(b) Daily sick reports.

(c) Lists of medical supplies.

(d) Sending regimental colors by air.

(6) Ship left TUAL 1 August - scheduled to arrive SURABAYA on 5th.

(7) According to New York Times account, the TACHIBANA, although marked by flood lighted red crosses, twenty feet high, was halted north of TIMOR by two destroyers.

(8) Search party found:

(a) Cases marked "Medical supplies" containing munitions.

(b) Only wounded - one sore thumb

(9) This was no accident.

3. Interesting fact - that Japs never suspected solution of their system.

4. Final example:

(a) Late 1943, Germans faced with desperate shortage of critical items - metals and precious drugs.

(b) Read excerpt New York Times - 10 November 1943:

"The story of a never-ending fight between ingenious enemy smugglers and the dogged, persevering men handling the blockade of Europe was told today by the Minister of Economic Warfare.

"Some weeks ago, five ships plying between Buenos Aires and Spain were halted by the British control points for search with the following, almost melodramatic results:

"40 drums stated on navicerts as containing paste were found full of liver extract, an important base in food compound for U-Boat crews.

"12 drums had false bottoms, smeared with putty, and embedded in each drum was a disk of platinum, 3" in diameter, 1/4" thick, and weighing a pound. They are worth more than $4,000 apiece. What is far more important, however, is that they are worth a king's ransom to the Germans as a factor in the manufacture of nitroglycerine for explosives.

"Also in the cargoes were six tons certified as bacteriological peptone, when in fact they were stuffed with small containers of gland extract powder for the treatment of shock."

(c) Inside story:

(1) Series of messages between Erich Otto Meyneir, German Charge d'Affaires in Buenos Aires and Berlin.

(2) Complete arrangements of the cargo was described.

IV. HOW IS IT DONE?

1. Before explaining, again stress security.

(a) After V-J day, necessity for keeping technological advances during the war no longer existed.

(b) In SIGINT no publicity possible as future success depends upon degree of secrecy with past achievements.

(c) Effect of "Black Chamber" and "Pearl Harbor."

(d) Success being on very slender thread through entire war.

(e) Battle of Midway Medurg - June 1942.

(1) Articles in 3 newspapers and a radio columnist disclosed we knew in advance.

(2) Japs changed codes.

(3) Navy up against it for weeks

(f) Difficulty of punishing violaters of security without disclosing to the world full details which would be more disastrous than original leak.

2. On other hand, need for lifting curtain a bit:

(a) Lack of appreciation by commanders.

(b) Read excerpt from report:

"In many cases it was the unnecessary task of signal intelligence Detachments in the Mediterranean Theater to overcome a general feeling of skepticism in American Tactical Staffs concerning the value and accuracy of signal intelligence material. In several instances outright disbelief by the intelligence produced by Detachments was expressed by G-2 Staffs of Headquarters served by the Detachments. In time all tactical staffs served by Intelligence Branch Detachments became aware of the accuracy of intercept information; but many unfortunate mistakes were made by tactical commands by ignoring signal intelligence information before the proper confidence in such intelligence was developed. It is felt that such unnecessary lack of confidence in signal intelligence operations can be eliminated before actual operations in an active theater are begun by educating tactical staffs with the role which signal intelligence can and should play in modern tactical warfare."

3. "Magic" is done by Signal Intelligence:

(a) Signal Intelligence is the product obtained from interception and analysis of traffic passed by the various means of communication and from the detection of secret inks, microphotographs and open codes.

(b) In simple terms, object of signal intelligence is to intercept enemy messages and answers three questions:

(1) Who sent the message to whom?

(2) Where are the correspondents?

(3) What do the messages say?

(c) All important. Fundamental error to think that the bald text of a message is necessarily capable of correct interpretation without identifying the originator and the addressee, and, on many occasions without having additional background to appreciate its significance.

4. What are the operations involved?

(a) Interception

(b) Traffic Analysis

(c) Cryptanalysis

(d) Translation and emendation

(e) Exploitation or production

(f) Information

5½ Evaluation

(g) Military intelligence

(h) Dissemination

(i) Secret inks

5. Reliability

(a) Only one source of intelligence - others are:

(1) Air and ground reconnaissance

(2) Prisoners

(3) Captured documents

(4) Secret agents

(5) Other sources

(b) By far, most reliable as it reveals innermost thoughts and in their own words what enemy is planning and doing.

