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# HISTORY

of the

DIRECTORATE OF COMMUNICATIONS

DEPUTY CHIEF OF STAFF, OPERATIONS

1 January 1954 to 31 July 1954

[redacted]



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HISTORY

of the

DIRECTORATE OF COMMUNICATIONS

DEPUTY CHIEF OF STAFF, OPERATIONS

1 January 1954 to 30 June 1954

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BRIEF RESUME OF THE HISTORY OF THE DIRECTOR OF COMMUNICATIONS

Following, broken down by divisions, is the History of the Directorate of Communications, DCS/Operations, Headquarters USAF. The History encompasses the period 1 January 1954 through 31 July 1954.

Personnel authorizations for this directorate were increased and changed substantially during this period. In February, five Lt Colonel spaces were converted to Colonel spaces. This enabled the Directorate of Communications to have Colonel positions as Chiefs of each of its nine Branches.

The overall military authorization for the directorate was increased by a Lt Colonel space in February. This space was for the purpose of providing the Alternate Joint Communications Center with an Air Force Communications Officer.

The civilian spaces for the directorate were increased by three. Two of these spaces were clerical and were granted to Plans and Policies Division and to Electronics Systems Division. The third of these spaces was an additional Mutual Defense Assistance Program space, which was utilized as an Electronic Engineer, which permitted greater assistance and provided continuity in the turnover of military personnel in the MDA Team.

Personnel assigned to the Office of the Director and Executive remained as last reported; however, there were several changes in key personnel within each Division, as indicated in the histories immediately following.

HISTORY

Of

OFFICE OF THE DIVISION CHIEF

PLANS AND POLICIES DIVISION

For Period Of

1 January 1954 - 30 June 1954

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HISTORY

PLANS AND POLICIES DIVISION

OFFICE OF THE DIVISION CHIEF

CHAPTER I

ORGANIZATION AND FUNCTIONS

During the period 1 January through 30 June 1954 no organizational changes were made within the Office of the Division Chief, However, two (2) such changes were given consideration and received directorate approval. Both await approval by the Secretary of the Air Staff. They are the creating of two (2) additional space authorizations. The first would provide the Air Force Coordinator, JCEC, with a full-time assistant in the person of a Lt Colonel. The second would provide the office with a civilian personnel space (GS-4) for the task of clerical typing, filing, and general administrative work. These additions, if approved, would place the Air Force Coordinator, JCEC, in a more favorable position to project USAF attitudes in its "Joint" activity than that which he presently enjoys. He is at present competing with representatives of the Army and Navy who have two (2) officers and two (2) civilians and three (3) officers and three (3) civilians augmented by a Marine contingent staff, respectively. As a result of this inequitable balance of personnel strength the USAF representative, presently limited in assistance to one (1) stenographer (GS-5), is unable to adequately research items on the JCEC (JCS) agenda and to monitor actions directed by that body. The organizational changes

planned should alleviate this situation and enhance the effectiveness of the USAF-JCEC (JCS) effort. (UNCLASSIFIED)

Three (3) personnel changes marked the period under report. They were as follows:

Colonel George M. Higginson, the Division Chief, relinquished that position to Colonel Charles W. Gordon on the last day of the reporting period. Colonel Higginson is being reassigned to Student status at the Industrial College of the Armed Forces, Fort McNair, Washington, D. C. Colonel Higginson will remain in the Division on Consultant status through 15 August 1954, at which time he will report to school. Colonel Higginson's tenure was marked by numerous improvements to USAF planning, budgeting, programming and policy making procedures in the communications-electronics area. These embraced personnel, materiel, and frequency resources in this operational field covering joint, combined, national, and international as well as intra Air Force scope. They are reflected in the more detailed portions of this and previous histories of the Plans and Policies Division. Colonel Gordon has been Chief of the Communications Systems Division, this directorate. (UNCLASSIFIED)

Colonel Robert C. Green (the Mobilization Assignment) Deputy Chief, and a key employee of the CAA, discontinued his directorate affiliation to accept an assignment with the CAA at Bangkok, Thailand. (UNCLASSIFIED)

Miss Irma M. Hartman (GS-5) resigned her position as Secretary to the Division Chief in order to accept a similar position within the staff of the Joint Chiefs of Staff. Miss Gilda M. Angelo (GS-5), formerly of the Frequency Branch, this Division filled the position left vacant by Miss Hartman's departure. (UNCLASSIFIED)

## CHAPTER II

## ACTIVITIES

During the period under report, representatives of the Office of the Division Chief made several significant and a number of routine presentations before groups of various compositions. (UNCLASSIFIED)

Of particular note was a presentation by Colonel Higginson before the assembled membership of the Institute of Radio Engineers. The occasion was the Annual IRE Symposium on Global Communications at the Hotel Statler in Washington, D. C. Colonel Higginson presented a "paper" and addressed the symposium on the subject of "The USAF Strategic Communications System." His presentation received special commendation from the symposium floor. (UNCLASSIFIED)

The historical record of the Division Chief's Office is best couched in the terms of staff supervision, staff monitorship and direction, and staff coordination of the division and directorate effort. This embraces the management of men, materiel and frequencies for USAF C-E. It extends across a spectrum which reaches from intra-Air Force, through joint and combined effort, and on to national and international areas of interest. It includes budgetary defense, programming, planning,

allocations, authorizations and negotiation. These are continuing activities representing the long term investment of the USAF in the C-E field. They are designed toward an overall objective of better support to the aircraft we launch, through a sound, thorough, well considered approach to the plans and policies we create. (UNCLASSIFIED)

# HISTORY

# of

# PLANS BRANCH

# for period of

# 1 January 1954 - 30 June 1954

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## CHAPTER I

## ORGANIZATION AND FUNCTIONS

There were no organizational changes in the Plans Branch during the period 1 January - 30 June 1954.

OFFICER PERSONNEL - Colonel Arthur E. Stanat, AO-250919, completed his tour of duty as Chief, Plans Branch, on 26 April 1954. He was re-assigned as Assistant to the Director, Communications-Electronics, Joint Chief of Staff. Colonel William H. Lyle, 916A, was assigned as Chief, Plans Branch, on Colonel Stanat's departure. Major Lesly W. Williams, AO-308588, completed his tour of duty in the Plans Branch, MDA Team, on 30 May 1954. He was ordered to the Military Assistance Division, U.S. European Command. (UNCLASSIFIED)

JCEC APPOINTMENTS

17 February 1954, Lt. Colonel H.E. McCormick was appointed as an alternate member of the J/SP.

17 February 1954, Major D. Reuther was appointed a member of J/TP to replace Lt. Colonel F.I. Adams.

17 February 1954, Lt. Colonel McCormick was appointed an alternate member of J/TP to replace Captain J.E. Ogle.

22 April 1954, Colonel W.H. Lyle was appointed a member of the J/SP to replace Colonel A.E. Stanat. (UNCLASSIFIED)

## CHAPTER II

## ACTIVITIES

JOINT ARMY - AIR FORCE COMMUNICATION FACILITY - LEGHORN - Plans for a combination U.S. Army ACAN station and USAF GLOBECOM station at Leghorn, Italy, were developed and approved by USFA, USCINCEUR, USAFE, The Chief Signal Officer, U.S. Army, and the Directorate of Communications, Headquarters USAF. This communication facility will reduce construction, equipment, personnel and radio frequency requirements. (CONFIDENTIAL)

GLOBECOM STATION, ADANA, TURKEY - A communication plan was developed for this facility and submitted to JCEC for review. (SECRET)

(U) UH/DF NETWORK ESTABLISHED IN THE ZI BY AIR RESEARCH AND DEVELOPMENT COMMAND - A requirement now exists for an operational HF/DF network in the ZI to provide HF/DF support for USAF Headquarters Command balloon training activities. An HF/DF network consisting of ten existing or planned HF/DF stations is being established by the Air Research and Development Command to support developmental projects. The Airways and Air Communications Service has been operating this network for ARDC. In order to provide for both the ARDC and Headquarters Command HF/DF requirements, this headquarters designated the Airways and Air Communications Service as the cognizant agency for installation, maintenance and operation of the ARDC network. (CONFIDENTIAL)

VULNERABILITY - On 26 March 1954, a letter was sent to all major commands, subject: "(U) Vulnerability of USAF Communications-Electronics Facilities," requesting that each command formulate detailed plans to

reduce the vulnerability of communications-electronics facilities, installations, networks and systems in the Air Force. This letter referred to an approved Air Council recommendation "that the vulnerability of Air Force facilities be recognized in all Air Staff planning and action" and that "a capability for achieving rapid recuperability of attacked bases shall be developed." The commands were requested to submit their plans to arrive at this headquarters not later than 1 July 1954, however, this date has been extended to 1 August 1954, when requested. (SECRET)

PROJECT RAND - In accordance with a request received from the Assistant for Development Planning, DCS/D this directorate submitted the following problems for presentation to the Rand Military Advisory Group. (CONFIDENTIAL)

a. To analyze the electronic equipments in use or planned in the guided missile system to determine the extent of electronic interference between the various missile systems, operational restrictions, and recommendations to reduce interference in future missile systems.

b. To analyze the United States Global Communications System (GLOBECOM) with respect to vulnerability.

c. To determine the best method of providing in-flight control of high speed aircraft.

d. To develop a satisfactory Air Defense weapons system employing passive detection techniques for the early detection and later interception of enemy aircraft which are radiating electromagnetic signals.

e. To develop a weapons system for very long range detection and interception of enemy aircraft and ballistic missiles.

f. To develop a positive, secure, and economically feasible means of electronic identification of all friendly aircraft operating in and around the U.S. and the overseas areas for which we have air defense responsibility.

g. To determine if an emergency decentralization capability is required for the Lincoln Transition System. (CONFIDENTIAL)

MUTUAL DEFENSE ASSISTANCE PROGRAM - Delivery of C-E Equipment. Deliveries of electronics equipment continued at a high pace during the period of this report, a number of the MAAG's reporting storage of some of the items for various causes, including arrival of materiel prior to installation capability to absorb, or lack of sufficient advance information of detailed materiel movement. The AN/FPS-8 was still in critical demand, deliveries not having been scheduled due to the absence of various components not previously reported as being short. UHF ground equipment installations were reported to have been made in a number of NATO countries, however, quantities still due from ZI production did not move due to shortages of minor items. At the close of the fiscal year, under pressure by this headquarters, AMC was inventorying all UHF assets on hand with a view towards expediting all possible deliveries. (CONFIDENTIAL)

PROGRAMMING - The FY 54 MDA Program suffered heavy reductions in C-E end items due to funds directed from the MDA Program in Europe to support French Indo-China. Plan I of the FY 55 program was drawn representing an allocation of funds 40% of the preceding Fiscal Year and much less than MAAG requirements. Refinement of the program was not completed

by the end of the Fiscal Year. (SECRET)

REQUIREMENTS AND PLANNING - Planning of requirements appeared to have improved and fewer program deviations were processed, however, a great deal of improvement is still needed. OSD directed that USCINCEUR set up a full time Communications and Electronics working group to correlate plans and screen requirements in the European area. (Letter OSD S-1495, dated 12 June 1954). (SECRET)

PROJECT STIGMATIC - Planning action was completed in April for OSI fixed communication facilities in Alaska (Project STIGMATIC). The OSI requirements were incorporated in GLOBECOM stations and arrangements were made for AACS to perform the engineering required. Stockpile action for certain items included in the project was taken under the AF-GEN program (Project BIG TOP). (SECRET)

FORWARD SCATTER - Action was initiated in February to acquire certain land areas in Iceland and the United Kingdom for use as relay stations for the projected transatlantic forward scatter circuits. Land areas required are in the Keflavik and Grindavik areas of Iceland and the Christmas Common Area of the U.K. Approval had not been received from either the Icelandic government or the U.K. by end of this reporting period. (CONFIDENTIAL)

Action was also initiated in February to acquire certain land areas in the vicinity of Cape Spear, Newfoundland for use as a test site for forward scatter tests between Newfoundland and the Azores. Approval had not been received from Canada by end of this reporting period. (CONFIDENTIAL)

STANDARDIZATION OF COMPONENTS - The Air Board, Military Agency for Standardization, NATO, proposed to the member countries that a study concerning the Standardization of radio components be conducted. In Air Board matters, it is the responsibility of the USAF to determine and present the Department of Defense position. Action was taken by the Plans Branch in February to determine a DOD position (through the medium of the JCEC) concerning standardization of radio components. (CONFIDENTIAL)

AACS PROVISION OF COMM SERVICES FOR ALASKAN AIR COMMAND - The Alaskan Air Command presented a plan proposing that responsibility for providing all ground/air and point-to-point communications services for the Alaskan Air Command be placed upon the 1804th AACS Wing. The Plans Branch took action to develop and coordinate an Air Staff position on this proposal. On 15 March 1954, the Alaskan Air Command was informed of Air Staff approval with certain minor exceptions, and was directed to proceed with implementation. (CONFIDENTIAL)

OFF ROUTE (OR) FREQUENCIES - Action was continued within the J/TP Panel to gain reconsideration of the existing 50-50 division of off-route frequencies between the USAF and the U.S. Navy. The USAF position is that the off-route frequencies should be divided on the basis of operational requirements. At the close of the reporting period, a three way split paper on this subject had been prepared and signed off at J/TP Panel level and was enroute to the principles. (CONFIDENTIAL)

WPC 54-2 - Communications-Electronics Appendices for WPC 54-2 were prepared and forwarded to Director of Plans. (UNCLASSIFIED)

AJCC COMMUNICATIONS FACILITIES - Communications facilities at the Alternate Joint Communications Center were reviewed to determine adequacy in accordance with guidance contained in the Headquarters USAF Disaster Plan. (UNCLASSIFIED)

NAVY COMMUNICATIONS FACILITIES AT KEFLAVIK - A request for inclusion of Navy communications facilities at Keflavik, Iceland was approved. In general, the Navy will provide major equipments and peculiar components. The Air Force will install, maintain and operate all equipment except receivers. (CONFIDENTIAL)

SAC LIAISON OFFICES AT NATO AIC's - A request by Strategic Air Command for establishment of liaison offices at NATO Air Information Centers was favorably considered. Comment by the Chief Signal Officer, SHAPE was secured and forwarded to SAC. SAC's request was then re-written for release on a NATO basis. (CONFIDENTIAL)

CONSOLIDATION OF COMM FUNCTIONS IN EUROPE - USAFE and AACS plans on consolidation of communications functions in Europe were reviewed. It was determined that neither plan was acceptable in that wartime capability would be adversely affected. Proposed letters to USAFE and AACS to this effect were forwarded to AFOMO. (UNCLASSIFIED)

SPEECH TO MARINE COMMUNICATIONS - Major Bruce R. Riley was guest speaker at the Marine Corps School, 11 June 1954 on the subject: "Air Force Global Communications System." (UNCLASSIFIED)

ACTIVATION OF AJCC - A procedure for notifying Commander AACS and Deputy Commander (Air Force) JCA of activation of the AJCC was worked out with the USAF Command Post. (CONFIDENTIAL)

AACS RESPONSIBILITY RE AJCC - AACS was notified of their responsibilities in furnishing the Air Force personnel complement for the Joint Communications Agency at the AJCC. (UNCLASSIFIED)

PORT LYAUTEY - The Office of Chief of Naval Operations advised that excess communications capacity at Port Lyautey could be utilized for requirements exceeding available capacity at Sidi Slimane and requested a statement of requirements. Our reply stated that planning had not progressed to permit a firm statement and suggested direct coordination between USAFE and Port Lyautey. (CONFIDENTIAL)

COMM SUPPORT UNIT DEPLOYMENTS - Communications Support Unit Deployments for WFB-57 and WPC-54-2 were prepared and forwarded to Director of Manpower and Organization. (UNCLASSIFIED)

TEMPORARY DUTY TRIPS - During March 1954, Lt Colonel W. L. Coss spent 10 days TDY in the NEAC area as a member of the Headquarters USAF Observer Team for Exercise WINDCHILL. Visits were made to Ernest Harmon AB, Goose Air Base, Sondrestrom Air Base, and Thule Air Base. (UNCLASSIFIED)

During June 1954, Lt Colonel W. L. Coss spent 3 days TDY at Headquarters NEAC, Pepperrell AB, Newfoundland for the purpose of attending meetings of the SAC - NEAC Standing Coordinating Committee.

The Committee met to consider certain SAC support requirements in the NEAC area. (CONFIDENTIAL)

Major Harris accompanied representatives of the Director of Operations and the Assistant for Air Installations in a visit to Headquarters, JUSMG (Spain) to provide guidance in establishing the air defense activities for the USAF base complex in Spain. (CONFIDENTIAL)

# HISTORY

Of

PROGRAMS AND STANDARDS BRANCH

For Period Of

1 January 1954 - 30 June 1954

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# CHAPTER I

## ORGANIZATION AND FUNCTIONS

During the period 1 January 1954 through 30 June 1954 there was one organizational change in the Programs and Standards Branch.

In May 1954 an Evaluation Section was established in this Branch. This Section will prepare brochures reflecting C-E plans, a separate brochure for each plan, to fill a need for formally approved guides for C-E implementation and activities world-wide. As an example, a brochure was prepared concerning the Gap-Filler Program, showing phasing between personnel, equipment, training and construction. This will in no way change or affect the PC Document, but will serve as background, explanation and justification therefor, as well as for Airborne Communications-Electronics plans. (UNCLASSIFIED)

During this same period the following personnel changes occurred:

Colonel S. K. Briggs, Chief of the Programs and Standards Branch was transferred to the Office of Assistant Secretary of Defense, Supply and Logistics. (UNCLASSIFIED)

Lt Colonel M. E. Niccolini replaced Colonel Briggs as Chief of the Programs and Standards Branch. Lt Colonel Niccolini was formerly assigned as Chief of the C-E Publications-Programming Section. This position was not filled during this period. (UNCLASSIFIED)

Mr. Thomas B. Crigler was assigned as the Chief of the new Evaluation Section. (UNCLASSIFIED)

CHAPTER II

ACTIVITIES

C-E CAREER FIELDS

During this period action was initiated to revise the Communications-Electronics Career Areas. The trend is towards more specialization and consequently will result in: (a) less training time with more utilization of the graduate, (b) better qualified airmen because of less things to learn, (c) better utilization of training equipment, and (d) lower cost of training. (UNCLASSIFIED)

The basis of this specialization is the fact that the greater percent of our airmen are on their initial tours. Thus, lower training time gives a better utilization factor as indicated above. However, at the 7 skill level more career ladders will tend toward the broad job concept thus allowing latitude and flexibility in the assignment of our master and technical sergeants. (UNCLASSIFIED)

NINE MONTHS FIELD OFFICER COURSE

Personnel of the Standards Section attended a series of conferences relative to the proposed discontinuance of the special staff courses conducted by the Air University in favor of a new nine months Field Officer Course. Since the new Field Officer Course, in order to provide well rounded staff training to meet Air Force needs, must include all career areas in the student body, it was recommended that the Communications-Electronics Staff Officer Course be discontinued effective with the graduation of CESOC Class 54A. (UNCLASSIFIED)

Communications-Electronics Officers will now compete with officers in other career areas for entry to FOC. (UNCLASSIFIED)

HOI 100-6 - RESPONSIBILITIES FOR DEVELOPMENT AND IMPLEMENTATION OF FIXED COMMUNICATIONS-ELECTRONICS PROGRAM

After considerable study and rewriting, Air Staff coordination was obtained and HOI 100-6 was published 23 June 1954. This Instruction prescribes the responsibilities within Headquarters USAF for development and implementation of the Fixed Communications-Electronics Program as outlined in AFRs 100-46 and 66-5. As a matter of interest, publication of this directive is indicative of the time required to secure coordination and approval by the Air Staff on matters which are controversial in nature. It was in April 1952 when preparation of the 1st draft of this HOI was completed. (UNCLASSIFIED)

RELEASE OF SIGNAL AVIATION CONSTRUCTION COMPANIES

Program action was initiated approximately three years ago to activate, train, and deploy Air Force Communications Construction Squadrons on a phased basis to replace all SCARWAF Signal Aviation Construction Organizations on duty with the Air Force. Effective 8 June 1954, the last of the Army Construction Companies was inactivated. The 440th Signal Aviation Construction Battalion will remain on duty in Korea as long as alert conditions exist. (CONFIDENTIAL)

REORGANIZATION OF AIR RESERVE WING COMMUNICATIONS SQUADRONS

The 17 Air Reserve Communications Wings previously organized under T/O 1-8013 at a strength of 4 Officers and 52 Airmen were reorganized under T/O 1-2233 at a strength of 3 Officers and 51 Airmen. The new composition and strength of these units is now the same as that utilized by the Tactical Air Command for like units. This action will preclude reorganization if these units are called to active duty. (UNCLASSIFIED)

T/O 1-2233

A major revision of T/O 1-2233 was completed and forwarded to Manpower and Organization for final review prior to publication. The revision reflects numerous changes in the number and specialities of personnel currently authorized. It contains new teams which were developed to provide personnel for new types of communications-electronics equipment. Only the minimum number of personnel required for normal operation of each specific type of facility was authorized. Individual specialists required to satisfy the mission assigned to a communications unit can be obtained by selecting the appropriate augmentation team.