(c) Measured by results, it is also far more timely and inexpensive.

(d) Quotes of what Germans thought of it from "German Operational Intelligence"

"Signal intelligence was a chief source of information in the German Army. ... Good intercept work, producing, as it did, almost 90 percent reliable information, was invaluable."

and again:

"During the invasion, the G-2's in the West drew about 60 percent of the operationally important information from signal intelligence. The remaining 40 percent was derived from all other fields of intelligence. ... Most of the information was deduced from the organization of enemy radio traffic networks, from decoded messages, and from the radio nets of the enemy Air Force liaison officers who were attached to ground troops. Based upon this information, the evaluation center of signal intelligence often came to conclusions which, at first, sounded hypothetical to the operational command and were therefore doubted. In 90 percent of all these cases the events verified the signal intelligence information so that eventually more credence was given to its conclusions."

(e) Also for Americans - German counterattack against Mortain-Avranches corridor in August 1944. Much known through Signal Intelligence of enemy strength, positions and intentions at least 36 hours before. As a result Bradley able to bring up necessary reinforcements (U.S. VII Corps, including 4th, 9th and 30th Divisions, 3d Armored Division and part of 2nd Armored Division involved in this).

(f) Reliability is great but not always 100 percent. Why? (Best to check when able)

(1) Man who's message you are reading may be mistaken or he may have erroneous information and not know it himself.

(2) Messages may have garbles and lead to erroneous interpretation, or there may be serious errors in translation (slide).

(3) Messages may be "phonies" (hard to tell).

(4) Messages may be practice message not easily identifiable as such.

(a) In 1945, traffic intercepted in Italy made reference to LXIII Corps (not previously identified). Eventually discovered prefaced by "training message," and that identification was in error.

LECTURE #2

I. COURSE - "Signal Intelligence and Communication Security."

1. Up to now have discussed only Signal Intelligence.

2. Communication Security of equal importance and goes hand in hand with Signal Intelligence. —Siamese Twins—all has been known as S. I. S.

3. Definition:

a. Signal Intelligence is the product obtained from interception and analysis of traffic passed by the various means of communication and from detection of secret inks, microphotographs, and open codes.

b. Communication Security embraces all measures designed to deny to unauthorized persons such information of military value as might be derived from our communications.

II. BRIEF HISTORY (use slide)

III. EXTENT OF SIGNAL INTELLIGENCE - World War II (use ETO slide)

IV. TYPICAL SIGNAL INTELLIGENCE ORGANIZATION (use ETO slide)

V. Now discuss in more detail various phases of Signal Intelligence Service.

a. Signal Intelligence

(1) Intercept Operations

(a) Accumulation of data - frequencies, call signs, schedules, and procedures.

(b) Chatter of utmost importance.

(c) Clearly allied is D/F - radio nets parallel order of battle.

(d) Radio finger printing.

(e) Tina

(f) Beacons, radar harmonigs, navigational aids.

(g) Techniques and equipment at an authorized receiving station quite different from an intercept station.

(h) Strategic fixed intercept different from tactical.

(i) Impress - interception quite different from ordinary reception and considerable more training required.

RESPONSIBILITY FOR CODE AND CIPHER WORK IN THE U S ARMY 1861-1945

BEFORE 1861

CHAOS

1861-1865 CIVIL WAR

SIGNAL CORPS
MOBILE STATIONS IN THE FIELD
SOLUTION ACTIVITIES INCIDENTAL

MILITARY TELEGRAPH CORPS
FIXED TELEGRAPH LINES
SOLUTION ACTIVITIES INCIDENTAL

1865-1898

SIGNAL CORPS
CODE COMPILATION, NO SOLUTION

1898 SPANISH-AMERICAN WAR

SIGNAL CORPS
EXISTING CODES USED, NO COMPILATION, LITTLE OR NO SOLUTION

1898-1917

SIGNAL CORPS
CODE COMPILATION

THE ADJUTANT GENERAL
ONE CODE COMPILED (1902)