It is believed that more efficient utilization of personnel and equipment will be realized as soon as the reorganization of communications units can be accomplished under the provisions of the new T/O. (UNCLASSIFIED)

REORGANIZATION OF CERTAIN SAC COMMUNICATIONS SQUADRONS

During a recent SAC CPX exercise it was determined that the number of personnel authorized certain SAC Communications Squadrons was not sufficient to permit prolonged efficient operations. As a result of a study prepared by SAC, this headquarters approved the reorganization of the 30th, 33rd, and 46th Communications Squadrons which support SAC Headquarters, 15th Air Force, and 2nd Air Force respectively. In addition to these command support squadrons, each single and double wing operations squadron was authorized additional personnel. The reorganization of these SAC squadrons will give them the capability of efficiently operating heavily loaded circuits during CPX exercises, and will provide

adequate capability for a 90 day period should the EWP be placed in effect. Even with the increased capability provided these units, it will be necessary for personnel to work a 48 hour week instead of the normal 40 hour week during maneuver exercises or an emergency. (SECRET)

TYPE CLASSIFICATION OF MAJOR END ITEMS OF C-E EQUIPMENT

As the result of a series of conferences with representatives of the Director of Requirements, considerable progress was made in clearing up various aspects of the type classification problem as it pertains to major end items of C-E equipment. Due to the cost, it was determined that it would not be feasible to obtain formal type classification action as outlined in AFR 80-6. Therefore a Committee was formed composed of representatives from interested Headquarters Air Staff agencies and major commands. The members will obtain expert testimony on the various items of C-E equipment now contained in SFEL's and other authorization documents that have not yet been typed classified. Based on the testimony received, such items will be administratively classified by the Committee. (UNCLASSIFIED)

In addition to the above action, a policy decision was reached whereby, in the future, major end items of equipment will not be included in future SFEL's or other authorization documents unless such items have been typed classified as either "Standard" or "Alternate Standard" or a waiver granted by the Director of Requirements. (UNCLASSIFIED)

AACS QOR ON FREQUENCY CONVERTERS

The Standards Section recommended that an AACS QOR for Frequency Converters be approved and action initiated to provide the required equipment. (UNCLASSIFIED)

The AACS QOR was for a 10 kw and 30 kw motor generator set to convert commercial 50 cycle power to 60 cycle at overseas locations which have frequency critical equipment; additionally, it was intended that their output would be more stable, both in voltage and frequency, than 50 cycle source power. It was considered that motor-generators were preferable to engine-generators as they required less maintenance, made less demand on personnel, had less installation problems and were more economical. As these sets will be used at locations that are considered to be in the "fixed station" category, the use of high grade commercial units, as recommended by AACS and meeting the QOR, was considered adequate. (UNCLASSIFIED)

REORGANIZATION OF THE 8TH AND 4418TH COMMUNICATIONS GROUPS

Reorganization of the 8th and 4418th Communications Groups which support the 9th and 18th Air Forces respectively was accomplished in March 1954. This reorganization has provided these communications groups with that degree of flexibility and recuperative potential that is so essential in providing positive communications support in tactical air operations. Although these Groups support ZI based Air Forces, the requirement for peacetime training and joint maneuvers was considered of sufficient importance to warrant authorizing an additional 29 Officer and 551 Airmen troop spaces to accomplish a balanced reorganization of both groups. (UNCLASSIFIED)

MC'S VALIDATED FOR TRANSPORTABLE HF RADIO SET

Military characteristics were validated for a transportable high frequency radio set during this period. The proposed radio set is intended to provide, under one nomenclature and in a readily transportable form, all the equipment (except shelters and a prime electrical power source) essential to install and operate one terminal of a short/medium range two-way radio circuit. The set will be capable of providing either voice, manual CW telegraphy, or teletype communications. Operation is to be feasible with all of the equipment installed at one location or with component sections of the equipment remoted up to 5 miles from the balance of the equipment. The proposed radio set is to be employed at installations which are not permanent in nature and will remain fixed for long periods of time but which require the capability of rapid removal, transportation and re-installation at another site. It is envisioned that existing standard items of communications equipment will be utilized in making up this radio set. It will replace the World War II SCR-499 type equipment. (UNCLASSIFIED)

REORGANIZATION OF THE 5TH COMMUNICATIONS GROUP

Proposal of Commander, FEAF, to inactivate all T/O Communications Units in the 5th Communications Group and reorganize them as TD units was disapproved by this Headquarters. FEAF was advised that all tactical and operational support type communications squadrons in the Air Force are organized under T/O 1-2233. This provides standardization and equal capability for all such type units and insures rapid deployment of personnel and equipment should similar tactical support be required elsewhere. (CONFIDENTIAL)

TACTICAL C-E TRANSPORTABLE POWER UNITS

A staff study titled "Standard Family of Tactical Communications-Electronics Power Generators" was forwarded to the Director of Requirements. This study pointed out the deficiencies of present power generators and recommended the corrective action to be taken to effect necessary improvement. (UNCLASSIFIED)

Included in the study as a tab was a Qualitative Operational Requirement outlining the power generator features required for tactical C-E usage. A tentative draft of this QOR was forwarded to selected major commands for their comments and recommendations which were then incorporated in the final copy. All commands queried concurred in the requirement for a standard family of engine generators and all recommended the use of diesel engines as having proven more satisfactory in actual field usage. (UNCLASSIFIED)

The features desired, in order of their importance, were stated in the study to be:

1. Dependability and reliability required to meet combat operations requirements. (Minimum of 5,000 hours operation without major overhaul)
2. Ease of maintenance. (Minimum demand for high skill levels)
3. Minimum demands for logistic support. (Maximum use of interchangeable parts and components between different size units)
4. Standardization of outputs. (To permit development of standard power distribution procedures and practices)

5. Light weight.

6. Small size.

The design/development of a standard family of seven sizes of sets having outputs of 2.5 kw, 10 kw, 15 kw, 30 kw, 60 kw, and 100 kw was recommended. All sets have a 50/60 cycle output with units of 10 kw and under, being 120/240 volts, single phase and the larger units being 120/208 volts, three phase. Included were the necessary panels to provide control and automatic switchover functions. (UNCLASSIFIED)

It was also recommended that, pending the availability of the standard units, commercially available units most nearly meeting the requirements of the QOR be selected for interim usage. (UNCLASSIFIED)

The staff study was forwarded to the Director of Research and Development by the Director of Requirements. AFDRD, in turn, forwarded it to Headquarters ARDC on 2 June 1954 for evaluation and initiation of any development action considered necessary. (UNCLASSIFIED)

GOVERNMENT OWNERSHIP OF BASE ADMINISTRATIVE TELEPHONE SYSTEMS

Our battle with OSD on government ownership of base telephone systems continued. The Director of Communications, Major General Gordon A. Blake, presented a briefing to OSD on this matter. He requested that: (a) withheld programmed funds be released to the Air Force, (b) Air Force will study manning standards, (c) Air Force will determine feasibility of sale of more systems, and (d) Air Force will determine number of ZI bases desired for retention. Subsequent to the briefing, OSD agreed to release programmed funds. Another presentation to OSD is planned for July 1954 which it is hoped will bring final OSD approval for government ownership of certain base administrative telephone systems. (UNCLASSIFIED)

TOOL ECL'S

A conference, attended by representatives of Hq AMC, Hq RAFD, and Hq USAF (representation from the Standards Section) was held at Rome Air Force Depot on 20 and 21 May 1954 to establish a new and improved policy relative to C-E Tool ECL's. Considerable dissatisfaction had been expressed over the policy of making a separate ECL for each cell in every T/O. This policy was considered to be impractical because: (a) it required an excessively large number of ECL's which could not be effectively prepared or kept current, (b) the ECL's would be based on authorized equipment rather than the equipment actually on hand, (c) the ECL's would not adequately provide for T/D units. It was also determined that many of the ECL's were essentially duplications and some were poorly prepared and incomplete. Furthermore, under existing policy, an ECL would be prepared and authorized for use by only one particular unit. Other organizations with similar requirements would have no authorizations. This was well illustrated by the proposed ECL 20-36-6 where, by deleting the words "Air Force Base" and "fixed plant" it was possible to authorize this ECL to 20 additional organizations. (UNCLASSIFIED)

The conferees decided that the "individual cell" concept should be replaced by an ECL, or a limited number of ECL's, which would list the tools required by specific prime equipments. This is to be accomplished by RAFD (or other cognizant depot) preparing an "Equipment Tool List" for each prime equipment and covering all levels of maintenance; these ETL's will be forwarded to AMC where they will be included in an overall ECL. The user will determine his tool authorization in terms of his specified level of maintenance and equipment

on hand. The ECL will consider the quantity of equipment and personnel to prevent over-authorization. This concept is basically identical to that of the new test equipment ECL's. RAFD personnel stated that this new concept could be accomplished easier and faster than the old method. Eventual development of a "standard-preferred" tool list will also tie in well with the WADC proposed "Time Phasing Document" which would require all manufacturers to produce items supportable with standard Air Force equipment. (UNCLASSIFIED)

A recommendation by the Director of Maintenance Engineering, Hq USAF, representative that "peculiar" tools, ie., tools usable with one prime equipment only, be provided as part of the prime equipment was considered to be impractical under present conditions. While it was considered desirable in principle, no way could be seen whereby it could be effectively accomplished. This is due to the lack of an official document that establishes the composition of equipment. Until such time as official "Parts Control Lists" can be established, it was deemed necessary to include all tools, common, special, and peculiar in the ECL's. (UNCLASSIFIED)

SIGNAL CORPS TECHNICAL COMMITTEE

A recent revision to AFR 80-25 transferred the Air Force membership on the SCTC to Hq ARDC. Hq USAF, however, will continue to have informed observers on the committee. The Standards Section is furnishing one of the representatives on this committee. An informal meeting was held in April 1954 to discuss future participation on this committee. It was generally agreed that the Air Force should take a more active

part in the future. Such increase should result in the Air Force making its requirements known to the Signal Corps at a more timely period; in some cases consolidation of projects; reduce or eliminate the need for separate Air Force testing of common usage items, and accomplish more timely type classification and reclassification. It was pointed out that ARDC, being a research and development rather than a supply agency, will not in all cases be aware of the fact that the Air Force has an interest in some items. It was agreed that Hq USAF would advise ARDC of the items in the SCTC agenda which are of known interest, together with recommendations concerning appropriate action. This especially applies to items which are being type classified or reclassified and which affect items in Air Force authorization documents such as the MEAL. (UNCLASSIFIED)

CAREER COMMITMENTS FOR MARS PERSONNEL

The lowering of the civilian age requirements for membership in the Military Affiliate Radio System (MARS) from 21 to 16 years of age by the Departments of the Air Force and Army is an effort to pre-train and maintain a pool of Communications and Electronics personnel. A portion of these will enter the Air Force upon reaching the age of 18. (UNCLASSIFIED)

In an effort to utilize the training these personnel will receive, this directorate has secured approval of the following plan: (a) CONAC will award a certificate of record, and (b) trainees will be informed that presentation of this certificate at the Basic Training Center will assure entry in either the 29000 Communications Operations or the 30000

Radio and Radar Systems Career Field. (UNCLASSIFIED)

It is possible that some of these people may qualify as by-passed specialists. If the airman qualifies as a by-passed specialist in the career field of his choice (29 or 30), he will be awarded the apprentice (3) level AFSC and assigned accordingly. If he does not qualify as a by-passed specialist, he will enter the career field of his choice (29 or 30) at the helper level (10) and will receive formal technical training. (UNCLASSIFIED)

AIRMEN REENLISTMENTS

One of the greatest problems in the Air Force today is the high turnover of airmen. This problem promotes inefficient operations and poor maintenance. In addition, the cost of continually training replacements is a factor which holds no future promise. Each skilled technician represents a great investment. The Air Force cannot afford the continuance of this recruitment-training-loss-replacement cycle. Therefore, drastic action in this area is required. (UNCLASSIFIED)

In FY-1955 we will be confronted with a particularly serious problem in this respect. At present, there are an estimated 154,200 first-term, regular airmen eligible to separate in FY-1955. These are high quality airmen, most of whom enlisted under the most favorable recruiting conditions. Actual surveys of over 120,000 airmen during the past year indicate that 76% of these FY-55 airmen are at least of high school graduate level. Their accession, therefore, exerted a pronounced influence upon the educational and mental levels of the Air Force. A large majority have advanced through technical

training and the lower skill levels at a rapid rate; by 30 June 1954 They constituted about half the total number of skilled specialists. Unfortunately, only a very small minority (6%) of these airmen have indicated a desire to reenlist, and of these, only half may be regarded as potential "career" personnel. About 70% intend to separate, and the remainder (24%) have expressed indecision with respect to reenlistment. If experience is taken as an indication, the proportion who will actually separate will equal the "noes" and "undecideds" combined, or 94%. Based upon past experience, we can expect that in our 20 career area, 25,710 airmen (or 32%), and in our 30 career area, 28,600 airmen (or 45%) will be lost during FY-1955. The impact on the Air Force resulting from loss of this large segment of specialized experience should be obvious. (CONFIDENTIAL)

The prime responsibility for procurement of personnel rests with the Personnel family. However, the Director of Communications, having a vital interest, has instigated many informal actions to improve airmen reenlistments. Through various devices, communicators are being urged to take an active role in improving our reenlistment rate. A brochure on advantages of the Air Force was prepared and distributed to C-E officers to assist in this program. Through the means available we are trying to help. (UNCLASSIFIED)

RADIO TRANSMITTER AN/URT-12

As an interim equipment to meet Air Force requirements for a low powered (100 watt) HF transmitter (2-30 mc) Headquarters ARDC has selected the Coast Guard designed AN/URT-12. While the limitation of

a crystal-control only and weight of the unit make it undesirable as a "Standard" item, it appears to be acceptable as a "Tentative Standard" item for interim usage. The Standards Section has advised the Director of Requirements accordingly. Recommendations relative to certain MEAL and special issue authorizations have been made. (UNCLASSIFIED)

AUTHORIZED VS ASSIGNED C-E PERSONNEL

Results of the channelized officer training program are beginning to show in C-E officer manning. By primary AFSC, the C-E officer shortage was reduced about 100 during February 1954. It was reduced about 120 by duty AFSC. The overall AF specialty shortage is about 19,600 officers of which C-E accounts for about 11%. The 4th Quarter 1954 officer manning status is shown below: (CONFIDENTIAL)

| AFSC | AUTH | ASG BY PRIMARY | ASG BY DUTY | PIPELINE STUDENTS | PIPELINE TRANS & PATIENTS |
|---|---|---|---|---|---|
| C-E Staff Off, 3016 | 1,480 | 1,003 | 1,396 | | |
| ECM Off, 3024 | 738 | 642 | 713 | | |
| Comm Off, 3034 | 3,291 | 2,316 | 2,346 | 1,364 | 200 |
| Gnd Elct Off, 3044 | 1,191 | 850 | 787 | Total for all AFSC's | |
| Air Elct Off, 3054 | 855 | 648 | 777 | | |
| TOTALS | 7,555 | 5,459 | 6,019 | | |

Shortage by Primary - 2,096

Shortage by Duty - 1,536

AIRMEN. Our airmen position from the quantitative view is good. However, indications are that the reenlistment rate is much lower than planned. As a consequence, the present training program will be inadequate even in the "hard core" (100% of requirement therein) areas. In

order to alleviate the condition, more basic personnel will be OJT'd to skills by the major commands. In addition, more channelized training to allow faster training will be necessary. For example, the ATC radar repairman is being split into those channels insofar as training is concerned. The result will be about a 30% reduction in training time. The 4th Quarter 1954 airman manning status is shown below: (CONFIDENTIAL)

| | | | PIPELINE | |
|---|---|---|---|---|
| AFSC | AUTH | ASG | STUDENTS | TRANS & PATIENTS |
| Air Traffic Control & Warning, 27 | 23,513 | 22,562 | 295 | 1,146 |
| Comm Operations, 29 | 41,413 | 39,915 | 514 | 2,415 |
| Radio & Radar Maint, 30 | 31,960 | 34,027 | 671 | 1,930 |
| Wire Maint, 36 | 10,498 | 9,654 | 161 | 382 |

USAF COMMUNICATIONS-ELECTRONICS INSTRUCTIONS (CEI)

Revisions Nos. 4, 5, 6, 7, 8, 9, and 10 to the USAF Communications-Electronics Instructions were coordinated on by the Air Staff, printed and distributed during this period. This document is a standard Air Force publication which provides USAF Communications-Electronics Officers a single reference source for information and directive material. A new and improved Index was distributed with more complete indexing and cross-indexing and individual Table of Contents were added to each new or revised pamphlet. Major changes were made in Chapter 29 - Programming and Budgeting, Chapter 31 - USAF Strategic Communications and Related Systems, and Chapter 39 - Foreign C-E. A new AC&W Operating Instruction pamphlet (Chapter 19) was also distributed during this period. This pamphlet is a revision and expansion of the AC&W information contained in Chapter 13. (UNCLASSIFIED)

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COMMUNICATIONS-ELECTRONICS STAFF OFFICERS COURSE PRESENTATION

The Programs and Standards Branch monitored the preparation of the Directorate of Communications presentation to the CESOC class during this period. The topics of the various speeches included: (1) Air Force Investment in the Class, (2) C-E Organization and Management at Hq USAF, (3) Broad C-E Planning, and (4) C-E Programming. The general theme of these topics covered: (1) what Headquarters USAF tries to do, (2) what C-E officers at lower levels should be doing to help and (3) pointed out to the students the weak features in our C-E systems. (UNCLASSIFIED)

AIR FORCE COMMUNICATIONS NEWSLETTER

The Air Force Communications Newsletter, a publication for Senior Air Force Communicators, world-wide, increased in distribution during this period. Marked changes and improvements were made in the format and contents of the Newsletter. In addition, a concentrated drive was made to secure interest throughout the Air Staff in submitting newsworthy items for inclusion in the Newsletter. To date, the results of this drive have been most gratifying. (UNCLASSIFIED)

FIRST ISSUE AIRBORNE PROGRAM DOCUMENT

After a series of conferences (the original of which was called by the Programs and Standards Branch) it was decided that the airborne programming document will be published in 3 issues, in addition to monthly page corrections. The electronic retrofits for aircraft constitute 44 of the 199 types of retrofit shown in the first issue of the document supplied to Hq AMC on 18 February 1954. Although this is only 22% of the types, it is 62% of the number of actual retrofits. The issuance of airborne programming documents throughout a 9 months programming cycle will

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probably follow a general pattern of: (1) forwarding from Hq USAF to Hq AMC for budget computation, (2) Hq AMC to Hq USAF for budget approval, and finally (3) from Hq USAF to Hq AMC for procurement and installation action. (UNCLASSIFIED)

This documenting of retrofit plans has several advantages: (1) it places all commands and segments of the Air Force on a uniform plan, officially approved, (2) it furnishes periodic reports of physical progress on retrofits so that plans can be altered or cancelled when delays alter the picture, and (3) aircraft inventory plans are projected 4 years into the future whereas formerly they extended for only 1 year. (UNCLASSIFIED)

COMMUNICATIONS-ELECTRONICS MANAGEMENT INFORMATION BROCHURE

On 1 June 1954 the Director of Communications approved the establishment of a brochure system to provide management information and assistance to project officers concerning various C-E projects now in progress. A sample brochure, concerning the Gap-Filler Program, was prepared and submitted for illustrative purposes. This brochure is available for a ready reference source on the concept and plans for the project or program, and the phasing of related equipment, construction, training, personnel, and production to insure orderly implementation of C-E projects. It will provide in one folder as much information concerning a given project as can be reasonably obtained. This data will assist in revealing situations potentially out-of-phase and will provide information of assistance in developing remedies. The possibility is being considered that information and source data be solicited from AMC, ARDC, ADC, TAC, etc., and that the brochures should eventually be distributed to them. (UNCLASSIFIED)

SECRET

REVISED P-230 BUDGET CODE

The P-230 Communications-Electronics budget code has been revised and will be used for FY 54-FY 55 procurement/budget programs. This action was originally recommended by this directorate on 3 December 1952 and again on September 1953. This revision places the budget projects into more functional groups wherein the total requirement for like items of equipment will be procured under one project. Under the former system it was possible to procure one end-item of equipment in four or five budget projects. With some slight differences as recommended by the Air Materiel Command to be compatible with their internal procedures for computing materiel requirements, the revised fiscal code accomplishes the purpose of this directorate's origina_ recommendations. A summary of the new project titles follows: (UNCLASSIFIED)

| | |
|---|---|
| P-231 | Airborne Radio Equipment |
| P-232 | Airborne Radar Equipment |
| P-233 | Wire Communications Equipment |
| P-234 | Ground Radio Equipment |
| P-235 | Ground Radar Equipment |
| P-236 | Communications Security Equipment |
| P-237 | Electronics Countermeasures Equipment |

FY-1955 C&E BUDGET ESTIMATE (P-230)

The FY 1955 C&E budget estimate for major procurement other than aircraft (P-230) was included in the President's Budget in the amount of $405 million, as cleared by OSD. Of this amount, $305 million of new funds have been requested, with the remaining $100 million to be covered from FY 1954 unobligated funds. The P-230 budget estimate was presented

SECRET

to the Sub-Committee of the Committee on Appropriations, House of Representatives, 83rd Congress (2nd Session) on Wednesday, 3 March 1954 by Major General Gordon A. Blake, Director of Communications. Other supporting witnesses from this directorate included Colonel George M. Higginson, Chief, Plans and Policies Division, and Major Howard B. Briley, Chief, Programs Section. This estimate was presented to the Sub-Committee of the Committee on Appropriations, United States Senate on Tuesday, 18 May 1954, by Brigadier General F. J. Dau, Deputy Director of Supply and Services, Air Materiel Command. (UNCLASSIFIED)

FY-1956 PUBLIC WORKS PROGRAM

Liaison with the Public Works Program continued to improve during this period. The value of this effort was recognized by the approval of an additional space in the Programs Section. The officer assigned to this space will be a full-time liaison representative to ACS/ Installations. It is expected that full-time efforts will result in even greater benefit to the C-E program. (UNCLASSIFIED)

TRANSFER OF FUNCTION - P-230 BUDGET ESTIMATE AND BUYING PROGRAMS

The function of preparation of the P-230 Budget Estimate and Buying Programs has been transferred to the Director of Supply and Services. The function of the Programs Section in this regard is now the review and approval of the requirements submitted by the Director of Supply and Services, and the development of the material to assist the Director of Communications in the defense of the budget and buying programs before the several review authorities. (UNCLASSIFIED)

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C-E PROGRAM DOCUMENT

PC-55-3, based on PD-55-3, 137 Wing Program, was published 22 March 1954. (UNCLASSIFIED)

With the publication of this document certain changes in format, such as the inclusion of an "as of" date for each base page, were effected in order to make possible the initiation of a monthly revision system. Instructions were included in PC-55-3 detailing this change system. The commands were divided into 3 groups based on the volume of their sections in the document and a schedule was established for the submission of proposed revisions by each group. Group I commands were instructed to submit their changes at the end of the first month following publication of the document, Group II, at the end of the second month, etc., for three successive months during each quarter of the year. Group I changes are to be processed and reprinted pages issued for bases which contain approved changes at approximately the same time that Group II changes are submitted. In this way, the entire document would be revised on a quarterly rotating schedule. (UNCLASSIFIED)

In the meantime, revised Program Guidance, PG-55-3R, was published 15 March 1954. This document announced changes in the USAF Program and directed staff agencies to revise program documents in accordance with these program changes. PD-55-3R, published 19 March 1954, contained changes in the base utilization and major deployment program which required revisions to PC-55-3. (UNCLASSIFIED)

PC-55-3 was revised in accordance with the new base program, and the punch cards for these changes were forwarded to Hq AMC on 16 April 1954

SECRET

to enable AMC to begin the computation of the FY-1955 Buying/FY-1956 Budget Programs based on PC requirements. (UNCLASSIFIED)

The published revisions to PC-55-3 were distributed on 29 April 1954. The change procedure was initiated at this time. Replacement pages for bases with changed requirements and instructions as to base deletions and additions, base name changes and transfers of command jurisdiction were issued. A new index was also issued as an aid to the holders of the document in ascertaining which bases were included in the current document. (UNCLASSIFIED)

The first scheduled revision to PC-55-3 was begun on 10 May 1954 when proposed revisions were received from the commands included in Group I of the revision schedule. Reprinted pages were distributed on 28 June 1954. Additional instructions concerning the preparation of proposed revisions and a suggested format for the use of the commands in submitting revisions were also distributed at this time. (UNCLASSIFIED)

The procedure for processing emergency PC changes was revised during June 1954. Under the new procedure, the commands are notified of the approval of emergency revisions to the C&E program by a standard letter form which is simultaneously furnished to the appropriate engineering and supply activities. The practice of processing emergency PC revisions to Statistical Services for reprinting changed base sheets every month was discontinued. Revised base sheets are now reprinted only as scheduled in Appendix "C" to the PC document. (UNCLASSIFIED)

SECRET

REVISED AFR 100-46

A revised AFR 100-46 was published 21 April 1954 and distributed to all interested agencies. Some of the principal changes and new factors are as follows: (UNCLASSIFIED)

1. Definition of the C-E Program Document as PC. (Para 3a)
2. Definition of "Operating Date". (Para 3d)
3. Definition of "Antenna systems, including poles, towers, and guys and associated items, such as footings, bases and site preparation" as Technical Components. (Para 3e(4))
4. Procedures for the deactivation of C-E facilities. (Para 10)
5. Procedures for the relocation or rehabilitation of C-E facilities. (Para 11)
6. Retitling of "Unprogrammed Requirements" to "Emergency Requirements", and the statement of responsibilities of commands in the establishment and requesting of facilities under this title. (Para 12)
7. Elimination of the requirement for notification in 30 days to the Director of Communications of the acceptance of a facility. (Para 61) This is at variance with T.O. 16-1-292 at present; however, the latter will be revised to reflect this change. It is expected that the report will still be required between the Installing Agency and the Operating Agency.

It should be noted that the definitions of Technical Components and Supporting Structures are now a firm Air Staff position. These definitions

SECRET

will be reflected in other related regulations and directives, including AFR 93-1. The funding implications of these changes are reflected in revisions to AFM 172-1. This matter was covered fully in letter from Headquarters USAF, AFMME-CR, dated 4 April 1954, subject, "Supporting Structures for C-E Facilities." (UNCLASSIFIED)

HISTORY

of

FREQUENCY BRANCH

for period of

1 January 1954 through 30 June 1954

Table of Contents

# CHAPTER I

## ORGANIZATION AND FUNCTIONS

A. ORGANIZATION:

The following major changes occurred during the period.

1. Lt Col A. H. Seigel replaced Col W. R. Carroll as Branch Chief on 2 June 1954.

2. Mr. L. S. F. Meaker replaced Lt Col A. H. Seigel as chief of the RF Section on 2 June 1954.

3. The Records Sub-Section, formerly under the RF Section, became a separate section in June 1954.

4. The organization of the Branch as of 30 June 1954 is shown in Appendix I.

B. FUNCTIONS:

The functions of the Branch remain unchanged. However, since previous histories do not include exact functions, a detailed list is attached as Appendix II.

## CHAPTER II

## ACTIVITIES

### A. VLF, LF AND MF (0 TO 3000 KC):

1. FLY-BY BEACON FREQUENCY. The Frequency Branch furnished a frequency and identifier for a temporary fly-by radio beacon to be used in final salute ceremonies at the funeral of General V ndenburg at Arlington Cemetery. Identifier AF was assigned to this facility. (UNCLASSIFIED)

2. THULE HOMING BEACON. Upon request of the Danish Government, the frequency for the Thule beacon was changed from 390 kc/s to 321 kc/s effective 1 April 1954. This assignment required over eight (8) months of negotiation involving CINCNE, Denmark, The Department of State, and Headquarters United States Air Force. (UNCLASSIFIED)

3. PROPOSED RADIO BEACON AT NORTON AIR FORCE BASE. On 18 February 1954 Norton Air Force Base requested an additional beacon to augment the combined tower/beacon facility presently operating. A thorough search of frequency records by the CAA Los Angeles regional office, the CAA Washington office, and the Frequency Branch revealed that no frequency could be assigned the proposed facility which would not cause disruptive interference to other facilities in this congested area. Further, present trends would indicate that this situation will not change sufficiently within the next 12 months to permit a frequency assignment to the Norton beacon. Norton Air Force Base has been informed of this non-availability of a frequency for the additional beacon at Norton. (UNCLASSIFIED)

4. DHAHRAN NON-DIRECTIONAL BEACON. The LF beacon on 379 kc/s at Dhahran provided a service radius of 200 nautical miles. The Secretary General of ICAO, however, stated that a 300 nautical mile service radius was desirable. The Frequency Branch dispatched a message to USAFE asking if such an increase in power can be cleared, and if so, to locally authorize Dhahran to increase power on the beacon. The answer from USAFE to this message will govern the answer the U.S. will furnish the Secretary General of ICAO (UNCLASSIFIED)

5. CAMPBELL AIR FORCE BASE BEACON. The Federal Communications Commission (FCC) granted a permit for a broadcast station at Clarksville, Tennessee to operate on 540 kc/s. This is only 12 kc/s from the USAF non-directional beacon on 528 kc/s which is located approximately eleven miles from Clarksville. It was considered that no interference would be caused to USAF aircraft utilizing the beacon due to the selectivity of radio compasses AN/ARN-7, AN/ARN-6, and AN/ARN-11. The Army, however, uses a light aircraft with a compass receiver which was not believed to be selective enough to be free from interference if the Clarksville broadcast station operated on 540 kc/s. As a result of this possible interference to various aircraft a study is in progress by the CAA to ascertain the amount, if any, of interference and a possible solution to the narrow frequency spread of the two facilities. (UNCLASSIFIED)

6. ADC RADIO BEACON AT CALISTOGA. Due to the extreme congestion of frequencies in the 200-400 kc/s navigational aid band on the West Coast it was necessary to change frequency on the McClellan beacon, the Merced radio range, the San Francisco civil outer compass locator

and the Mather Air Force Base radio beacon to accomodate a new radio beacon at Calistoga California. The Calistoga facility was an ADC requirement which provided a departure and arrival "fix" off airways for ADC jet aircraft. This facility partially alleviates problems created by ADC scrambles through dense air traffic in the San Francisco area during instrument weather. (UNCLASSIFIED)

7. MCIS CORRIDOR BEACONS. Voice facilities on the MCIS Corridor Beacons will not be required with changeover to CONSOLAN. On 1 April 1954 Colonel Mills of the Air Defense Branch of AFOOP informed the Frequency Branch that voice facilities will no longer be a requirement for Multiple Corridor Radio Beacons when these beacons are changed to Consolan stations. The additional bandwidth required for voice transmissions made clearance of frequencies for the Multiple Corridor Beacons very difficult and no approval for voice had been possible for the beacon at Nantucket, Massachusetts. The cancellation of these voice requirements considerably reduced the objections previously encountered in frequency clearance for Nantucket, Pescadero, California, Atlantic City, New Jersey, and Santa Barbara, California. (CONFIDENTIAL)

8. POLICY ON USE OF 90-110 KC/S BAND. The Directorate of Communications sent a letter to FCC opposing additional allocations in the 90-110 kc/s band. The FCC in proposed rule making Docket 10988 proposed to amend Part II of the Commissions rules to permit development and operation of radio positioning stations in the 90-110 kc/s band. Radio positioning would include Shoran, Raydist etc. The 90-110 kc/s band as allocated in the Atlantic City Radio Regulations, provided that this band would ultimately become wholly a long range

navigational aid band when a system is developed that is acceptable for international adoption. The Air Force now has two long range navigational aid systems under development for the band 90-110 kc/s, and feels that any additional services that would be permitted in the band under the proposed rule making would interfere with the development of NAVAREO and CYTAC and hinder the later implementation of one or both of these systems. (CONFIDENTIAL)

9. CYTAC CAUSES INTERFERENCE. In January, Canada reported interference from the Air Research and Development Command experimental CYTAC transmitter at Rome, N.Y., operating on 100 kc/s. This was the second report from Canada citing excessive bandwidth on the 100 kc/s transmitter. The authorized bandwidth is 20 kc/s, but Canada observed a bandwidth of up to 70 kc/s. AFSC was instructed to cease operations on 100 kc/s until the bandwidth is reduced to the authorized limit of 20 kc/s. (SECRET)

B. HF (3000 KC/S TO 30,000 KC/S):

1. FRENCH OFF ROUTE (OR) FREQUENCIES. A letter to the Minister of Defense for France requesting coordination of aeronautical frequencies was dispatched 12 January 1954. The subject letter presented the USAF requirements for frequencies for Global Air/Ground System. It ~~is~~ requested the cooperation of the French in releasing for our use several (OR) frequencies necessary in North Africa and Europe. These frequencies were allocated by ITU for use by the French forces in France and/or the French territories. A reply was received from MOD France giving comments on our request for clearance of Aeronautical (OR) frequencies. The comments of the French in reply to our letter were in general favorable and as follows:

a. 9 frequencies were approved for the European Area

b. Objections to two frequencies were re-affirmed

c. Objections to two frequencies were removed

d. Alternates for two frequencies were proposed

As a result of this action the following frequencies were assigned to Sidi Slimane: 3007, 3137, 4724.5, 6730.5, 11228, 13215.5, 15016, 15036 and 17975 kc/s. These frequencies will also be assigned to other stations for air/ground service over the Atlantic and European areas. (CONFIDENTIAL)

2. GLOBAL (OR) AERONAUTICAL FREQUENCIES. In clearing the cargo ship radiotelegraph bands, the frequency 15016 kc/s was assigned in replacement for 16860 kc/s for Air Sea Rescue Service in the USAFE area. The frequency 15016 kc/s is planned as a world-wide common

frequency for use by all stations in the Global Air/Ground System and its assignment for air sea rescue service is in accordance with the plans to consolidate such service into the Global system. Based on the clearance in Europe the possibility of implementing the frequency 15016 kc/s throughout the Atlantic area was investigated and it was determined that there was not sufficient capacity to install the frequency in the NEAC area. When this capacity becomes available, 15016 kc/s can be the first of the (OR) frequencies in use on a world-wide basis. No traffic problems are involved because of the availability of other lower frequencies. (UNCLASSIFIED)

3. ADC OFF-SHORE RADAR EXTENSION PLAN. Frequencies which were available to the USAF were insufficient to supply the large number of assignments required for picket boats and aircraft in the plan. The frequencies needed were licensed with FCC and ARInc in February. A USAF position was established that civil aviation (R) bands should be released for ADC. (CONFIDENTIAL)

4. PROJECTS TACAIR 54-7 AND BOXKITE. Four high frequencies were assigned to TAC for projects TACAIR 54-7 and BOXKITE. Effective 9 March 1954, four (4) high frequencies were assigned to TAC to establish a training circuit for personnel involved in Projects TACAIR 54-7 and BOXKITE. These two projects are the responsibility of TAC under Project AF-GEN-1-50-OPR. These frequencies were assigned for a 440 mile radius of Donaldson AFB for a period not to exceed 90 days. (UNCLASSIFIED)

5. FLUTTAR FREQUENCY. The Frequency Branch assigned frequency 1238.55 Mc/s to the Lincoln Laboratories for 3rd harmonic type

communication in connection with Fluttar radar. The Lincoln Laboratories experimented with a process of utilizing the third harmonic of Fluttar radar frequencies to provide communications links between the Fluttar radar fence posts in Arctic regions. (SECRET)

6. AIR PROVING GROUND WARNING FREQUENCY. Radio frequency was assigned to Air Proving Ground Command at Eglin Air Force Base for transmitting warnings to commercial fishermen. The frequency 2638 kc/s was assigned for use at Eglin Air Force Base. This frequency was assigned for the purpose of providing greater safety to commercial fishermen working within the areas in the Gulf of Mexico which were designated for bombing and gunnery missions. Broadcasts relative to test activity are made in the blind twice daily, tentatively at 0800 and 1300 local time. Each broadcast is approximately five (5) minutes in duration. The fishing boats are equipped to receive 2638 kc/s. This method of clearing fishermen from the danger areas prior to exercises proved to be more economical and efficient than the former method of clearing the danger areas by using patrol aircraft and surface craft. (UNCLASSIFIED)

7. RADIO FREQUENCIES FOR CIVIL AIR PATROL. Civil Air Patrol (CAP) aeronautical and fixed communications were conducted on frequencies cleared by this directorate and licensed to the CAP by the Federal Communications Commission. Changes in CAP frequency assignments were kept to a minimum, since each such change required that voluntary participants in the CAP program purchase new transmitting crystals at their own expense. However, because of national and military commitments in implementing frequency bands allocated to

the Maritime Mobile Service CAP was requested to shift operations in the Southeast United States from 4325 and 4505 kc/s to 4845 kc/s. This change involved the purchase of approximately 1400 new crystals. The Civil Air Patrol was authorized to use three of their assigned freq encies 4505 4507.5 and 4585 kc/s with Air Rescue Service. This enabled closer coordination between the two services in accomplishing search and rescue missions. The control of the fre quencies remained with CAP. (UNCLASSIFIED)

C. VHF (30,000 KC/S TO 300 MC/S)

1. IONOSPHERIC SCATTER CIRCUITS. Canada did not concur in frequencies for USAF circuits in the 30 Mc/s to 40 Mc/s band between Goose Bay, Labrador and BW-1 and between Newfoundland and the Azores. Negotiations with the Canadians were made on a formal and an informal basis throughout the period. (CONFIDENTIAL)

2. ICELAND-UK SCATTER CIRCUITS. The Icelandic Government concurred in the use of scatter frequencies between Iceland and the United Kingdom. The frequencies assigned were 37.15 Mc/s, transmitted to the UK and 35.2 Mc/s, received from the UK. (CONFIDENTIAL)

3. GETAFE AIRPORT, MADRID SPAIN. An instrument of authorization for control tower frequencies was issued to the 1975-3 AACS Detachment on 1 February 1954 and control tower operation was activated on 4 February 1954 with satisfactory flight tests being completed on 16 February. The frequencies for the fixed circuit between Madrid and Sidi Slimane were in a coordination status with CINCEUR as of the above date and could not be assigned until final clearance was obtained. (CONFIDENTIAL)

4. SIMULTANEOUS TRANSMISSIONS. ADC requested authority to use simultaneous transmissions on 126.18 and 236.6 Mc/s at Grandview Air Force Base, McChord Air Force Base, Geiger Field, Portland, and Larson Air Force Base and also 137.80 Mc/s-363.8 Mc/s and 121.5 Mc/s-243.0 Mc/s at Grandview. In order to prevent additional interference on 126.18 Mc/s this Headquarters did not concur in simultaneous transmissions on 126.18 Mc/s and 236.6 Mc/s at Grandview and McChord Air Force Bases and Geiger Field. (UNCLASSIFIED)

SECRET

5. MCIS PROGRAM. In February the Eastern Air Defense Force (EADF), requested the frequency 121.5 Mc/s for use in the Multiple Corridor Identification System (MCIS) Program. EADF requested use of the international emergency frequency 121.5 Mc/s to communicate with civil aircraft approaching, or already in, the corridor identification zones of the Northeast U.S. This frequency was probably requested because all civil aircraft, both domestic and foreign, are channelized on 121.5 Mc/s. The use of the international emergency VHF frequency for identification purposes did however derogate the international agreement as to authorized uses for 121.5 Mc/s and could possibly lead to a situation of interference with distress communications. The Air Defense Branch of AFOOP, who is the recipient of the request from ADC, was informed that frequency 121.5 Mc/s would not be authorized for this purpose. The EADF use of 121.5 Mc/s for multiple corridor identification system was reconsidered in March at the request of EADF. The CAA stated that use of this frequency for MCIS identification appeared desirable. Based on these facts, the Frequency Branch, in collaboration with AFOAC-E/N and ADC branch of OOP, approved EADF use of 121.5 Mc/s for a 6 months temporary period. ADC was instructed to furnish a complete report to Headquarters USAF at the end of the 6 months period to indicate whether permanent assignment of 121.5 Mc/s for MCIS identification is feasible. (SECRET)

6. GCA AT HANSCOM FIELD, BEDFORD, MASSACHUSETTS. Headquarters ADC requested authority to use 120.7 and 122.5 Mc/s for communications between Hanscom GCA and civil aircraft desiring GCA approaches.

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Before the Civil Aeronautics Administration (CAA) could agree to Air Force use of civil frequencies by military GCA for civil aircraft, a basic policy regarding such operations had to be resolved between the two agencies. Headquarters USAF asked the CAA for a policy ruling as to whether civil aircraft may utilize military GCA during VFR and/or IFR conditions and what responsibility and liability the Air Force assumes when accepting civil aircraft for GCA runs. This did not preclude the use of 121.5 Mc/s by civil aircraft in the event of an actual emergency. For these reasons this request was denied. (UNCLASSIFIED)

7. GCA AT YOUNGSTOWN, OHIO. Headquarters AACS requested assignment of a civil VHF frequency which was common to all air carriers for use in the Youngstown, Ohio military GCA unit. Installation of such a frequency would have permitted military GCA personnel to increase the number of training GCA runs by offering training runs to air carriers at that location. The CAA stated, however, that no frequency was available for this purpose due to the congestion of VHF assignments in the Youngstown area. (UNCLASSIFIED)

8. REASSIGNMENT OF THE ILS FREQUENCIES. The Civil Aeronautics Administration (CAA), has reassigned the ILS frequencies for McGuire Air Force Base, Dover Air Force Base and Stewart Air Force Base. This action completed the "Transition Period" priority plan for assignment and use of ILS frequencies as recommended by the NTCA Special Committee No. 57. (UNCLASSIFIED)

9. TACAN FREQUENCIES. Frequency assignments for USAF TACAN System were considered by the Inter-Department Radio Advisory Committee.