ARMY SERVICE SCHOOLS
SOME TRAINING IN SOLUTION, TOWARD END OF PERIOD

1917-1919 WORLD WAR I

(IN WASHINGTON)
MILITARY INTELLIGENCE DIVISION, GENERAL STAFF
COMPILATION
SOLUTION
SECRET INK WORK
SHORTHAND
G-2 COMMUNICATIONS

(IN FRANCE)
SIGNAL CORPS
COMPILATION
INTERCEPTION
DIRECTION-FINDING

(IN FRANCE)
G-2 A E F
SOLUTION OF GERMAN COMMUNICATIONS

1919-1929

(IN NEW YORK)
MILITARY INTELLIGENCE DIVISION
(WITH STATE DEPT SUPPORT)
SOLUTION

(IN WASHINGTON)
SIGNAL CORPS
CODE COMPILATION

(IN WASHINGTON)
THE ADJUTANT GENERAL
PRINTING
DISTRIBUTION
ACCOUNTING

(ALL IN WASHINGTON HEREAFTER)

1930-1934

SIGNAL CORPS
SIGNAL INTELLIGENCE SERVICE
CODE COMPILATION
TRAINING IN SOLUTION
GENERAL TRAINING
RESEARCH AND DEVELOPMENT

THE ADJUTANT GENERAL
PRINTING
DISTRIBUTION
ACCOUNTING

G-2
STAFF SUPERVISION

1934-1941

SIGNAL CORPS
SIGNAL INTELLIGENCE SERVICE
CODE COMPILATION
TRAINING IN SOLUTION
GENERAL TRAINING
INTERCEPTION
CURRENT SOLUTION
RESEARCH AND DEVELOPMENT
PRINTING
DISTRIBUTION
ACCOUNTING

G-2
STAFF SUPERVISION

1941-1944 WORLD WAR II

SIGNAL CORPS
ALL PHASES OF ACTIVITY THROUGH SIGNAL SECURITY AGENCY AND SECOND SIGNAL SERVICE BATTALION AT ARLINGTON HALL STATION AND INTERCEPT STATIONS

G-2
STAFF SUPERVISION

DEC 1944 - SEPT 1945

SIGNAL CORPS
ADMINISTRATIVE CONTROL OF ALL PHASES

G-2
OPERATIONAL CONTROL OF ALL PHASES

SEPT 1945-

G-2
COMPLETE CONTROL OF ALL PHASES THROUGH ARMY SECURITY AGENCY AND SECOND SIGNAL SERVICE BATTALION AT ARLINGTON HALL STATION, INTERCEPT STATIONS AND THEATERS

(j) Stumbling block to interception

1. Radio silence -

a. Quote German document dated 20 March 1943:

"While preparing for an attack, the Russians keep strict radio discipline and often impose radio silence, thus making most difficult the useful employment of radio intercept in that sector."

b. Battle of Bulge

On 5 November 1944, radio silence ordered for units behind lines in East Holland. On 9 November, German C in C, West ordered immediate cessation of radio traffic in Fortress Area West and subordinate units. On 10 December, message read all SS units observing radio silence.

Most striking effect - radio silence was Luftwaffe New Years 1945 - last bid for air supremacy - IFF navigational aids - all silenced until operation.

2. Use of landlines.

(k) Counteraction

1. Radio operators require extensive training.

2. Mobility of units require use of radio.

3. Impossibility of landlines - Pacific Operations.

(2) Traffic Analysis

(a) May answer the "who" and "where."

(b) Study of enemy traffic to overcome procedures, daily changing, unsytematic call signs, changing frequencies, net organizations, preservation of continuity. Extracts all information w/o reading the message.

(c) Fusion with other sources of information.

(d) Especially useful in tactical units.

(e) Provides "cribs."

(f) May be only source "roster schussel" - example--

(g) Highly desireable be checked against other sources - inferences are inevitable.

(3) Cryptanalysis

(a) May answer "who" or "where."

(b) Does give "what" is said.

(c) No magic - no crystal ball.

(d) A science using straightforward scientific principles and procedures.

(e) Techniques - mathematical and statistical - element of luck and ~~implies~~ cipher "know how."