SECRET

Applications were sent to IRAC for frequency assignments for 18 fixed locations in Alaska and also for assignment of 8 clear frequencies for future use by mobile TACAN stations in the US and its possessions. These applications were the first to be submitted to meet TACAN requirements. Application for 21 fixed requirements will be submitted as soon as the frequencies have been engineered. All frequencies selected for assignment were clear of the Civil ILS system and military Mark X IFF frequencies. Tests were made to indicate to what extent these 3 systems can share frequencies in the future. The 49 TACAN channels available are completely clear of any other service. The US Navy made application for those fixed stations which are under their supervision and also made application for 8 frequencies for fleet use. (CONFIDENTIAL)

10. VIDEO RAPID TIMING SYSTEM. An Air Proving Ground Command requirement for the use of the Band 54-60 Mc/s (TV Channel 2) was submitted to the Federal Communications Commission (FCC) for coordination. During the course of installation of the video rapid timing system at Eglin Air Force Base it was determined that unless a repeater was installed, one particular area would be unable to receive the master station broadcasting on TV channel 4 due to terrain obstructions. The most desirable solution appears to be the use of a repeater station operating on the intermediate frequency of the receivers already programmed for this project. This system will be much cheaper than a repeater operating on the same frequency or an alternate solution of installing separate towers for each receiver antenna. (UNCLASSIFIED)

D. UHF, SHF AND EHF (300 MC/S TO 300,000 MC/S):

1. MODEL II SHORAN. Headquarters Tactical Air Command requested a frequency plan for the Model II Automatic Shoran Bombing System. TAC was advised that since the frequency range of this system (525-705 Mc/s) was in the UHF television broadcast band, it would be necessary for Headquarters USAF to coordinate all frequency assignments with the Federal Communications Commission, and that TAC should request frequencies in accordance with CEI paragraph 2109.4 for each specific location. TAC was further advised to submit application at least sixty (60) days prior to date of planned operations. (SECRET)

2. CINCPAC FREQUENCIES. UHF channels for CAA/Military air/ground communications in the Pacific were engineered. The Frequency Branch forwarded a recommended list of UHF radio frequencies to CINCPAC for comment. The selection of these frequencies was based on the same criteria used for the ZI and Alaskan theater plans and will use the same families of joint frequencies. (UNCLASSIFIED)

3. UHF IN ALASKA. UHF channels for CAA/Military air/ground communications in Alaska are now being selected. The Frequency Branch is now in the process of selecting UHF channels for the Alaskan CAA/Military System. This selection is based on the same criteria used for the ZI plan and will use the same families of joint frequencies. (UNCLASSIFIED)

4. TROPOSPHERIC SCATTER. The Federal Communications Commission has been requested to comment on the use of UHF TV frequencies by the United States Air Force and Canada in Newfoundland and Labrador. Eight frequencies ranging from 571 Mc/s to 731 Mc/s have been selected

for use between Air Defense Radar Stations in the NEAC area to meet point to-point communications requirements. These circuits will use tropospheric scatter equipment operated at 10 kilowatts of power with FM emission. Canada requested that the Federal Communications Commission be allowed to comment on this proposal in order that the FCC might have a chance to evaluate the possibilities of interference to television broadcast operations in the U.S. (SECRET)

5. MILITARY UHF PROGRAM FREQUENCIES TO BE USED BY CAA. A total of 57 UHF frequencies have been allocated this program for communicating with military aircraft. Within this complement, we have 10 groups of compatible frequencies. A systematic method was used to assign these frequencies which resulted in compatible families at all locations. In so doing, we adapted the rule of a minimum distance of 500 miles for co-channel assignments, 270 mile separation for adjacent channel assignments and a 5 megacycle frequency separation at a specific location. Three of these frequencies were assigned specifically for GCA, 1 for airport local control, 1 for airport ground control, 1 for all IMSAC reporting below 17,200 ft., 1 for all ARTC centers reporting above 17,200 ft. The remaining frequencies are assigned to approach control Departure and ARTC centers. Due to the numerous CAA airports between Boston, Massachusetts and Washington, D.C., the GCA frequencies could not be separated by the 270 and 500 mile spacing as previously stated. During the past, these assignments were on a tentative basis so that CAA field offices could make comments on the adequacy of the plan. Effective 27 January 1954, these assignments were on a permanent basis. CAA field offices were notified of this. (UNCLASSIFIED)

SECRET

E. RECORDS:

1. CEI. Chapter II of the USAF CEI was rewritten. The Frequency Branch reviewed the draft copy of Chapter II with special attention being given to items relating to frequency allocation and assignment. This revised draft of Chapter II contained much new material. (UNCLASSIFIED)

2. RADIO FREQUENCY INTERFERENCE AND COMMUNICATIONS JAMMING. A survey of high frequency radio interference reports was conducted by the Frequency Branch to determine whether there was a trend toward more intentional jamming. The survey indicated that an even flow of interference reports arrived at this Headquarters during the period, and that there was no appreciable change in the number of reports indicating intentional jamming. (CONFIDENTIAL)

3. COORDINATION WITH PORTUGUESE. The Portuguese Government was furnished a list of low, medium and high frequencies used by the USAF in the Azores. This list indicated that, with only three exceptions, the Atlantic City Table of Frequency Allocations program has been implemented in the Azores. This was in keeping with the US commitment to bring our frequency usage world wide into the proper bands as agreed at Atlantic City (1947). (UNCLASSIFIED)

4. USAF FREQUENCY APPLICATIONS DURING 1953. A breakdown of radio frequency assignment applications submitted during 1953 to the Frequency Assignment Sub-committee of the Inter-department Radio Advisory Committee revealed the following approximate totals:

| | |
|---|---|
| Air Force | 800 applications |
| Army | 575 applications |
| FCC | 550 applications |

| | |
|---|---|
| Navy | 500 applications |
| CAA | 400 applications |

Comparatively few frequency applications were submitted by Government Agencies other than those listed above. Frequency applications during the period 1 January 1954 to 30 June 1954 have continued at nearly the same rate as in 1953. (UNCLASSIFIED)

5. REVIEW OF AIR FORCE LISTINGS IN THE IRAC STATION LIST. An extensive review of the Inter-department Radio Advisory Committee station list was made by the Frequency Branch. This review insured the correct listing of current Air Force Stations and their frequency assignments. (UNCLASSIFIED).

6. RADIO FREQUENCY RECORD CHECK. In May, a complete check was begun of the following basic records:

a. IRAC Station List

b. Frequency Allocation and Uses

c. USAF Frequency Assignment Cards

d. Frequency Utilization Reports

The check was approximately 50% complete as of 30 June 1954. (UNCLASSIFIED)

F. MISCELLANEOUS:

1. EXECUTIVE COUNCIL, CENTRAL RADIO PROPAGATION LABORATORY (CRPL). The Radio Propagation Executive Council of the CRPL, composed of representatives of government and private communication agencies is designed to guide the activities of the Laboratory prepare the general program of work establish priority of jobs and assist in preparation of the CRPL budget. The Director of Communications has indicated the desirability of strengthening USAF representation on the Council, with a view to providing more positive guidance to the laboratory and at the same time achieving optimum benefit to the USAF from the CRPL program. The Council met on 11 May 1954, and elected Dr. A. B. Lombard Scientific Advisor to the Director of Research and Development as Chairman; principal USAF representation will be provided by AFDC alternate membership and Vice-Chairman by this directorate. Action was taken through the IRE to solicit more active support of the council by industry representatives. The next meeting is scheduled for 28 July prior to completion of the physical relocation of the CRPL from Washington to Boulder, Colorado. (UNCLASSIFIED)

2. ADVANCE FORECASTS OF RADIO PROPAGATION CONDITIONS. Advance forecasts of radio propagation conditions for high frequency communication paths in the North Atlantic and North Pacific areas (separately) were received twice weekly by the Frequency Branch. The forecasts were issued by the Central Radio Propagation Laboratory (CRPL) covering a 25 day period. They contain a day by day quality figure for circuit performance and indicate specific dates on which

disturbed ionospheric conditions are expected. Approximately 50 USAF addressees, HQ and overseas, received this same information from the CNPA by mail and telegram. USAF distribution of the forecasts was controlled by the Frequency Branch. (UNCLASSIFIED)

3. TECHNICAL MEETINGS. A joint meeting of the International Scientific Radio Union (URSI) and the IRE professional Groups on antennas and propagation and on microwave theory and techniques was held at the National Bureau of Standards on 3 - 4 May 1954. The first IRE symposium on global communications took place on June 23 - 25 at the Statler Hotel and included presentations by Mr. Meaber. (UNCLASSIFIED)

4. GROUND OBSERVER CORPS ACTIVITIES. A discussion was held with members of the FCC Safety and Special Radio Services Bureau on the use of certain commercial and amateur radio facilities to pass flash aircraft sightings from GOC posts. The problem of ADC in obtaining low-level air surveillance and the proposed solution were outlined to the bureau members. It was the informal opinion of the bureau staff that no objection would be made to the use of amateur radio facilities for this purpose and that the necessary machinery existed in the RACES program. It was carefully pointed out to the bureau that the USAF required the establishment of a policy which would be immediately and continuously effective under peacetime conditions and that this policy should not be confused with or delay the development of wartime arrangements now under study. A formal request was made to the FCC for the establishment of the desired policy. (UNCLASSIFIED)

5. AIR NATIONAL GUARD SUMMER ENCAMPMENT. The Frequency Branch assigned 3 low frequency tower frequencies, 2 VHF tower frequencies

and 2 low frequency homer frequencies to Headquarters AACS for support of Air National Guard Summer Camp activities. Locations where these frequencies will be used are Casper Wyoming; Alpena, Michigan; Camp Douglas Wisconsin and Gulfport Mississippi. The frequency assignments are temporary and will expire 4 September 1954 (UNCLASSIFIED)

6. UNITED NATIONS CIRCUIT. The Assistant Director for Telecommunications OCDM wrote a letter to all government agencies requesting that assistance be given to the Department of State in support of the establishment of a radio circuit to be operated by the United Nations between New York and Geneva. The treaty establishment of a radio circuit to be operated by the United Nations between New York and Geneva. The treaty establishing the United Nations Headquarters at New York contains provision for the operation of radio circuits independently by the U.N. The transmitter at New York will be owned by the U.N. and operated and maintained under contract by Press Wireless at Hicksville. The Assistant Director of Telecommunications was advised concerning the possibility of interference of any frequencies proposed by the U.N. which are referred to IRAC for consideration. (UNCLASSIFIED)

7. SOLAR ECLIPSE PROJECT. Air Force Cambridge Research Center sponsored the Solar Eclipse Expedition during the period of 20 June to 5 July 1954. This project obtained geodetic data of value to the Air Force. Communication was required between observation points in Quebec, Labrador Iceland Faeroes Shetland Islands Greenland and Iran. The Frequency Branch cleared the necessary frequencies.

Additionally, arrangements were made to use AACS facilities at the Azores and Sidi Slimane to re-broadcast WWV time signals to the observation points. Continuous accurate time recordings were necessary in carrying out the project. (UNCLASSIFIED)

8. AIRBORNE JAMMING TESTS. Air Research and Development Command in conjunction with Strategic Air Command requested authority to conduct jamming tests at Barksdale Air Force Base during the period 12 April to 12 May 1954. Inasmuch as this portion of the spectrum was heavily used by non government services including flight and safety service, authority to conduct jamming transmissions was given subject to full prior coordination of tests schedules with the local Federal Communications Commission Field Engineering Office. The tests resulted in unacceptable interference and were discontinued. (SECRET)

9. ICAO MEETING. The U.S. representatives at the April ICAO meeting in Montreal were approached by representatives of the U.K., France, Belgium and Netherlands with a complaint that the large number of military aircraft movements were overloading air-ground frequencies. They suggested setting up additional frequencies from the Route and/or Off-Route bands. The problem appeared to be a result of a European area requirement that position reports be made on both HF and VHF channels. Since the elimination of this dual requirement appeared to be the better solution, and since it is a problem peculiar to the European area which is well known to USAFE, the US representative was advised to recommend to the European representatives that the problem should be referred to the ICAO Paris office. USAFE was advised accordingly and requested to coordinate with the Paris office on the problem. (UNCLASSIFIED)

10. NEW AIR FORCE REGULATION. An Air Force regulation has been published concerning training in radio frequency allocations. AFR 100-53 28 January 1954 describes the one (1) year training course conducted in the Frequency Branch and incloses an application format. (UNCLASSIFIED)

11. VISIT TO AIR UNIVERSITY. On 22 January 1954, Lt Colonel Carroll, Lt Colonel Weigel and Mr. Meaker, Frequency Branch, visited the C-E Staff Officer Course, Air University and gave a presentation entitled "Sources of Radio Frequency Data". (UNCLASSIFIED)

12. DRAFT EXECUTIVE ORDER. The Assistant Director for Telecommunications, Office of Defense Mobilization, requested that a draft executive order assigning radio frequencies to Government radio stations be prepared for submission to the President by 1 June 1954. This draft order consisted of a single page order and incorporated, by reference, the latest edition of the IRAC assignment list entitled "Frequency Assignments to Government Radio Stations and Classes of Stations." This document replaced the former official frequency assignment document known as Executive Order Listings. The Frequency Branch reviewed Air Force assignments to assure correctness prior to the 1 June date. (UNCLASSIFIED)

13. ECM TESTING FACILITY. A study was made in January by the Frequency Branch to determine the degree of radio interference which may be caused if the Rome Air Force Base "ECM" facility is relocated. The present ECM facility, located at Rome Air Force Base, has had to operate under rather strict operational restrictions in the past in order to prevent harmful interference. The study included the relative desirability of Patrick Air Force Base, Florida, and Fort Huachuca, Arizona as possible new locations for this ECM facility.

An analysis of existing frequency assignments within a 100 mile radius of these locations indicated that Fort Huachuca was the best location from a frequency assignment and probability of interference point of view. The study was given to the Director of Research and Development for action. (CONFIDENTIAL)

14. CANADA-US AGREEMENT. A meeting between Canadian and U.S. radio frequency assignment groups was held at Ottawa, Canada, in April. Representatives from the IRAC and FCC met with representatives of the Department of Transport and other Canadian services to discuss problems arising from implementation of the Atlantic City Table of Frequency Allocations. Of major interest to the Air Force was the allocation of two air/ground frequencies for the Seattle-Alaska air route and of the clearance of two (OR) frequencies for USAF in the North Atlantic. These were needed in order to implement the cargo ship working bands. A further agreement was made to allocate a new band of frequencies for the trans-polar air route. (UNCLASSIFIED)

FREQUENCY BRANCH

Lt Col Weigel - Chief
Mr. Corley - Chief Engineer
Mrs. Lewis - Steno

RECORDS SECTION

Lt Col McBee - Chief
A/2c Andrews
Mrs. Pershing

HF SECTION

Mr. Meaker - Chief
Mr. McCarley
Mr. Simmons
Mr. Dvorsky
Lt Flesner (Stu Off)
Miss Minor

VHF-UHF SECTION

Major Bradley - Chief
Capt Ogle
Capt Zielinski (Stu Off)
Mrs. Dye

Organization Chart as of 30 June 1954

Appendix I

FREQUENCY BRANCH

1. The Branch is responsible for assignment of radio frequencies to all Air Force activities and installations. The Branch regulates the utilization of frequencies, and serves as the USAF authority on all radio frequency matters in much the same way as the Federal Communications Commission regulates the civilian use of radio frequencies.

2. The Branch formulates plans and policies concerning the allocation, assignment, and use of radio frequencies by USAF units on a global basis and supervises and coordinates all matters pertaining to technical standards and training of communications electronics personnel. The Frequency Branch determines the policies concerning the frequency allocation, assignments and utilization for operations of all electronic devices of the Air Force such as ground radar, bombing radar and navigation systems.

3. The Branch maintains all records of Air Force radio frequency assignments and is an official office of records for the vital resources of radio frequencies.

4. The Branch provides representation to the Frequency Allocation Panels of the Joint and Combined Communications-Electronics Committees, the Interdepartment Radio Advisory Committee and panels of the Telecommunications Planning Committee. The Branch formulates the Department of Air Force position to determine basis upon which to act in regards to problems of these groups. Through coordination effected by these committees with the Federal Communications Commission, overall national policy is determined.

5. The Branch provides representation to international conferences dealing with frequency problems, engages in preparatory meetings to determine the U.S. position on problems to be discussed as well as the composing of the instructions to be followed by the delegation.

6. The Branch is responsible for broad long-range Air Force programs for the use of commercial radio frequencies and facilities which would be made available to the Department of Defense upon invocation of Section 606 of the Communication Act.

7. The Branch is responsible for directing a program of training and familiarization for officers who will eventually be assigned to Air Force and theater staffs as radio frequency assignment officers.

# DIVISION OFFICE

# ELECTRONICS SYSTEMS DIVISION

# HISTORICAL REPORT

# COVERING THE PERIOD

# 1 JAN - 30 JUN 1954

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## SECTION I

### A. ORGANIZATION

The Electronics Systems Division is organized with a division office and three branches: Aircraft Control and Warning Branch, Navigational and Air Traffic Control Aids Branch, and Electronics Warfare Branch.

The personnel assigned to the division office as of 30 Jun 1954 are as follows:

Colonel Harry A. French

Lt Colonel William J. Retzbach

Miss Huldah J. Wiebe

### B. FUNCTIONS

The functions of the Electronics Systems Division are as follows:

Provides technical guidance and advice for the planning and operation of Navigational and Air Traffic Control Aids, Aircraft Control and Warning, Tactical Air Control, and Electronics Warfare Systems.

Establishes requirements for Air Force participation in the Common System Air Traffic Control and Navigation program.

Determines the need for control and controls the issue of critical items required for specific electronic systems.

Formulates and participates in determining doctrine for the utilization of electronic systems equipment.

## SECTION II

## ACTIVITIES

In March 1954, Colonel Harry A. French was designated the Air Force representative on the VORTAC Evaluation Committee of the Air Navigation Development Board. The VORTAC Committee has been formed to determine the feasibility of utilizing TACAN as part of the common navigation system. (UNCLASSIFIED)

In February 1954, Colonel Harry A. French was designated the Directorate of Communications Project Officer for the Guided Missile Program. This was in response to a memorandum from the Vice Chief of Staff directing that all Air Staff agencies intensify their efforts towards participating in and solving the many problems in this area. (UNCLASSIFIED)

AIRCRAFT CONTROL AND WARNING BRANCH

HISTORICAL REPORT

COVERING THE PERIOD

1 JAN - 30 JUN 1954

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CHAPTER I

ORGANIZATION AND FUNCTIONS

The mission of the Aircraft Control and Warning Branch is to:

Provide technical guidance and advice for the planning and implementation of aircraft control and warning systems, tactical air control systems, and short range electronic reconnaissance systems.

Prepares quantitative requirements for and controls the issue of critical electronic equipment required for AC&W and TAC control systems.

Assists in the preparation of T/O&E's, manning documents, JANAP's, and other publications pertaining to Aircraft Control and Warning and Tactical Air Control Systems.

Represents the USAF on Joint and Combined Warning and Target Information Panels of the US and Combined JCEC's, and on the Joint CAA-USAF Air Defense Planning Board.

Formulates USAF policy in the use of IFF systems.

Reviews, coordinates, and/or prepares and recommends military characteristics for electronics systems and equipment for Aircraft Control and Warning and Tactical Air Control Systems.

The personnel assigned as of 30 June 1954 to the AC&W Branch were as follows:

Major R. G. Rushforth, Chief of Branch

Major H. T. Eldridge, Plans Section

Major L. D. King, Ground Radar Section

Major C. M. Thompson, Ground Radar Section

Major E. R. Dickey, Ground Radar Section

Major T. F. Meehan, Ground Radar Section

Captain R. L. Brouillard, Ground Radar Section

Flight Lt. A. Robinson, Plans Section

Mrs. Rose Mary Jarman, Secretary

Miss Rita Homa, Secretary

During the period covered by this history, the following personnel departed this branch with assignments as follows:

Lt. Colonel Ralph S. LaMontagne reassigned to Air Force Cambridge Research Center, Cambridge, Massachusetts.

Major Lewis S. Norman reassigned to Joint US Military Group, Spain.

CHAPTER II

ACTIVITIES

Policy for Fitting of IFF Mark X Equipment in USAF Aircraft

A fitting policy for IFF Mark X equipment in USAF aircraft has been developed in coordination with the Directorates of Communications and Operations. This policy, promulgated by the Directorate of Communications, reads as follows: "All aircraft that will remain in the active inventory one year after modification and that may be required to fly through Air Defense Zones must be fitted with IFF Mark X equipment. Light trainers, liaison aircraft and helicopters can be excluded". (SECRET IAW par 23a, AFR 205-1)1/

USAF Aircraft Modification Program Booklet

Major E. R. Dickey of the Aircraft Control and Warning Branch, Electronics Systems Division and Mr. T. Crigler of the Programs and Standards Branch, Plans and Policies Division attended a conference within Headquarters from 18 to 25 January for the purpose of reviewing and commenting upon the first draft of the new USAF Aircraft Modification Program Booklet. Numerous errors were detected and corrected. A master copy of the current modification program is maintained in the Aircraft Control and Warning Branch. (CONFIDENTIAL)

Release of AN/APW-11 Radar Control Beacon to NATO

Several NATO nations have need for the AN/APS-11 radar control beacon for use in aircraft that are to work under AN/MSQ-1 radar control. However, because of the confidential security classification of the AN/APW-11, it was necessary for this office to obtain specific Air Staff

1/ - AFOAC msg 53787 dtd 18 Mar 54

approval for the release to NATO. (CONFIDENTIAL)2/

Advance IFF Mark X Capability for USAFE

In an effort to give USAFE some IFF Mark X capability prior to the time they could receive standard equipment from normal production, ten (10) AN/UPX-7 lightweight ground interrogators were shipped for interim use on TPS-1 C/D radars. Most of the standard equipment is expected to be delivered by the end of Calendar Year 1955. (CONFIDENTIAL)

Security Classification of IFF Information and Equipment

In coordination with UK and Canada, a new IFF Mark X security classification policy has been developed and promulgated throughout the USAF. The new policy is still not entirely satisfactory, however, and some work is being done to further modify it. (CONFIDENTIAL)3/

Release of Basic IFF to Japan

Action was initiated to seek Canada-UK-US approval for the release of the basic IFF Mark X system to Japan on a government-to-government basis. (CONFIDENTIAL)4/

Deletion of Pyrotechnics from SAC aircraft

Strategic Air Command has been granted temporary authority to delete pyrotechnic signals from B-29, B-50, B-36, B -47, B-52 and other aircraft considered by SAC to warrant removal. (CONFIDENTIAL)5/

Iff Fitting Policy for NATO Nations

Supreme Headquarters Allied Powers Europe (SHAPE) developed an IFF fitting policy for use by NATO nations and submitted it to USAF for

2/ - Memo for AFOAC-P, Subj: "Release of AN/APW-11 Information and Equipment to Foreign Nations" dtd 29 Jan 54
3/ - Ltr to AIMAJCOM, Subj: "IFF Security Classification Policy" dtd 14 May 54
4/ - Memo for DCS/O Subj: "Integration of Jap Nationals into AC&W System of JADAF" dtd 8 Jan 54
5/ - AFOAC Msg 51009 dtd 11 Jan 54

review. USAF objected to one paragraph concerned with the continued use of IFF Mark III equipment and recommended that the policy be formally submitted to the Combined JCEC for approval. This was done, and in the process the objectionable paragraph was revised. (SECRET)6/

Radar Safety Beacons for Civil Aircraft

Considerable progress has been made on development of a radar safety beacon for use by Civil aircraft. This system, if adopted by the Civil Aeronautics Administration, will be compatible with a portion of the military identification system and will enable military ground radars to detect civil aircraft. Prototypes are expected to be demonstrated in July this year. (CONFIDENTIAL)

Installation of IFF Mark X at Washington National Airport

Action was initiated to establish a project by the USAF through CAA to install IFF Mark X equipment at Washington National Airport. When completed, this action will aid in the traffic control of military aircraft in the Washington area. U. S. JCEC approval has been obtained for this project. (CONFIDENTIAL)7/

Weapons Systems Concept

The Assistant for Logistics Plans, DCS/M, has been asked to include the entire environmental and weapon systems concept in future logistics plans documents. This request was made after review of Logistics Plans for F-100A, B-66, B-57A and other weapons systems. (CONFIDENTIAL)

6/ - Memo for JCEC, Subj: "Compilation of IFF Mark X Information for Dissemination and Use by NATO" dtd 20 Apr 54
7/ - Memo for JCEC, Subj: "Installation of IFF Mark X at Washington National Airport dtd 20 Apr 54

SECRET

Improvement Program for a Tactical Air Control System.

The low operational capability of the Tactical Air Control Groups dictated the requirement for a major improvement program. As a result of a world-wide conference in February, 1954 at this Headquarters, a decision was reached as to the best method of achieving this end. Tactical Air Command presented a formal recommendation on the results of this conference, which consisted of:

Phase I. The procurement of available Mink and Rafax (optical display and data transmission equipment) to be utilized in the 1954-1956 era to improve the data handling capability of the present Tactical Air Control Groups.

Phase II. Maximum emphasis on the continued development and procurement of a semi-automatic system (Cartrac Consoles and Airmap Com-puter and associated equipment) to be available for the five (5) Tactical Air Control Groups during 1957 to 1960.

Preliminary concurrence in the above was given by the interested directorates. (SECRET)8/

Ground/Air Data Link

With regard to the compatibility difficulties between Air Force and Navy Data Link equipment, the Secretary of the Air Force supported the Air Force position in proceeding with the procurement of quantities of ground and air equipment necessary to meet our urgent operational requirements. The Office of Assistant Secretary of Defense (R&D and Applications Engineering) upheld this decision and indicated to the Joint Chiefs of Staff that Air Force procurement would not be stopped provided Joint

8/ - Memo for Gen Blake, Subj: "Improvement Program for a Tactical Air Command System" dtd 25 Jun 54

SECRET

Military Characteristics could be prepared in the immediate future. The Joint Chiefs of Staff referred the problem to an Ad-Hoc Group on the 25th of June, 1954 for resolution. (SECRET)9/

SHAPE Radar Plan 1953-1956

An evaluation of the SHAPE radar plan was conducted in an attempt to determine the quality of information contained therein for logistic guidance on the operational capability of the national AC&W system as a NATO network. The recommendation on the SHAPE radar plan was forwarded to the Secretary of Defense for action as deemed necessary. (UNCLASSIFIED)

Radar Towers

Headquarters ADC submitted a requirement for towers for the radar equipment programmed for first and second phase semi-mobile programs. A study was made by ARDC to determine the feasibility of utilizing towers presently available in AMC depots. It was found that the radar tower AB-107/TPS-10, with a small modification, would meet the operational requirement for the AN/TPS-1D Radar Set. These towers were available in SMAMA and were programmed to be declared as excess. The AB-302 towers, available in AMC depots, were made available for the AN/TPS-10D radar sets. The Corps of Engineers were given the responsibility of providing towers for the AN/MPS-7 and AN/MPS-14 radar sets. (UNCLASSIFIED)10/

9/ - JCEC 1734/10 dtd 22 Jun 54 and AD/DLCAM 1/D dtd 25 Jun 54, Subj: "Compatibility of Ground/Air Data Link"
10/ - R&R to AFCIE-CS, Subj: "AB 107/TPS-10 Towers" dtd 13 Apr 54

SECRET

Communications Equipment for AN/MSQ-1A Radar Set

In a conference held in Directorate of Communications on 8 June 1954, it was determined that the AN/MSQ-1A Radar Set should be equipped with two (2) AN/GRC-27 UHF radio sets. In addition, necessary cabling and connectors should be installed for VHF operations. The VHF capability is required specifically for USAFE and MDAP operations since aircraft in these theaters will not be completely equipped with UHF for approximately two (2) years. When VHF operations are required, equipment is to be provided by using organization or country from existing authorization. (UNCLASSIFIED)11/

Semi-Automatic Direction Center System

An Air Force Joint Project Office was organized and activated, effective 7 May 1954, to be known as the Air Defense Engineering Services Project Office, to coordinate the work of military and industrial services involved in providing system engineering, equipment design, procurement, production, maintenance, supply, installation and testing of the complete semi-automatic direction centers. This project office is composed of representatives of Air Research and Development Command, Air Materiel Command, Air Defense Command, and a representative of the Assistant Chief of Staff Installations, Headquarters, USAF. Representatives of other commands, services and agencies may be provided on a temporary or permanent basis as necessary. A contract was completed and signed on 30 June 1954, with Western Electric Company to provide engineering services in connection with this project. (UNCLASSIFIED)

11/ AFDAC msg 36236 dtd 11 Jun 54

SECRET

# ELECTRONIC WARFARE BRANCH

## HISTORICAL REPORT

## COVERING THE PERIOD

## 1 JAN 1954 to 30 JUN 1954

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## CHAPTER I

### ORGANIZATION

The personnel assigned to the Electronic Warfare Branch as of 30 June 1954 are as follows:

Lt Colonel John M. Van Arsdell

Major James A. Trutter

Major Frank Witry, Jr.

Captain Robert E. Holmes

Mrs. Barbara E. Davis

Miss Cira Barretta

Major L. E. Manbeck departed this headquarters as of 6 January 1954 for PCS transfer to C&E Staff Course, Air University, Maxwell Air Force Base, Alabama.

### FUNCTIONS

The functions of the Electronic Warfare Branch are as follows:

1. Provides technical guidance and advice for the planning and implementation of electronic warfare systems.

2. Formulates and submits to the Air Staff, electronic warfare plans and policies, and reviews existing plans and policies for adequacy and applicability.

3. Furnishes personnel for Joint and Combined Electronic Warfare Boards and Committees.

4. Establishes and monitors quantitative Air Force electronic warfare equipment needs and controls the issue of critical items.

5. Maintains close liaison with electronic warfare development,

procurement, and intelligence activities in order to provide consonance of electronic warfare systems with the Air Force mission.

6. Assists in the determination of electronic warfare personnel requirements and assignments, and in the preparation of programs for the training and utilization of electronic warfare personnel.

## CHAPTER II

## ACTIVITIES

### RC-121 AEW AIRCRAFT FOR ADC

Air Defense Command was advised that RC-121 AEW Aircraft would be fitted with AN/ALA-6 D/F equipment in the ECM position, rather than Navy developed AN/APA-69 D/F equipment. Since the RC-121 airborne early warning aircraft was developed by the Navy, the AN/APA-69 D/F unit had been included in the original configuration. The decision to replace the AN/APA-69 with the AN/ALA-6 was advisable since the AN/ALA-6 is a commonly used Air Force equipment which will be much easier to support and maintain. (CONFIDENTIAL).

### ELECTRONIC WARFARE ORGANIZATION PROPOSAL

This office favorably indorsed a 12th Air Force proposal for a ground based electronic warfare organization capable of performing both active and passive countermeasures functions. In forwarding the proposal to the Directorate of Requirements, this office pointed out the increasing need within Tactical Air Forces for a unit of this nature to perform various intercept and jamming tasks, especially against missiles using electronic means of guidance. This office recommended that the 12th Air Force proposal be forwarded to the Tactical Air Command for consideration and submission of more detailed recommendations.(SECRET).

### SHORTAGE OF CHAFF

This office took the lead in efforts to overcome the shortage of

Chaff (Confusion Reflectors). Funds were provided Air Materiel Command for increasing Chaff production contracts and also for the construction of additional Chaff manufacturing facilities. A rigid allocation of present stockpiles of Chaff was continued. Present forecasts indicate a general shortage of Chaff until mid 1956, at which time increased manufacturing capabilities are expected to permit adequate stockpiles and training quantities. (SECRET).

ECM TEST FACILITY

The office participated in obtaining approval of an engineering test facility at Rome Air Development Center, Griffiss Air Force Base, New York. This test facility involves the use of many and varied radar and communications equipments. Without this test facility, the Rome area is subject to radio frequency congestion, hence unusual precautions had to be applied in conjunction with the establishment of this test facility. (CONFIDENTIAL).

HF COMMUNICATIONS JAMMER

The office participated in a series of conferences, studies, and reviews of the problem of obtaining a suitable airborne HF communications jammer. The problem revolved around the difficulty of using the AN/ALT-3 H/F jamming equipment with antenna limitations necessary in high speed aircraft. Towards the end of the reporting period, a decision had been made to procure a limited number of a re-engineered version of the AN/ALT-3. This re-engineered version is expected to carry the designation AN/ALT-9. (SECRET).

SECRET

ECM REQUIREMENT FOR TROOP CARRIER AIRCRAFT

This office took action to delete from the ECM Equipment Buying Program all ECM equipment scheduled for troop carrier aircraft. This action was the result of decisions made by the Director of Operations and Director of Requirements to the effect that troop carrier operational concepts did not envisage a need for electronic countermeasures. In discussing this action with the above directorates, this office questioned the advisability of this decision, pointing out an alternative course of action would be providing "Group A" provisions for certain key ECM equipments and procuring these equipments, thus providing a "life insurance policy" in case the concept for use of troop carriers changed in the future. The space and weight requirements for ECM do not appear critical in troop carrier aircraft, and a troop carrier aircraft concept developed in peacetime does not appear to be an adequate basis for eliminating entirely ECM provisions from these aircraft. This point of view was not concurred in by Director of Operations and Director of Requirements. (SECRET).

ALASKAN COMMAND ECM POLICY

The office received from the Alaskan Command a copy of that command's statement of electronic countermeasures policy. The policy was submitted to the Joint Electronic Warfare Panel for joint review in accordance with JCS Policy Memo No. 35. At the end of the reporting period, this policy was still under review. (CONFIDENTIAL).

AN/ALT-6 - AN/ALT-8 SITUATION

Headquarters AMC has requested and received a proposal from General

SECRET

Electric and Raytheon to expand the capabilities of both of these equipments. This involves the addition of several tuning unit extension kits to allow frequency coverage from 350 to 10,500 mcs. It also includes the addition of an automatic set-on receiver which will provide single signal automatic search and jam. AMC's recommendations on the funds required, producibility, and other technical data is to be forwarded to the Air Staff for approval in the near future. This action will provide a reduction in the number of types of ECM equipments required to cover the electronic spectrum of interest to the USAF, which, in turn, will simplify aircraft modification and production engineering for all SAC and TAC bombardment aircraft. This office will establish quantitative requirements and make appropriate recommendations for necessary funding. (SECRET).

IMPLEMENTATION OF AFR 80-32 (AIR FORCE QUICK REACTION CAPABILITY)

On 8 January 1954, Headquarters USAF published the subject regulation which established USAF Quick Reaction Capability in ECM. This office supports this program in recommending appropriate funding for QRC tasks beyond the first equipment which is provided for by ARDC funds. This office monitors the influence of QRC programs upon the quantiative requirements for standard USAF ECM equipment procured in R-237. Thus far, no QRC tasks have led to standard procurement action. At the present time there are 13 different items for ECM in the QRC program. (CONFIDENTIAL).

JANAP 163

The office took action to have AMC directed to compile JANAP 163 "Directory of ECM Equipment". This JANAP will be a companion publication to JANAP 161 "Directory of Communication Equipment", and JANAP 162 "Directory of Radar Equipment". (UNCLASSIFIED).

ORGANIZATION OF RADAR EVALUATION UNITS

In accordance with an Air Staff decision to utilize Radar Evaluaton Units for the conduct of anti-jamming training, the office, in coordination with the Director of Operations and Director of Requirements, initiated action to modify a number of B-29 aircraft with the capability to perform the anti-jamming mission. As of the end of the reporting period, the ECM configuration of the aircraft had not been firmly established. Upon modification, these aircraft will be assigned to Radar Evaluation Units within Air Defense Command, USAFE, FEAF, NEAC and AAC. (CONFIDENTIAL).

USAFE MODIFICATION OF B-26 AIRCRAFT

The office made arrangements for an officer of Headquarters 12th Air Force to visit several AMC supply depots for the purpose of expediting shipment of ECM equipment to Europe for use in the subject modification. These aircraft are being modified within the theater for use in anti-jamming training and development of ECM tactics and techniques. These aircraft will supplement the activities of the B-29 anti-jamming training aircraft outlined in a previous item. (CONFIDENTIAL).

SECRET

PROPOSED TEST OF CANADIAN DEVELOPED ANTI JAMMING CIRCUIT

In response to a Canadian proposal, the office made arrangements for testing of the Canadian developed "AFC anti-jamming feature". As of the end of the reporting period, a test in the fall of 1954 is anticipated, probably utilizing AN/APT-6 type jamming transmitters against Canadian radars equipped with the AFC anti-jamming device. (SECRET).

REQUEST FOR ADDITIONAL CIVILIAN PERSONNEL

Due to steadily increasing activities in electronic warfare throughout the Air Force, and a corresponding increase in the workload of this office, a request was submitted and justified for authorization of an additional clerk typist in this office. The additional typist commenced work in the office in June. (UNCLASSIFIED).

ECM OBSERVER (3024) CAREER FIELD

This office concurred in action initiated by the Directorate of Training which is expected to result in a change-over in the fall of 1954 of the ECM Observer from the present Communications-Electronics Career Field to the Combat Operations career field. A re-designated AFSC of 1574 is planned. This concurrence was given with the understanding that the Directorate of Communications has certain responsibilities for the USAF ECM Program, and that it would be established that ECM observer personnel are required in the CE family, and the requirements of the Communications-Electronics Field will be considered in the write-up by the Director of Training of AFSC and career area descriptions. (UNCLASSIFIED)

SECRET

SECRET

SERVICE TEST PROCUREMENT OF HOMING DEVICE AN/ARD-10

At the request of the Directorate of R&D, the office took action to procure 15 service test models of subject equipment. This action was required in order to expedite production and installation of this urgently needed equipment. Service test models will be used by Air Proving Ground Command for suitability testing and by ARDC in functional tests for bailment to aircraft contractors. The AN/ARD-10 is scheduled for installation in several types of fighter and fighter-bomber aircraft and in the B-57 Light Bomber, and will be used for homing on enemy electronic sites, with subsequent destruction of these sites anticipated. (CONFIDENTIAL).

AIR FORCE MANUAL (RADAR ANTI-JAMMING)

The office reviewed an ATRC prepared manuscript of the subject manual, and recommended that due to numerous minor technical errors and irregularities the manuscript should be edited by a technically competent editorial group prior to publication. (CONFIDENTIAL).

BOMB BAY ECM CRADLE FOR B-47 AIRCRAFT

In coordination with other interested Air Staff agencies, the office took action to provide Electronic Countermeasures Equipment for the subject project. The B-47 ECM Cradle Project was established by SAC to enable the 376th Bomb Wing to provide an important portion of SAC's ECM requirement. (SECRET).

SECRET

EQUIPMENT COMPONENT LISTS (ECL'S) FOR ECM EQUIPMENT

The office initiated action to establish ECM Equipment Authorizations in the form of Equipment Component Lists. The action was considered desirable in order to conform with Standard Air Force practice of equipment authorizations. In the past, ECM equipment authorizations have, in the main, been in form of Special Letters of Authorizations. As of the end of the reporting period, AMC had been furnished with the recommendations of the operating commands regarding the contents of the ECM Equipment ECL's. AMC was expected to resolve differences between command recommendations and publish the ECL's by the end of 1954. (CONFIDENTIAL)

REVIEW OF JOINT POLICY ON RELEASE OF EW INFORMATION TO NATO NATIONS

Since the subject policy had been in existence for 2 years, during which time numerous changes in equipment and security classification policies had occurred, a review of the existing policy was considered necessary prior to release of additional equipment and information to NATO. As of the end of the reporting period, a revised JCS policy was expected to be approved in the near future. (SECRET).

PRIORITY OF SHIPMENT OF ECM EQUIPMENT

The office continued the policy of establishing and informing AMC of priority of shipment of new production ECM equipment to using agencies. During the reporting period, AMC was furnished priorities of shipment instructions regarding the R-484/APR-14 Receiver, the AN/ARR-8B, the AN/ALA-7 Pulse Generator and the AN/APT-13 Radar Set. At the end of this reporting period, a decision had been made to transfer responsibility

for establishing priorities of shipment for ECM equipment to AMC. This decision was based upon the consideration that AMC is in a better position to perform this function and the performance of this task at this headquarters was not required. This office will closely monitor the actions taken by AMC regarding these responsibilities.(CONFIDENTIAL)

PROPOSED NEW APPROACH TO GROUND BASED JAMMING

As a result of a briefing by representatives of the Rome Air Development Center, the office informed Air Defense Command of a possible new approach to the ground based jamming problem and requested that ADC maintain close liaison with the Electronic Warfare Lab, RADC, regarding further development of the proposed new approach. The new approach is designated by RADC as "Distributed Area Jamming System". As opposed to the spot jamming approach typified by the AN/TRQ-8 and AN/MIQ-2 developments, the DAJS approach envisages the employment of broad band, low power, jammers. Testing so far conducted by RADC indicates that by the use of a Pulse Modulated jammer output with the jammer pulse synchronized with the PRF of a victim radar, a comparatively low power jamming signal can result in a reasonable amount of jamming against the main lobe of a victim radar. Numerous jammers would be required, spaced around the target area, in order to have reasonable assurance that a jammer would always be in the main lobe of the victim radar. Omni-directional jammer antennas would be employed. Cost of a single low powered jammer would be very low as compared to an AN/MIQ-2 system(SECRET).

CANCELLATION OF PROCUREMENT OF RR-6A/U CHAFF

As a result of recommendations of SAC, and with the concurrence

of TAC, this office initiated action to cancel all procurement action on RR-6A/U Chaff. RR-6A/U Chaff (S-band) had been scheduled for procurement together with RR-39/AL and RR-44/AL types because the response of RR-44/AL Chaff at the critical portion of the S-band (2600 to 3200 mcs) was believed inadequate for certain purposes. However, tests by SAC indicated that, on the contrary, response of RR-44/AL at that frequency was adequate. (SECRET).

UK-US DISCUSSIONS

A representative of this office accompanied a US group which visited the United Kingdom from 20 May to 4 June. A tour was conducted of British Headquarters, R&D, and operational units which involved the British ECM Program. (UNCLASSIFIED).

JOINT, COMBINED, AND INTERGOVERNMENTAL ACTIVITIES

The office furnished personnel for duties on the Joint Electronic Warfare Panel, the Combined Canadian-United Kingdom-United States Electronic (Radio) Warfare Panel, the Office of Defense Mobilization Telecommunications Planning Committee, and various Joint Electronic Warfare Ad Hoc Groups during the fiscal year. (UNCLASSIFIED).

RECONNAISSANCE SYMPOSIUM

The office provided representation to the 1954 Reconnaissance Symposium held at Maxwell AFB on 12-16 April. All phases of Air Force reconnaissance were discussed, and several pertinent recommendations regarding electronic reconnaissance were included in the Symposium report. (UNCLASSIFIED).

# NAVIGATIONAL AND ATC AIDS BRANCH

# HISTORICAL REPORT

# COVERING THE PERIOD

# 1 JAN - 30 JUN 1954

SECRET

PART L.

ORGANIZATION AND FUNCTIONS

A. The organizational functions of the Navigation and Air Traffic Control Aids Branch are as outlined below:

1. Provides technical guidance and advice for the planning and implementation of Navigation and Air Traffic Control Aids.

2. Exercises staff surveillance; initiates requests for procurement, installation, and operation; formulates and coordinates operational plans and policies; maintains liaison with developmental, engineering, and testing agencies; and programs, allocates, and controls the installation of Navigation and Air Traffic Control Aids.

3. Establishes requirements for Air Force participation in the Common Systems Air Traffic Control and Navigational Program.

4. Participates in civil and military committees as necessary to insure coordination on Navigation and Air Traffic Control Aids.