(f) Describe codes and ciphers.

(g) Cipher machines.

(h) High, medium and low grade systems and their general exploitation in Signal Intelligence.

(i) Example of 3 ~~letter~~ digit code used by German Luftwaffe - trigger happy Germans

(j) "8 ME 109's from RJ 2 flying out over MM at 1430 flying in over RM 1515 low level attack."

"2 ME 109's up at 0830 down 0930 LO."

(k) Techniques:

1. Study of the external characteristics of messages;

2. Study of any available collateral information, including that obtained from previous solutions of systems used by the same enemy organization (this is what is meant by "cryptanalytic continuity" without which the cryptanalyst is greatly handicapped).

3. Study of the beginnings and endings of messages;

4. Search for repetitions within and between messages;

5. Preparation of statistical counts of letters, groups of letters, complete code groups, and the like;

6. Search for indicators;

7. Determination of the type of cryptography used.

8. Separation of the traffic into groups of messages cryptographed in the same key;

9. Testing of probable words assumed to be present in the message;

10. Search for messages which may be presumed to contain the same plain text enciphered in different ways.

(l) Emphasis on cryptograph continuity.

(m) Use of machinery.

(n) Stress interelationship of three phases. Interception Traffic Analysis Cryptanalysis

(4) Translation and Emendation

(a) Highly trained - skill, imagination and flexibility of mind.

(b) Voice interceptor.

(c) Intimate knowledge not only of language - but colloquialisms - basic military terms -

(5) Production or Exploitation

(a) Eliminate delays, establish short cuts, standardize procedures, use machinery.

(b) Save on cryptanalysts.

(c) Establishment of priorities - hundreds of thousands of messages.

(d) Scanning units.

(6) Information

(a) Selection of material.

(b) Publication in proper form. (During height of activity, Signal Security Agency in Washington alone produced an average of 1000 bulletins a day, each from 1 to 5 pages long)

(7) These conclude functions of Signal Intelligence Service (Intell slide) and rest taken up by G-2. - Next 2 steps - evaluation intro intelligence dissemination also

(a) Communications vital factor.

(b) August 1945, TTY in U.S. above $59,000.

VI. PROTECTION OF SOURCE OF SIGNAL INTELLIGENCE

1. Convoy on high seas - direct action as result - enemy concludes you solved their codes.

2. Tunisia example -

"In Tunisia, for example, a costly error was made when intelligence from radio intercept was not handled properly. Two German coded messages were intercepted, several hours apart, and broken. The first message stated intentions of a German attack at a particular hour. The second message postponed the attack and gave the new time of the jump-off. Both messages were forwarded to the Allied tactical commands as soon as they were broken. One command, after receiving the second message, made a radio broadcast, in clear, referring to the German intention to attack, stating that it had been postponed, and giving the exact times as reported in the German messages. As a result of German intercept services reading the broadcast the attack was again postponed. Furthermore, later German messages intercepted stated a realization that the Allies were reading German tactical codes. In a short time all codes being read regularly by Allied signal intelligence units disappeared from the air, and a dependable source of intelligence was lost to the Allies until the new codes were broken."

3. Artillery example.

4. Jap example

On a certain day in November 1944, an enciphered code message was sent by a certain Japanese staff section to certain Japanese Air Force units, requesting air escort for two convoys carrying troops to reinforce the Phillipines. The message went on to say that the convoys consisted of ten ships, tankers, and escort vessels; on what date it was to leave and from what port; what the route was to be, even to including noon positions for the next seven days. This message was solved in Washington. Two days after these convoys sailed, one of them reported in a message, which was also intercepted and solved, that it had been sighted by a B-29, with strong indications that the other convoy had also been sighted. A few hours later messages from these convoys reported the following losses: six ships definitely sunk, one disabled and one afire. Later, we learned from another source that in addition one aircraft carrier was sunk. But did you notice the message about the B-29? It didn't just happen!