B. The following personnel were assigned to the branch as of 30 June 1954:

Lt Col Fred E. Kyer, Chief, Nav Aids and Traffic Control Branch
Lt Col Fred K. Durni, Chief, Traffic Control Communications Section
Maj Frank P. Quattlander, Traffic Control Communications Section
Maj R. E. Van Gorden, Traffic Control Communications Section
Captain J. C. Woodward, Traffic Control Communications Section
Lt Col D. E. Myers, Chief, Short Range Navigation Section
Maj C. K. Swanson, Short Range Navigation Section
Maj G. L. Madara, Chief, Approach and Landing Aids Section
S/Sgt Elsie F. Illg

SECRET

Mr. E. Stuhrman

Miss Ann Riedford

Miss Garnet M. Burkholder

Mrs. G. C. Ingersoll

Miss Rose E. Maher

C. During the period covered by this report, the following personnel departed from assignment with the branch:

Colonel J. A. Plihal was transferred to the 4418th TAC Communications Group, Donaldson Air Force Base, on completion of 4-year assignment

Major Joseph P. Donahue was transferred to MAAG, Bangkok, Thailand, on completion of 3-year tour

Mr. B. T. Honeycutt was transferred to Directorate of Maintenance-Engineering

Miss D. Viles was transferred to Directorate of Procurement and Production Engineering

Flt Lt A. Robinson, RCAF Exchange Officer, was reassigned to the Aircraft Control and Warning Branch for continued duty.

PART II.

ACTIVITIES

A. The activities of the Navigation and Air Traffic Control Aids Branch during the period covered by this history are listed below:

1. CANCELLATION OF FURTHER VOR PROCUREMENT. In view of the extension of operation of the low-frequency 4-course ranges, both civil and military, until approximately 1958, and the projected early implementation of the TACAN Program, it was determined that further procurement of VOR equipment for retrofit purposes could not be justified. In order to meet requirements for this equipment for certain essential first line aircraft, a decision was made that VOR would not be configured in the T-33 and C-45--this action permitted implementation of the present program within current assets. (UNCLASSIFIED)

2. EVALUATION OF GROUND NAVIGATIONAL AIDS. Air Proving Ground Command and Airways and Air Communications Service are conducting a joint operational evaluation of the major ground navigational aids operated by the USAF. They will formulate test procedures for conducting routine high-speed, high-altitude operational checks of such equipment in the future. (UNCLASSIFIED)

3. REDUCTION IN USAF RACON PROGRAM. Due to the availability of similar information for navigation and homing purposes from other systems, the early implementation of the TACAN Program, and the high cost of the FPN-13 radar beacon, it was determined that this facility would be utilized in the ZI for training purposes only, and in the overseas area at certain critical landfall and terminal stations utilized by Strategic Air Command and Military Air Transport Service. This decision permitted cancellation of the FY-54 procurement of 44 FPN-13's and the public works program associated with these 44 stations for a

total saving dollar-wise to the Air Force of approximately five and one-half million dollars. Commands were notified of this decision and the PC documents revised accordingly. Copy of the present program is attached as Appendix II. (CONFIDENTIAL - APPENDIX II IS SECRET)

4. CONVERSION TO THE NEW INTERNATIONAL DISTRESS AND CALLING FREQUENCY. The Departments of the Navy, Air Force, and Coast Guard and the Civil Aeronautics Administration determined that, effective as of 1 July, only the new international distress and call frequency 8364 KCS need be monitored. Following this decision representatives of these agencies met and determined the responsible agency for the monitoring of this frequency at the various locations throughout the world. Air Force commands were advised of this decision and concurred without exception. Copy of the agreed listing of the monitoring responsibilities is attached as Appendix I. (UNCLASSIFIED)

5. PLAN FOR ACTIVATION OF NEW GCA FACILITIES IN THE ZI. The plan developed during the latter part of calendar year 1953 to expedite activation of the new GCA facilities was implemented and progressed satisfactorily during the period. Ten new facilities were in place as of the end of January, and 11 more were activated by 1 June 1954. Success of this procedure stimulated AACS to recommend to overseas commands that a similar plan be developed in order to alleviate their difficulties in GCA activation. FEAF responded favorably and started development of a similar program. (UNCLASSIFIED)

6. STATUS OF RAPCON INSTALLATIONS. The status of USAF Radar Approach Control Centers (RAPCON) utilizing AN/CPN-18 Airport Surveillance Radar and AN/FPN-16 Precision Approach Radar follows:

The first joint CAA-USAF RAPCON Facility at MacDill Air Force Base is now operating. The McChord Air Force Base RAPCON has been activated as a fixed GCA facility pending activation as a joint CAA-USAF Radar Approach Control Center. The RAPCON Centers at Brize Norton, England, and Offutt Air Force Base, Nebraska, are in operation. Radar Approach Control Center equipment is being installed at Andrews AFB, Hamilton AFB, Tyndall AFB, Westover AFB, Tinker AFB, Wright-Patterson AFB, and Kindley AFB. The ultimate program will include 67 Radar Approach Control Centers. Fifteen RAPCON's are programmed for overseas areas (2 - Europe, 6 - Pacific, 3 - North Atlantic, 3 - Alaska, 1 - Caribbean). The remaining 52 RAPCON's are programmed for the ZI, with approximately 17 scheduled for joint CAA-USAF operation.

Production of RAPCON Consoles AN/FSA-4 was delayed when production at the tenth article was halted so that the console could be reengineered to accept commercial WE-102A key boxes. This reconfiguration was required because of the insistence of the telephone concern providing telephone circuits that circuits be terminated on company-owned equipment. (UNCLASSIFIED)

7. STATUS OF USAF AN/CPN-4 MOBILE GROUND CONTROLLED APPROACH (GCA) PROGRAM. Seventy-eight AN/CPN-4's have been delivered to the USAF. An additional 35 mobile GCA equipments are in procurement. These are designated AN/MPN-11B, and differ from the AN/CPN-4 in that the AN/MPN-11B has a solid body rather than a panel-type trailer. The following is a breakdown of the equipment assignment and status, by theater:

| Theater | Operational | Training | ATRC School | Depot | Test | Spec Proj | |
|---|---|---|---|---|---|---|---|
| ZI | 25 | 1 | 10 | | 1 | 7 | |
| Europe | 10 | 2 | | 5 | | | |
| Alaska | 1 | | | 2 | | | |
| NEAC | 5 | | | | | | |
| FEAF | 2 | | | | | | |
| Korea | 5 | | | | | | |
| | 48 | 3 | 10 | 9 | 1 | 7 | = 78 |

MPN-11B. There are two AN/MPN-11B's in operation and six on location in a training status. The remaining AN/MPN-11B's will be sent to operating locations as the equipments are produced. It is expected that all 35 AN/MPN-11B equipments will be produced by December 1954. (CONFIDENTIAL)

8. INSTRUMENT LOW APPROACH SYSTEM (ILAS) PROGRAM. The current ILAS program includes 25 permanent and 4 interim SCS-51 (World War II type), and 72 permanent MRN-7/MRN-8 (new procurement) ILAS facilities. The Air Materiel Command has been directed to expedite supply action for the SCS-51 equipments to provide as many ILAS operating locations as possible prior to the 1953-1954 winter season. It was determined that the first production items of the 72 MRN-7/MRN-8 new ILAS equipment would not be available until August 1954. The four interim SCS-51 facilities are to be replaced with the new MRN-7/MRN-8 equipment. (UNCLASSIFIED)

9. GROUND UHF PROGRAM GUIDANCE (OVERSEAS). Information on "Ground UHF Program Guidance (Overseas)" was sent to all major overseas commands in a letter from Hq USAF, dated 22 January 1954.

The installation of UHF ground equipment has progressed to the point where practically every USAF air traffic control facility and tactical organization is operating a limited number of UHF channels. The completion of full-scale, permanent UHF facilities as authorized by BPC/OPC and other authorization documents is dependent upon many factors including public works and remote cable projects, as well as the processing of C-E schemes. It was recognized that additional UHF channels must be installed on a temporary basis at certain locations prior to the completion of permanent facilities to meet the operational requirements imposed by the steadily increasing number of aircraft equipped with UHF.

To satisfy operational requirements for augmentation of air traffic control and tactical facilities pending the completion of permanent UHF facilities as authorized, all major overseas commands were requested to develop plans and initiate appropriate action for the installation of additional UHF channels on a temporary basis. Overseas commands were also advised of the availability of materiel and the status of plans which have a direct bearing upon the UHF program. (UNCLASSIFIED)

10. CAA USE OF MILITARY UHF PROGRAM FREQUENCIES. Military UHF program frequencies to be used by CAA were assigned on a permanent basis. A total of 57 UHF frequencies have been allocated this program for CAA communications with military aircraft. Within this complement the Air Force has 10 groups of compatible frequencies. A systematic method was

used to assign these frequencies which resulted in compatible families at all locations. In so doing, the Air Force adopted the rule of a minimum distance of 500 miles for co-channel assignments, 270-mile separation for adjacent channel assignments, and a 5-megacycle minimum frequency separation at a specific location. These 57 frequencies were allocated as follows:

3 were assigned specifically for GCA

1 for airport local control

1 for INSAC reporting below 17,200 feet

1 for ATRC centers reporting above 17,200 feet

The remaining frequencies are assigned to approach control, departure, and ATRC centers. (UNCLASSIFIED)

11. PILOT-TO-FORECASTER PLAN. Headquarters AACS was advised that its Pilot-to-Forecaster Plans 14-52 and 15-52 were approved by letter, dated 20 January 1954, from Hq USAF. Letters were also dispatched to all major commands advising them of the Pilot-to-Forecaster implementation schedule.

This headquarters has taken steps to include authorization for Pilot-to-Forecaster facilities in the next PC document. The required operating dates in this document will fall into three general categories, i.e.,

a. At those ZI locations where AACS does not maintain a remote transmitter and receiver site, two sets of UHF single channel equipment will be installed in the forecaster's office. No remote control unit is required at those locations; therefore their required operating date was entered in PC as 4th Quarter FY-1954.

b. All SAC, TAC, and ADC ZI bases were given first priority for implementation of UHF pilot-to-forecaster facilities. Thus, those not included under 1 above were entered in PC as 1st Quarter FY-1955 for ZI locations and 2d Quarter FY-1955 for overseas locations.

c. All locations which are to receive UHF pilot-to-forecaster facilities were listed in PC with a required operating date of 2d Quarter FY-1955 for ZI and 3d Quarter FY-1955 for overseas locations. (UNCLASSIFIED)

12. UHF PLAN FOR AIR TRAFFIC CONTROL. The "UHF Plan for Air Traffic Control" was approved. It is designed to establish a uniform USAF frequency plan which will provide the minimum amount of congestion on the ultrahigh frequencies assigned for air traffic control purposes.

Programs to implement the new frequency plan are well under way, and consist of installing UHF equipment at USAF and CAA ground installations and in USAF aircraft. A "Manual Control Box" is required to permit full utilization of the airborne equipment and AMC has been directed to retrofit USAF aircraft accordingly. (UNCLASSIFIED)

13. CAA RECORDERS. In conjunction with the provision of UHF radio equipment to the CAA to enable that organization to service military aircraft, it was determined that recording devices should also be provided. These recorders were to provide permanent record of aircraft-ground station transmissions, and were to be used in investigations of flight violations, accidents, etc. Their primary contribution was to be to the Flying Safety Program.

Since USN participated in the funding for UHF radios provided the CAA, its agreement to participate in funding for recorders was sought. Agreement in principle was received. DCS/O was then advised of total cost of program (approximately $2,000,000) and approval received during November 1953.

Ensuing discussions with USN revealed that while agreement in principle was initial naval position, it had since been determined that a naval requirement for the recording of CAA operated military UHF frequencies did not exist. Therefore, USN did not contemplate participating in funding for recorders to be provided CAA.

Study was then made to determine what cost would be involved in providing recorders for a certain select number of CAA operated UHF frequencies, the frequencies selected being determined as those being vital to control of aircraft. It was determined that type program would entail an expense of approximately $1,000,000. Since USAF would be required to bear this expense alone, the Inspector General was queried concerning his opinion as to the appropriateness of expending that amount of money, since primary benefit from the recorders will be accrued by the Flying Safety Program. (UNCLASSIFIED)

14. UHF PROGRAM. The first six months of 1954 saw a decided improvement in the UHF program.

During that period the aircraft UHF retrofit program progressed to the point where now approximately 2000 of 9852 aircraft scheduled for retrofitting have been UHF equipped.

The ground UHF facility program has also shown satisfactory progress. All of the 183 AACS operated control towers now have an UHF capability, as do all of the 127 GCA facilities. AACS is also operating 48 UHF/DF facilities, with the installation of additional sites progressing satisfactorily. Additionally, USN is now operating eleven and the CAA two UHF/DF stations. These stations also provide UHF/DF coverage to USAF aircraft.

Installation of UHF equipment in CAA towers, centers, and airways has continued according to schedule, and all key CAA operating locations have an UHF capability.

All active AC&W fixed and mobile sites now have an UHF capability and 56% of the authorized program has been completed. (SECRET)

LIST OF U. S. STATIONS
MAINTAINING A WATCH ON 8364 KC/S
AFTER 1 JULY 1954

| ACTIVITY | CALL | SERVICE |
|---|---|---|
| North Atlantic Ocean | | |
| Ramey AFB, Puerto Rico | AHD2 | Air Force |
| St. Croix, Virgin Islands | WFP | CAA |
| Trinidad, B.W.I. | NYS | Navy |
| Port Lyautey, Morocco | NHY | Navy |
| Pacific Ocean | | |
| Balboa, Canal Zone | NBA | Navy |
| Long Beach, California | NMQ | Coast Guard |
| San Francisco, California | NMC | Coast Guard |
| Seattle, Washington | NMW | Coast Guard |
| Ketchikan, Alaska | NMJ | Coast Guard |
| Anchorage, Alaska | KIS | CAA |
| Kodiak, Alaska | NHB | Navy |
| Adak, Aleutian Islands | NUD | Navy |
| Honolulu, T. H. | NMO | Coast Guard |
| Honolulu, T.H. | KBM | CAA |
| Johnson Island | AGH2 | Air Force |
| Midway Island | NQM | Navy |
| Kwajalein, Marshall Island | NDJ | Navy |
| Canton Island | KCCG | CAA |
| Wake Island | KEAD | CAA |
| Guam, Mariannas | NPN | Navy |
| Iwo Jima | AIH3 | Air Force |
| Okinawa Island | AIH2 | Air Force |

Appendix I

LIST OF U. S. STATIONS
MAINTAINING A WATCH ON 8364 KC/S
AFTER 1 JULY 1954

| ACTIVITY | CALL | SERVICE |
|---|---|---|
| North Atlantic Ocean | | |
| Keflavik, Iceland | AJM2 | Air Force |
| Thule, Greenland | XPE5 | Air Force |
| Sondrestromfjord, Greenland (BW-8) | XPJ8 | Air Force |
| Simiutak Island, Greenland (BW-3) | XPW7 | Air Force |
| Goose Bay AFB, Labrador | AKZ2 | Air Force |
| Ernest Harmon AFB, Newfoundland | AKK2 | Air Force |
| Argentia, Newfoundland | NWP | Navy |
| Boston, Massachusetts | NMF | Coast Guard |
| New York, N. Y. | NMY | Coast Guard |
| Atlantic City, New Jersey | NBB | Navy |
| Norfolk, Virginia | NMN | Coast Guard |
| Charleston, South Carolina | NAO | Navy |
| Jacksonville Beach, Florida | NMV | Coast Guard |
| Miami, Florida | NMA | Coast Guard |
| Key West, Florida | NAR | Navy |
| Pensacola, Florida | NAS | Navy |
| New Orleans, Louisiana | NMG | Coast Guard |
| Galveston, Texas | NOY | Coast Guard |
| Corpus Christi, Texas | NCP | Navy |
| Bermuda, B.W.I. | AFJ2 | Air Force |
| Guantanamo Bay, Cuba | NAW | Navy |
| San Juan, Puerto Rico | NMR | Coast Guard |

LIST OF U. S. STATIONS
MAINTAINING A WATCH ON 8364 KC/S
AFTER 1 JUNE 1954

| ACTIVITY | CALL | SERVICE |
|---|---|---|
| Pacific Ocean (Continued) | | |
| Manila (Sangley Point), P. I. | NPO | Navy |
| Yokosuka, Japan | NDT | Navy |

Note: Coast Guard shore radio stations listen on the 8 Mc/s Ship Radio Telegraph Calling Band - 8354-8374 kc/s of which 8364 kc/s is the center frequency.

SECRET

Encl 5

USAF RACON PROGRAM

ZONE OF INTERIOR (OPNL. INST)

1. Mather
2. James Connally
3. Perrin
4. McGuire
5. Edwards
6. Hill
7. Eglin *
8. Alexandria
9. New Castle
10. Suffolk
11. Youngstown
12. Larson
13. Griffiss
14. Tinker

SPECIAL REQUIREMENTS

1. *AFGC-OST (*Opnl Facility following OST)
2, 3, 4, 5. 4 ea ATRC - Training
6. ARDC - Test

OVERSEAS

1. Alconbury
2. Burtonwood
3. Lakenheath
4. Prestwick
5. Sculthorpe
6. Brize Norton
7. Goose Bay
8. Keflavik
9. BM-8
10. Thule
11. Kindley
12. Lajes
13. Nouasseur
14. Sidi Slimane
15. Adana
16. Fynbokion
17. Nicosia
18. Eielson
19. Elmendorf
20. Shemya
21. Anderson
22. Central
23. Chitose
24. Itazuke
25. Johnston Isl.
26. Kadena
27. Yokota
28. Niigata
29. Misawa
30. Sembach
31. Hahn
32. Cognac
33. Chenneviere
34. Chalons
35. Bitburg
36. Dreux
37. Barter Island
38. Galena
39. Umiat
40. Naknek
41. E. Harmon
42. Wheelus
43. Clark
44. Hickam
45. Santa Maria
46. Ramey
47. Albrook
48. Orly
49. Edmonton
50. Ft. Nelson
51. Whitehorse
51. )
52. )
53. ) Hq MATS for overseas deployment
54. )
55. )

Encl #1
Appendix II

SECRET

# HISTORY OF COMMUNICATIONS SYSTEMS DIVISION

1 January 1954 to 30 June 1954

COLONEL CHARLES W. GORDON
Chief
LT COL SAMUEL J. WHITSITT
Executive

COMMUNICATIONS SYSTEMS DIVISION
DIRECTORATE OF COMMUNICATIONS

COMMUNICATIONS SYSTEMS DIVISION
DIRECTORATE OF COMMUNICATIONS

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COMMUNICATIONS SYSTEMS DIVISION
DIRECTORATE OF COMMUNICATIONS

SECTION I

ORGANIZATION AND FUNCTIONS

The Communications Systems Division, Directorate of Communications, is divided into three branches: Operations Branch, Systems Engineering Branch, and Communications Security Branch.

The following changes in personnel occurred during the reporting period:

Lt Col Samuel J. Whitsitt transferred from the Operations Branch of the Communications Systems Division to assume duties as Executive of the Division, position vacated by Lt Col Joseph E. Hannah who was transferred PCS upon completion of his tour of duty this headquarters.

The functional responsibilities of the Communications Systems Division are as follows:

Determine and review the operational requirements for point-to-point communications systems, tactical and fixed radio and wire systems, and ground/air radio stations, in accordance with current programs and projects. Determines need for control and controls the issue of critical items of communications equipment. Exercises staff supervision over the planning and operation of communications systems. Formulates and prescribes communications doctrine, methods and operating procedures for Air Force communications. Exercises supervision and technical direction over the Air Force Security Service on all matters pertaining to cryptography and communications security. Exercises general supervision and policy direction over the Military Affiliate Radio System (MARS).

SECTION II

ACTIVITIES

During the period 15 January to 15 March 1954, the Division provided an officer to participate in a working group for the NATO Standing Group on the subject, Atlantic Ocean Air Traffic and Communications Requirements in an Emergency.