5. Definite rules laid down on use of this.

6. Only authorized recipients.

7. Special channels

8. Never take overt act to compromise source.

LECTURE #3

I. COMMUNICATION SECURITY

a. (1) During war ~~Dewey was~~ President of U. S. and Commander in Chief, U. S. Navy, Chief of Staff, Army and other high ranking Government officials journeyed several times half way around the world to attend special meetings and conferences. (Travelled safely)

(2) On the other hand, the gentleman who was reported to have said in 1941: "I'm looking forward to dictating peace terms in the White House.", [redacted], the Commander in Chief of Jap Comb Staff - Admiral Isoroku Yamamota, while in the course of an ordinary inspection tour, died in a flaming Jap bomber that crashed on the Solomon Islands in April 1943. Accident? "Accidents don't happen - they are brought about."

b. (1) Ever think about the tremendous number of communications required to handle an operation like Torch and Overlord?

(2) Communication security responsible for success.

c. Communication security - embraces all measures designed to deny to unauthorized persons such information of military value as might be derived from our communications.

d. Three basic elements to communication security:

(1) Physical security

(2) Transmission security

(3) Cryptographic security

e. Physical security safeguards:

(1) Extensive and comprehensive accounting system for every single item

(2) Office courier for delivery

(3) Complete and adequate instructions and means for destruction in emergencies.

(4) Rules for physical safeguarding (code rooms and etc)

(5) Cryptographic clearances

(6) Inspections

(7) Colmar Incident

f. Transmission security

(1) Provide operating procedures which give least information to enemy

(a) Hidden addresses

(b) Changing call signs and frequencies

(2) Monitoring - checks on violations

(3) Prevention of deception by enemy

g. Cryptographic security

(1) Provision of adequate cryptographic systems to meet all needs - ~~over~~ OVR high level material - unbreakable. (Maintenance)

(2) Continuous research in this field - for cryptographic (messages) - cifony - cifax.

(3) Cryptographic systems used by Army divided into:

(a) Normal

(b) Standby

(c) Emergency

(4) Cryptonets - world wide - isolation system, etc.

(5) Reporting of compromises (AR 380-5)

(Marine on Kwajalein, who during mop up operations in June 1944 stumbled across body of a dead Jap - a piece of water soaked paper lying beside Jap attracted his eye - was in English. Paper was Navy Department document - a code widely used in Pacific. Jap writing on it - indicated "received 3 January 1944." Immediate check made as to responsibility for loss of document - narrowed

down to a specific squadron of Army bomber command. Investigation revealed a Liberator was shot down. Squad[ron] commander said he saw plane shot down and crew captured and reported the loss to higher authority and assumed higher authority would take care of loss of code. Result no one reported its loss. Jap was found 8 January. Must assume codes read for 5 days.)

II. THE ARMY SECURITY AGENCY

a. 6 September directive - (history slide)

b. World-wide organization [Attached #SA units to organization as required Attached staffs to G-2's.]

c. Provides a service to G-2

d. Organization and function (2 slides)

(e. Doctrine letter)

III. CONCLUSION

Because of great technological advances in this field, the need for complete integration from top to bottom - the speed of communications required - the establishment of ASA a step in right direction.

In last three lectures tried to remove the aura of mystery and romance which popular writers [illegible] the habit of attaching to this subject. It is a serious and difficult problem.

Hope you have seen how radio can be a two edged sword. Without it can't function - improperly used may be army disaster.

Above all, hope you have gained sense appreciation of the importance of Signal Intelligence & the future defense of our nation.

We must accept as an axiom that the weaker our military and naval establishments, the stronger must be our intelligence safeguards.

In closing, again emphasize the importance of avoiding unnecessary discussion of what has been disclosed to you in these lectures.

CONCLUSION:

In last three lectures - tried to remove some of the aura and romance which popular writers are in the habit of attaching to this subject.

It is hoped that you have seen, because of the great technological advances in this field, the need for complete integration from top to bottom — speed of communications — the establishment of ASA as a step in the right direction.

Further hope you have seen how radio can be a two edged sword. Without it it's difficult to function. Improperly used, it may bring disaster.

Above all, it is hoped you have gained some appreciation of the importance of Signal Intelligence to our National Security. aues to our defense in time of war.

We must accept as our axiom that the weaker our military and naval establishments, the stronger must be our intelligence safeguard.

In closing, again emphasize the importance of avoiding unnecessary discussion of what has been disclosed to you in these lectures.