The actions of the foregoing working group resulted in submission to the NATO Standing Group a preliminary plan covering the problem. (CONFIDENTIAL)

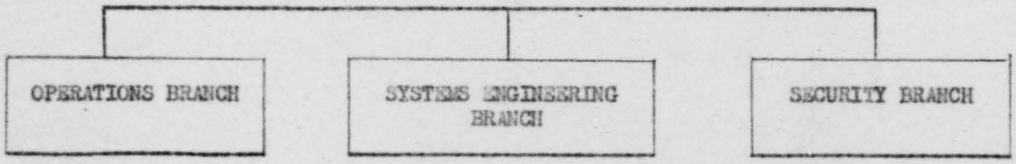
During the period 19 May to 21 June 1954, the Communications Systems Division provided a senior officer as the USAF member and Chairman of a JCEC/JCS Site Survey Board. This survey board was required to visit Hawaii to determine and recommend, from a combination of certain existing facilities, a suitable transmitter and receiving installation for the USAF. Detailed findings and recommendations for each location visited are included in final reports filed in the office of the Director of Communications and Electronics, JCS. (CONFIDENTIAL)

Organization at beginning of period - 1 January through 30 June 1954

COMMUNICATIONS SYSTEMS DIVISION

Colonel (Chief)..... 1
Lt Colonel (Executive)..... 1
GS-5 ..... 1
Airmen ..... 1

Colonel Charles W. Gordon
Lt Col Joseph E. Hannah
Miss Coletta L. Schulz
A/2C Donna J. Metzenberg

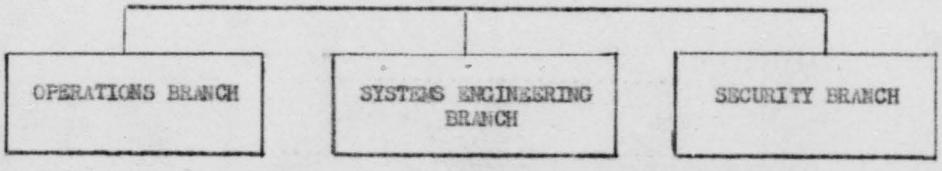


Organization at close of period - 1 January through 30 June 1954

COMMUNICATIONS SYSTEMS DIVISION

Colonel (Chief)..... 1
Lt Colonel (Executive) ..... 1
GS-5 ..... 1
Airmen ..... 1

Colonel Charles W. Gordon
Lt Col Samuel J. Whitsitt
Miss Coletta L. Schulz
A/2C Donna J. Metzenberg



# HISTORY OF SECURITY BRANCH

1 January 1954 to 30 June 1954

DON D. PERRY, Major USAF
FRANCIS A. BRANT, Major USAF

Communications Systems Division
Directorate of Communications

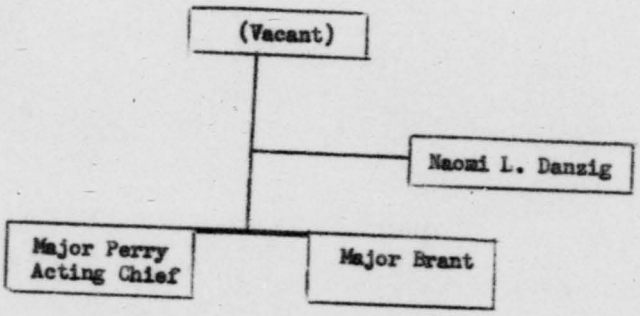
SECTION I

ORGANIZATION

The functions of the Security Branch for the period 1 January 1954 to 30 June 1954 were as follows:

Established and interpreted USAF communications security policy. Collaborated with the Director of Intelligence in operational control over the USAF Security Service. Monitored USAF communications security equipment development and application. Developed and maintained USAF position in joint and combined committees. Prepared and justified crypto budget.

The organization of the Security Branch on 30 June 1954 was as follows:



Transfer of Lt Colonel John M. Anderson, Jr. In June 1954, Lt Colonel J. M. Anderson, Jr. was transferred on a PCS basis to the USAF Security Service, San Antonio, Texas. (UNCLASSIFIED)

Short Tour Officer Participation. During the period of 14-28 June 1954, this Branch utilized the services of two short tour officers who have mobilization assignments with this office. The two officers concerned are Lt Colonel Carl Glaser and Major James Howe. Both have had considerable active duty in the communications security field and were able to contribute very useful service to the Branch during their short tour. (UNCLASSIFIED)

SECTION II

ACTIVITIES

Synchronous On-line Support of Joint Task Force Seven. During the recent Castle operations in the Pacific, certain key circuits in support of JTF 7 were equipped with synchronous cryptographic devices employed in a manner not heretofore utilized. One-time tapes (SIGTOT) were used in conjunction with TT-160/FG synchronous-mixers. To provide lengthier periods of continuous operation, eight (8) inch rolls of tapes were produced. This resulted in the necessity for far fewer sets than with the old style three (3) inch rolls. This method of operation provided proof-against-traffic analysis and for the purpose of supporting the Castle project was considered generally very satisfactory. The greatest disadvantage of this type operation for widespread use is the high tape consumption rate. (SECRET)

Conversion to On-line Operation. In September 1953, instructions were issued to AACS, NEAC, and USAF Security Service to convert all Air Force communications channels within the NEAC area to on-line operations. These instructions were later modified to provide for the conversion to proceed on a pilot circuit basis. The circuit selected for test conversion was the Andrews-Limestone-Goose Bay complex. Results of the operation of this pilot circuit were favorable when the security equipment was used on a point-to-point or torn tape basis. When tape relay operation was attempted, numerous technical and yet unresolved problems involving both the relay and security components were readily apparent. A conference was held on 6 May 1954, at Headquarters AACS, to evaluate the results of the test operation, and because of the technical problems encountered, it was decided to temporarily suspend the on-line conversion of the northeast area. A closer working agreement between the AACS and USAFSS engineering staffs in the solution of these problems was established. The difficulties are to be given top priority and the conversion to proceed as quickly as the engineering personnel agree that the equipments will meet the established operational requirements. (CONFIDENTIAL)

Department of Defense Directive (COMSEC). In April 1954, the three services received the new DOD Directive No. C-5200.5, which implemented within the Department of Defense operation policies covering the entire field of communications security. After careful study, it was determined that further implementation within the Air Force was not required as we had no regulations or policy material in conflict with the Directive. (UNCLASSIFIED)

Test Program for AFSAY 806. Two AFSAY 806's were released by National Security Agency to USAF Security Service on 15 March 1954. The Air Force wire tests of the equipment began 1 April 1954 between the two terminals, one at the Pentagon and the other at Headquarters SAC. To date, voice operation has proved successful. Telephoto transmission is satisfactory only when material is confined to black and white. Facsimile tests were initiated on 24 June and have to this point proven very satisfactory for black and white as well as for the transmission of weather data. Articulation tests have been accomplished but the results are not conclusive and indicate that more study of this phase should be undertaken. Teletype tests are scheduled for the month late July and August.

Four (4) voice extensions have been made within the Pentagon: one to Lt General Everest and one to Colonel Daly, both in Room 4E 1006; one subscriber set has been installed in Major General Ganey's office at BD912A; and one other terminal is available for use by interested personnel and can be found in the teleconference room BD 926. At the present time the unit in Room BD 926 only is available for the transmission of Top Secret material. To date, a policy has not yet been received concerning the use of the subscriber sets for the transmission of classified information.

(SECRET)

Operational Suitability Tests of AFSAM-7. These tests, under the technical supervision of USAF Security Service, were continued by Air Proving Ground, Strategic Air Command, and AACS during this period. The general ground operational tests by APG are nearing completion and interim progress reports indicate that with minor exceptions, the equipment is suitable for Air Force use. There being no apparent major discrepancies, USAF Security Service has started their distribution of this equipment to AC&W and Air Defense units in areas where no crypto equipment is presently in operation. The airborne and weather operational suitability tests were conducted during this period by SAC and AACS respectively; however, the results of these tests have not been received. (CONFIDENTIAL)

Cryptographic Planning and Budgeting Program. Preparation and presentation of the cryptologic portion of the Planning Communications and Electronics documents continued during this period. After approved circuit and engineering changes were made to existing documents, appropriate adjustments were made in the allocation and authorization of cryptologic equipment to insure a timely and well balanced USAF worldwide cryptographic program. A number of emergency changes for these documents were processed to provide cryptographic equipment for certain disaster and emergency communications plans. (SECRET)

Cryptologic Budget. Preparation and presentation of the FY 1955 communications security budget estimates for Project 236 continued during this period. The FY 1955 budget estimates were approved by the various review agencies. Monitoring continued on the progress of the FY 1954 buying program for Project 236. Required funds in this project were committed during this period. (CONFIDENTIAL)

Cryptographic Protection for Statistical Data Transmission. USAF Security Service is continuing the review of existing equipment and cryptographic principals to satisfy crypto requirements for this transmission system. NSA has been appraised of this requirement and a technical study is being made by their agency to determine the type of equipment required to secure this type transmission. (CONFIDENTIAL)

USAF Tape Production Facility. The installation of the USAF Python tape facility was completed and placed into operation by USAFSS at San Antonio, Texas. This facility remains under the technical control of NSA. This facility should provide the USAF with approximately one hundred thousand (100,000) one-time tapes per month in support of extensive Python operation within the Air Force. (CONFIDENTIAL)

# HISTORY OF THE COMMUNICATIONS SYSTEMS ENGINEERING BRANCH

1 January 1954 to 30 June 1954

CHIEF
COLONEL DAVID S. WOODS

Communications Systems Division
Directorate of Communications

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APPENDICES

SYSTEMS ENGINEERING BRANCH
COMMUNICATIONS SYSTEMS DIVISION

SECTION I

ORGANIZATION AND FUNCTIONS

Functional Description, Systems Engineering Branch. The Systems Engineering Branch of the Communications Systems Division was the agency within the Directorate of Communications, Headquarters United States Air Force responsible for programming and monitoring the procurement and design of equipment and the engineering and installation of all USAF Government owned fixed point-to-point, HF ground/air communications, and base wire facilities and systems. As of 1 March 1954, the Branch was organized into two sections: (1) Programming Section and (2) Engineering Section. The major functions and organization of the Branch are indicated in Appendix I. (UNCLASSIFIED)

Prior to March 1954, the Systems Engineering Branch was organized into three sections: (1) Project Control Section, (2) Budget and Planning Section, and (3) Technical Control Section. The major functions and organization during that period were as indicated in Appendix II. The transition from Air Force Regulation 100-17 to Air Force Regulation 100-46 programming procedures dictated the realignment of duties within the Branch. Demise of the Air Force Regulation 100-17 projects largely eliminated the need for the Projects Control Section. This section was abolished and its functions were absorbed by the other two sections. The realignment of duties was a gradual transition, accomplished as the new AFR 100-46 programming procedures were developed. (UNCLASSIFIED)

Past experience showed that the Air Staff and the commanders in the field looked to the Directorate of Communications as being primarily responsible for the Air Force communications mission, despite the fact that communications responsibilities are widely dispersed throughout the Air Staff. This tendency required the Systems Engineering Branch to more actively monitor all Air Staff actions affecting programs within the purview of the Systems Engineering Branch. The new functional description and organization of the Branch (Appendix I), placed emphasis on closer coordination with Air Staff agencies, such as Assistant Chief of Staff, Installations, Directorate of Maintenance Engineering, Directorate of Supply and Services, and Directorate of Requirements, which had major roles in the USAF communications program. (UNCLASSIFIED)

Changes in Key Staff Personnel. Changes in personnel assignments to the Systems Engineering Branch included the addition of Major David H. Blakley and Mr. Max A. Lofton. Both were assigned to the Programming Section. Major Blakley assumed duties as Chief of the Wire Sub-Section. Mr. Lofton was assigned as assistant to Major Blakley and assumed the duties formerly performed by Mr. John W. Vondercrone, who retired on 9 January 1954. (UNCLASSIFIED)

SECTION II

ACTIVITIES

French Microwave System. The United States Air Forces in Europe requested bulk shipment of the microwave equipment to implement the French Microwave System which ties into the Army Microwave System.

This headquarters questioned the ability of USAFE to install this system all at once and also recommended that the installation should be geared to the right of entry and construction. USAFE stated that completion of the construction could not be predicted, however, they wanted the equipment on hand for immediate installation when construction was completed. USAFE further stated that the 7th and 8th Radio Relay Squadrons were ready to make the installations. (UNCLASSIFIED)

The Director of Communications initiated action to the Director of Supply and Services to have the microwave equipment released for shipment by Air Materiel Command. It was recommended to USAFE that a liaison officer be sent to Rome Air Force Depot to monitor the shipment. Captain Walter Reed was placed on temporary duty to this headquarters and Rome Air Force Depot for this purpose. Practically all of the microwave equipment has been released and shipped for this system. (UNCLASSIFIED)

Sale of the Northeast Air Command Cable. Northeast Air Command proposed that the Newfoundland Long Lines Cable be sold to the Canadian National Telegraph Company and that USAF circuit requirements be leased from the Canadian National Telegraph Company. NEAC pointed out that the high cost of maintaining the cable and the problem of securing personnel trained on the commercial equipment involved was the basis for selling the cable. This proposal was placed under study by Headquarters USAF. Information was gathered for a staff study in order to arrive at an Air Staff decision. (UNCLASSIFIED)

Project Four Wheels. Rome Air Force Depot requested development-production contract bids of civilian concerns. The contract was awarded to the Craig Machine Company of Danvers, Massachusetts, which also is developing Project Two Wheels. The contract was made on an individual facility basis instead of a systems basis. (UNCLASSIFIED)

Project Two Wheels. Development of these communications-electronics facility trailers progressed as scheduled with the delivery of prototype forecasted for the second quarter FY 55. (UNCLASSIFIED)

USAF Communications-Electronics Program (PC). The PC document was reviewed to determine that both terminals of point-to-point facilities were programmed and in phase. Considerable difficulty was experienced world-wide in this respect. The problem was especially prevalent for intercommand facilities. A major change-over from Teletype Corporation to Kleinschmidt type teletype equipment necessitated a major revision to the PC. The change-over was accomplished in steps of: (1) writing new Standard Facility Equipment Lists (SFEL), (2) revising existing SFELs and (3) revising the PC to replace all fixed plant Teletype Corporation teletype equipment with the SFELs engineered using Kleinschmidt equipment. The ZI weather SFELs were engineered, using existing Teletype Corporation equipment. These sets were planned to continue in operation until an operational requirement dictated a change-over to Kleinschmidt equipment. (UNCLASSIFIED)

Conversion of Zone of Interior Weather Teletype Communication System to 100 Words per Minute, AACS Plan 5-52. The object of this plan was to augment the traffic handling capabilities of the USAF weather

teletype communications system, within the Continental United States, by the conversion of teletype equipment to provide 100 WPM operational capability and establishment of one centralized weather relay and monitor station. During this reporting period, the USAF ZI weather teletype network was equipped to operate at 60 WPM. Many portions of this system approached the saturation point of its message traffic handling ability. The increasing requirements, placed upon Airways and Air Communications (AACS) by Headquarters USAF Weather Service, for the transmission and reception of additional weather data dictated that conversion from 60 to 100 WPM had to be accomplished at the earliest possible date, if the system were to continue to function efficiently. Procurement and supply action was taken to obtain 469 modification kits for M-28 equipment and 360 kits for transmitter-distributors. A tentative change-over date to convert to 100 WPM was established for 30 June 1954. However, this date was not met due to the non-delivery of modification kits. Continued action was taken to determine deficiencies and expedite deliveries and conversion at an early date. (UNCLASSIFIED)

Civil Aeronautics Administration Weather Teletype Conversion from 60 to 75 Words per Minute. Headquarters USAF received information from the CAA in November of 1953 advising of the proposed dates for the change-over of the CAA weather circuits from 60 to 75 WPM. To provide the Air Force with the CAA weather service, steps were taken to provide 75 WPM modification kits for the Air Force teletype equipment terminating on CAA circuits. A total of 297 "receive only" and 1 "send/receive"

teletype machines were converted to meet the CAA scheduled change-over for 75 WPM operation. The change-over of the CAA weather circuits was completed in March 1954. (UNCLASSIFIED)

North Atlantic Frequency Propagation Ionospheric Scatter Circuit. A radio circuit using Frequency Propagation by Ionospheric Scatter (FPIS) was planned from Newfoundland to the United Kingdom. Terminals were planned at Goose Bay, Labrador, Sondrestromjord and Narsarssuak, Greenland, Iceland, and the United Kingdom. The code word "Landlady" (C) was first assigned to this project, later it was changed to "Fat Girl" (nickname). The target date for initial testing of the first element of this circuit was established as 31 December 1954. Due to the inability of the USAF to perform system engineering for this type circuit, supervisory assistance of the National Bureau of Standards was obtained. This circuit was designed to provide four channels of radioteletype with 95% reliability for a 24-hour basis. The primary purpose of the circuit was to support aircraft movement and furnish weather data. All sites were selected and action was taken to procure and ship equipment to the respective locations. In conjunction with this circuit, the National Bureau of Standards was also asked to investigate the possibility of operating a FPIS circuit from Newfoundland to Azores. Test equipment has been positioned at both locations for testing schedules. (CONFIDENTIAL)

Globecom. Construction criteria were submitted for stations at Albrook Air Force Base, Canal Zone; Andersen Air Force Base, Guam; Kindley Air Force Base, Bermuda; and Limestone Air Force Base, Maine.

The United States Corps of Engineers received bids of construction for the Limestone Air Force Base Globecom facilities. Site survey has been submitted for the Globecom station in Spain. Real estate planning for Ramey Air Force Base Globecom was received and plans were made to procure the land. The Globecom station at Hickam Air Force Base was held in abeyance pending joint action to procure sites for the Globecom receiver and transmitter facilities. Instructions were submitted to all major commands to consider the vulnerability factor for communication facilities. This action was considered necessary to preserve communications facilities due to hostile, enemy action. In nearly every case, the communications relay function of the Globecom system is located on air bases which are excellent targets. It was felt that movement of relay functions off base increased our capability to recuperate from damage to communications facilities. (CONFIDENTIAL)

Armed Forces Television. All television programming, engineering, and requests were taken over by the Television and Radio Section, Operations Branch, Internal and Information Division, Secretary of the Air Force. All information received in this Directorate was sent to that office. (UNCLASSIFIED)

FRC-27/VRC-19 Base Non-Tactical Communications Retrofit Program. Supply action was completed for all Zone of Interior bases for the initial retrofit program of the FRC-27/VRC-19 base non-tactical vehicular radio equipment. These sets were procured for installation in the fire-crash, air police and maintenance expeditor vehicles. Action was taken to ship the required number of sets to oversea locations. (UNCLASSIFIED)

Tactical Mobile Communications Equipment (Wagon Wheels). During May 1954, AMC was requested to ship to the 8th Communications Group, Tactical Air Command; AN/TCC-4 telegraph terminal sets, AN/TCC-7 telephone terminal sets, AN/TCC-8 repeaters, AN/TRC-35 radio terminals, AN/TRC-36 radio set repeaters, AN/TTC-7 telephone central, AN/FGC-20 teletypewriter, and AN/GCC-3 teletypewriters. These equipments were required by TAC to provide mobility for their communications units. The delivery of the MC-2 trailer vans and the above communications equipment were phased together in order that the communications equipment could be installed in the vans in an orderly manner. (UNCLASSIFIED)

Project Pole Vault. During mid 1953 it became apparent that the AC&W system for Labrador-Newfoundland (Project Pinetree) would have operational radars in 1954, but that adequate communications support could not be supplied prior to late 1956. Primary communications were to have been provided by a line-of-sight microwave chain of fifty stations connecting the various radar sites. The serious out-of-phase condition of radar and communications, high initial cost of the microwave (44 million), and costly and difficult support problems, associated with numerous isolated microwave relays presented a serious problem. For a number of years, various governmental and industrial scientists have investigated over-the-horizon propagation techniques in the VHF and UHF ranges. Late in 1953 there was good evidence that communications could be obtained for distance up to 300 miles by using frequencies around 400 mcs. Based on encouraging discussions with engineers and scientists from the National Bureau of Standards, the United States

Air Force Air Research and Development Command, Lincoln Laboratories and Bell Telephone Laboratories, a Staff Study was prepared by Colonel D. S. Woods, Chief of Systems Engineering Branch, on the previously mentioned communications Problem. Approved Staff Study, dated 5 December 1953, subject: "Communications Support for the Radar Extension Plan", provided a basis for implementing actions to install a tropospheric scatter communications system (over-the-horizon techniques) for Project Pinetree. A meeting was held at Ottawa, Canada, to formulate plans for installing this tropospheric scatter system. It was agreed that:

a. The tropospheric scatter system should be accomplished by the Bell Telephone Company of Canada, which also had the contract for installing the Radar Extension Plan. This could be accomplished by amending the contract between the USAF and Canadian Commercial Corporation (CCC), who in turn would amend the contract between CCC and Bell Telephone Company of Canada.

b. The target date of September 1955 for installation of the Goose Bay-Gander microwave should not be jeopardized; however, all possible action would be taken to minimize expenditures.

The nickname "Pole Vault" was assigned as short reference to the tropospheric scatter communications system to be installed in support of Project Pinetree. Procurement directive 54-EL-16 was issued to amend Contract AF30(635)677 with CCC to provide for installation of a 10 terminal tropospheric scatter relay system in Northeast Air Command. A meeting was held at Bell Telephone Laboratories, New York, 12 January

1954 with representatives from Canadian Department of Defense Production, Project Pinetree Office, Bell Telephone Company of Canada, Bell Telephone Laboratories, Lincoln Laboratories, and Headquarters USAF to determine the most expeditious course of action. This meeting united all the principals and provided the organization and procedures for accomplishing the task. Operational consideration and technical specifications were formulated in order to permit Canadian Bell Telephone Company to proceed rapidly on a most difficult task of employing a new communication technique. An optimistic installation target date of December 1954 was tentatively established with full knowledge of such factors as normal equipment and construction lead time, transportation difficulties, etc. By the end of March 1954, the various scatter terminals had been sited, equipment purchase orders or subcontracts let, and construction design was started. All construction designs were completed in May, and some construction contracts awarded. As of 30 June 1954, various phases of Project Pole Vault had progressed to the point where the following firm target dates could be established.

(1) Construction on all sites to be completed by 15 October 1954.

(2) Training of line-up, test, and maintenance people to be completed by 15 September 1954. This includes training of twenty USAF personnel assigned to NEAC.

(3) Equipment installation to start by September 1954, and be completed by November 1954.

(4) System line-up and test to be accomplished during December 1954. (CONFIDENTIAL)

Alaska Communications Study. For about a year, a situation similar to that in NEAC existed in the Alaskan AC&W system. Basically, a large number of radar stations were operating, handicapped by the lack of reliable communications, necessary to provide adequate air defense of Alaska. The Commander, Alaskan Air Command, requested in early 1953 that a communications survey be conducted by a competent systems engineering firm to recommend proper communications support to meet this deficiency. However, because of the interest of the United States Army and several other government agencies and the requirements for communications support for their activities, the problem came to the attention of the Secretary of Defense. The Secretary of Defense approved the conduct of a communications survey, subject to the restriction that the survey would be conducted primarily within the capability of the military departments, with technical assistance that could be provided by out-of-pocket expenses. The limited capability of the Department of Defense personnel and facilities to conduct such an undertaking, almost foredoomed this plan to failure. This situation resulted in a series of conferences among representatives of this headquarters, Office of the Secretary of Defense, and the American Telephone and Telegraph Company. As a result of these conferences, the restrictions of OSD were removed and the study was authorized, subject only to the restriction that the requirements for communications should be prepared by the agencies represented in the study group and reviewed by OSD prior to expenditure of any funds for technical services. A study group was established under the Commander-in-Chief, Alaskan Command, and comprised

of representatives from each agency having a communications requirement in the Alaskan AC&W area. The Alaska Communications requirements were reviewed by the Secretary of Defense during May 1954. In June a contract was signed with the American Telephone and Telegraph Company to determine a fundamental plan for providing these requirements. The American Telephone and Telegraph Company recommendations were to include cost estimates for materiel, labor, engineering, and buildings. The completion of the study by American Telephone and Telegraph Company was set for November 1954. (CONFIDENTIAL)

# APPENDIX I

FUNCTIONS
SYSTEMS ENGINEERING BRANCH
(1 March 1954 through 30 June 1954)

The functions of the Systems Engineering Branch, following reorganization were: (UNCLASSIFIED)

a. Programming for budgetary action and assisting in defense of all equipment required for these facilities and systems.

b. Assisting in budgeting for, and defense of, construction and installation in support of these facilities and systems.

c. Monitoring all staff and command actions outside the Branch which may affect equipping, construction, or installation of these facilities and systems, and recommending appropriate action when necessary.

d. Representing the Directorate of Communications (or Headquarters USAF) on all matters pertaining to the development and engineering of new equipments and techniques and to changes in design of existing equipment related to these facilities, and systems.

Engineering Section functions were to: (UNCLASSIFIED)

a. Provide Joint Communications-Electronics Committee (JCEC) representation on equipment working groups and panels. Keep informed of latest communications developments and reflect this knowledge in the Communications-Electronics Programs by:

(1) Technical guidance to the programming section as to the type and composition of standard C-E packages.

(2) Selection of major items of equipment to be included in the various SFELs associated with the Communications Systems Division portion of the program.

(3) Assisting other staff agencies in application of new techniques to USAF communications equipment and systems.

b. Represent Communications Systems Division on matters relating to SFELs. Review SFELs associated with packages programmed to insure major items selected will adequately meet Air Force communications requirements.

c. Monitor certain high priority communications projects to insure that all elements are coordinated and accomplished on a timely basis.

d. Represent the Communications Systems Division on technical matters pertinent to design of C-E structures, land acquisition, backup and standby criteria, and other subjects related to fixed communications facilities and systems.

e. Review engineering policies, practices and standards to insure that these are consistent with Air Force operational requirements.

Programming Section functions were to: (UNCLASSIFIED

a. Represent the Communications Systems Division on equipment programming and budgeting matters.

b. Translate approved requirements into the USAF C-E Communications Program (PC).

c. Insure that C-E programs conform to Air Force Programming Guidance (PG), Base Utilization (PD), special instructions, etc.

d. Adjust or rephase the Division portion of the PC in accordance with funding capability.

e. Provide guidance to insure that approved plans and requirements are consistent with funding and technical capability.

f. Provide budgeting and procurement computation guidance and assistance to Deputy Chief of Staff, Materiel, and Air Materiel Command (AMC). This will include budgeting and procurement information on items not included in the PC such as fabrication of special mobile C-E equipments, last minute program changes, etc.

g. Review budget and procurement computations made by AMC to insure proper support for the C-E program.

h. Assist in budget and procurement defense of those requirements generated by the Division portion of the C-E program.

i. Review SPELs to insure quantities of major items are consistent with programmed requirements.

j. Monitor new construction programming on major C-E projects such as Globecom, Alaskan AC&W Communications, etc., to insure that equipment and construction are in phase.

k. Assist Assistant Chief of Staff, Installations with C-E construction programming and provide budget defense as may be required to support the new construction program.

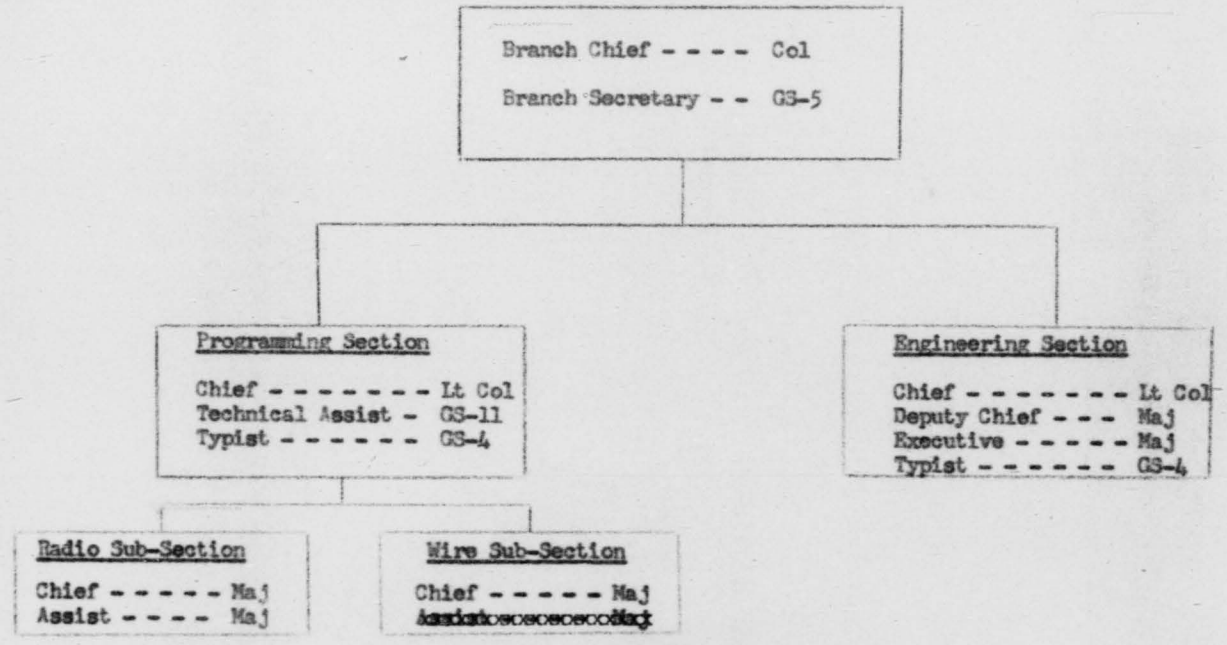
1. Provide allocation guidance to Directorate of Supply and Services on critically short C-E equipment.

NOTE: ORGANIZATIONAL AND PERSONNEL CHART - 1 MARCH THRU 30 JUNE - IS ATTACHED AS TAB "A".

(UNCLASSIFIED)

ORGANIZATIONAL AND PERSONNEL CHART

1 March 1954 through 30 June 1954




PERSONNEL ASSIGNED BRANCH

Col D. S. Woods
Lt Col A. A. Kurz
Lt Col K. H. Smith
Maj C. J. Welti
Maj F. L. Perra
Maj D. H. Blakley

Mrs. M. Cutright
Mrs. I. Bilby
Mrs. M. Fisher
Mr. M. A. Lofton
Maj W. J. Fry
Maj G. E. Townsend

(UNCLASSIFIED)

# APPENDIX II

FUNCTIONS
SYSTEMS ENGINEERING BRANCH
(1 January 1954 through 28 February 1954)

The Project Control Section functions were to: (UNCLASSIFIED)

a. Serve as the office of record for plant-in-place projects, projects submitted under Air Force Regulation 100-17 and Air Force Regulation 100-46, and facility acceptance reports.

b. Process requests for redistribution of Class IV facilities within and between commands.

c. Process emergency requirements (Paragraph 5b, AFR 100-46) and function as Directorate coordinating agency in connection with the resolution of these requirements.

d. Monitor working of AFR 100-46 to determine the degree of fulfillment of assigned responsibilities by all agencies subsequent to budgetary and procurement actions.

e. Assist Budget Planning Section in programming and procurement of project deficiencies, substitute and miscellaneous items.

f. Represent Branch on matters pertaining to automatic instruments of authorization.

g. Obtain periodic reports concerning stock balances of selected end items of communications equipment as well as expected delivery dates of like items on procurement. This information was considered essential to any reprogramming or redistribution action in connection with the satisfaction of emergency requirements.

h. Establish and maintain files, by base, identifying installed facilities, their utilization, and major items of equipment employed.

The Budget and Planning Section functions were to: (UNCLASSIFIED)

a. Compile the Communications Systems Division portion of the USAF communications-electronics plan.

b. Develop and prepare the Division portion of the communications-electronics operating program.

c. Prepare detailed budget justification for the communications-electronics systems plan.

d. Prepare list of equipment upon which procurement action is initiated.

e. Coordinate with the logistics section to assure that communications projects are in consonance with master plans.

The Technical Control Section functions were to: (UNCLASSIFIED)

a. Be responsible for staff action and monitoring of all special projects of a communications systems engineering nature. Examples of such a project are Globecom and Roar, etc.

b. Prepare, initiate, and follow through on recommendations for military characteristics of proposed communications-electronics systems and equipment therefor.

c. Establish and maintain liaison with commercial and other Governmental agencies sources to obtain information on communications systems' developments. Prepare and initiate dissemination of appropriate information on these developments to major commands and field agencies.

d. Represent Systems Engineering Branch at maneuvers, field exercises, and critiques, prepare and initiate action to develop new or improved communications systems as indicated. Monitor and secure coordination for all action initiated in this area. (An example of the need for this function is provided in the report, "Observations and Problems noted relative to Communications Activities During Exercise Longhorn.")

NOTE: ORGANIZATIONAL AND PERSONNEL CHART - 1 JANUARY 1954 thru 1 MARCH 1954 IS ATTACHED AS TAB "A".

(UNCLASSIFIED)

# ORGANIZATIONAL AND PERSONNEL CHART

1 January 1954 through 28 February 1954

Chief - - - - - - - - - - Col

Branch Secretary - - - GS-5

**Projects Control Section**

Chief - - - - - - - - Lt Col
Typist - - - - - - - GS-4

**Budget and Planning Section**

Chief - - - - - - - - - - - Lt Col
Deputy Chief - - - - - - - Maj
Assist - - - - - - - - - - Maj
Specialist - - - - - - - - GS-12

**Technical Control Section**

Chief - - - - - - - - - - Maj
Assist - - - - - - - - - Maj
Typist - - - - - - - - - GS-4

## PERSONNEL ASSIGNED BRANCH

Col D. S. Woods
Lt Col A. A. Kurz
Lt Col K. H. Smith
Maj C. J. Welti
Maj W. J. Fry
Maj G. E. Townsend
Mrs. M. Cutright
Mrs. I. Bilby
Mrs. M. Fisher
Mr. J. W. Vondercrone
Maj F. L. Perra

(UNCLASSIFIED)

# HISTORICAL REPORT

1 January - 30 June 1954

## OPERATIONS BRANCH

COMMUNICATIONS SYSTEMS DIVISION
DIRECTOR OF COMMUNICATIONS

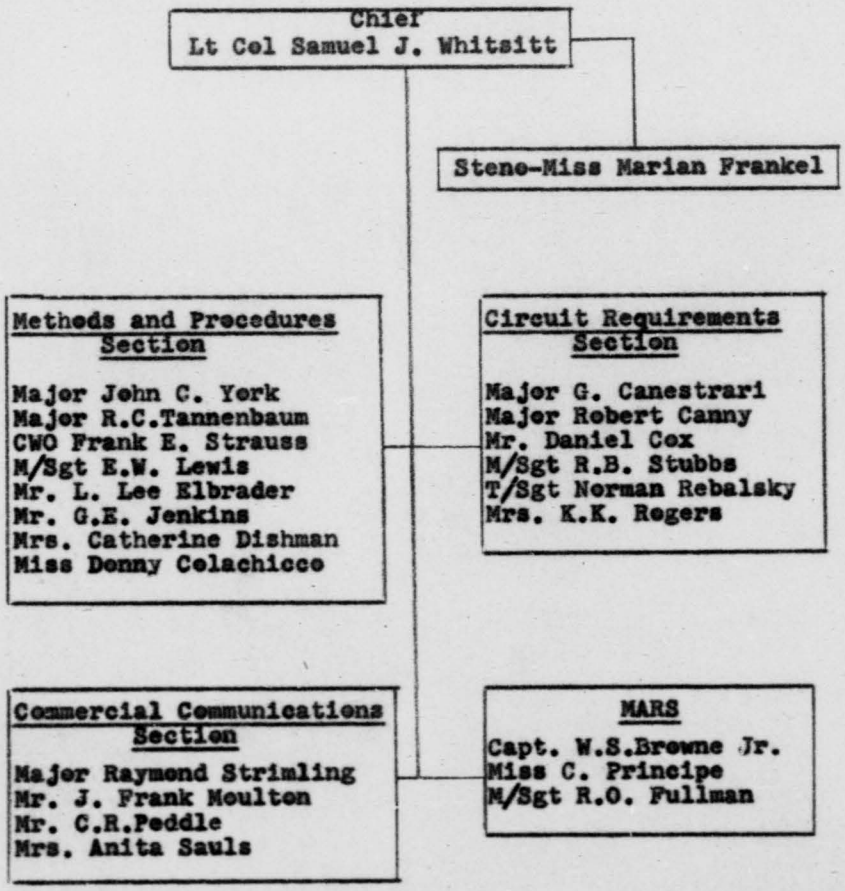
## INDEX

OPERATIONS BRANCH
COMMUNICATIONS SYSTEMS DIVISION
DIRECTOR OF COMMUNICATIONS

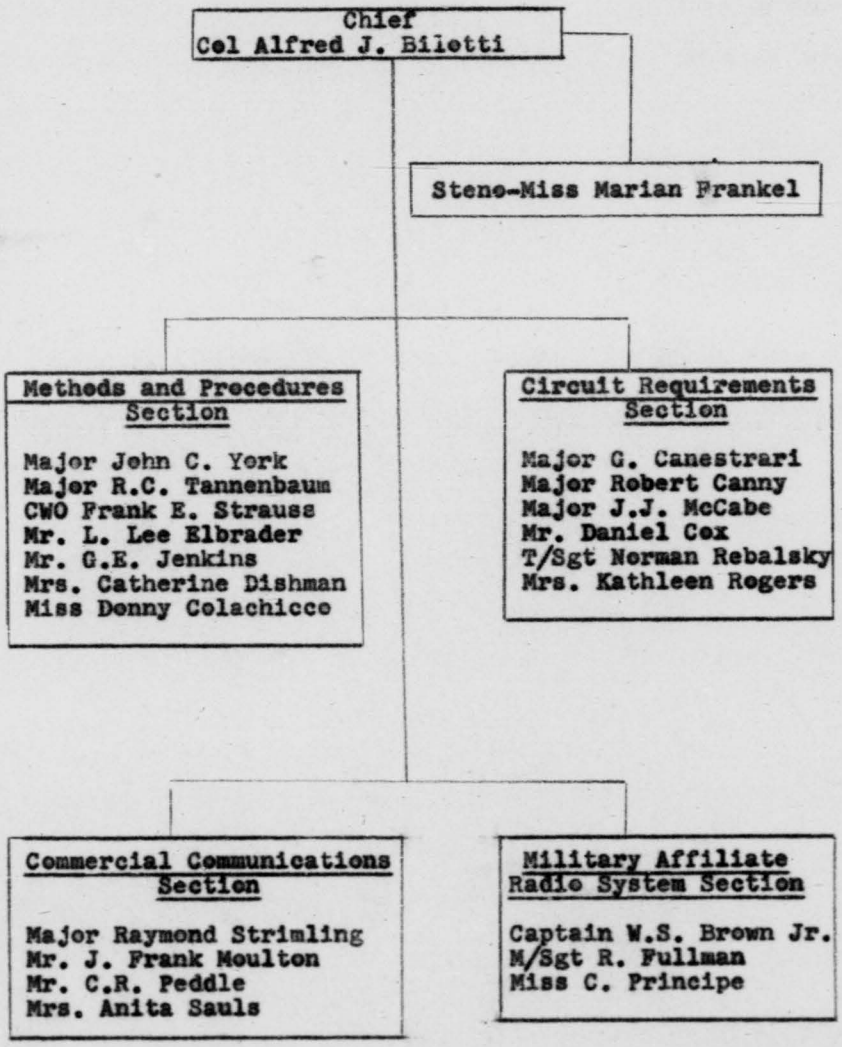
SECTION I - ORGANIZATION AND FUNCTIONS

At the beginning of the period, 1 January - 30 June 1954, the Operations Branch was organized as indicated in the chart below:

OPERATIONS BRANCH



At the end of the period, the Operations Branch was as indicated below:



Personnel changes during the period of this report were as follows:

Colonel A. J. Bilotti - Assigned from Joint Brazilian - U. S. Mission, Rio de Janeiro, Brazil, 21 May 54.

Lt Col S. J. Whitsitt - Transferred 1 February 1954 to Office of Chief of Communications Systems Division, Executive Office of Chief of Communications Systems Division.

Major J. J. McCabe Jr. - Assigned from the 1804th AACS Wing, 15 April 54 for duty in the Circuit Requirements Section.

M/Sgt R. B. Stubbs - Transferred on PCS, May 54 to USAFSS, Wiesbaden, Germany.

M/Sgt E. W. Lewis - Transferred on PCS, 1 March 54 to JUSMG, Spain.

T/Sgt Lester Livingston - Assigned 10 March 54 to Methods and Procedures Section; transferred 15 June 54 to National Security Agency.

## OPERATIONS BRANCH

Plans, authorizes, and supervises all USAF communications systems from an operational standpoint. Formulates and prescribes communications doctrine, methods, and operating procedures for Air Force communications and for Air Force participation in joint panels. Reviews operational requirements for new point-to-point and air/ground communication facilities and services.

## SECTION II - ACTIVITIES

**USAF Use of Existing Army Air/Ground Radio Teletype Facilities.** - The Department of the Army (Signal Corps) concurred in an Air Force request for the use of the existing air/ground radio teletype facilities of the Army and ACAN stations, Washington, Asmara, Heidelberg, San Francisco, Honolulu, Tokyo, Seattle and Panama. The arrangements for the use of the Army facilities would not exceed a two year period. Use conditions are: (1) that the Air Force provide tie-lines from the Air Force operating installation to the Army facility when required; (2) that the Army (Signal Corps) be advised in advance for all requirements; (3) that requirements for the facilities by Presidential aircraft will take precedence over any other commitment. (CONFIDENTIAL)

**Flight Service Communications Requirements.** - During the reporting period, action was initiated with AT&T with respect to modernization of the Flight Service Communications. Several meetings were held in discussion of the subject. AT&T have agreed to survey the Flight Service Communications with the following objectives. (1) Immediate improvements in the existing system. (2) An ultimate system capable of meeting future Air Force requirements. (UNCLASSIFIED)

**USAF Data Transmission System.** - In conjunction with AT&T,

a proposal was prepared for presentation to the Director of Statistical Services, DCS/C, Hq. USAF. The proposed outlined circuit plan interconnected subordinate commands and this headquarters, using IBM Transceivers. Statistical Services approved the proposal and was initiating action to include circuit costs in the budgetary program. IBM Transceiver Tests were conducted between Washington, and Pepperrell AFB, NEAC, using the existing single side band radio circuit between the locations. Further radio tests were scheduled for the IBM Transceivers using radio facilities between North Africa and Washington. (UNCLASSIFIED)

Consolidation of USAF Teletype Communications Networks. - For several years two separate teletype networks have been maintained to support the communications requirements of Flight Service and Military Air Transport Service throughout the Continental United States. Action accomplished during fiscal year 1954 has resulted in a consolidation of the two separate networks, and in addition made the consolidated facilities and operation thereof, a part of the USAF Communications Network. The latter network known as the AIRCOMNET is the overall common user system serving all Air Force activities. The Military Air Transport Private Line Teletype Network, has served as a separate means of communication between Air Transport activities within the Zone of Interior. The other separate network provided for

the exchange of aircraft movement information by teletype between the eight Flight Service centers serving respective areas within the United States. Flight Service centers maintain contact with Air Force bases and other air activities in each respective geographical area by use of interphone communication facilities. The consolidated network known as the Air Operational Network (AIROPNET) is an integrated part of the USAF Communications Network (AIRCOMNET). Integration of the aircraft movement facilities in the overall system eliminates certain duplication of personnel, equipment, and leased teletype circuits. The problem of meeting operational speed of service requirements of Flight Service and MATS may be met without maintenance of separate networks. Expansion of the Air Operational Network to ultimately provide faster and improved handling of aircraft movement messages on a world-wide basis is planned. (UNCLASSIFIED)

OPERATION CASTLE. - The USAF provided communications support during Operation Castle. Existing air circuits were utilized, including the facilities of the SACCOMNET. In addition to handling message traffic overflows, arrangements were made on a departmental level with the Signal Corps for an allocated channel between Hawaii and San Francisco. (CONFIDENTIAL)

Communications Circuits Required in Support of Current Strategic Air Command Emergency War Plans. - This head-

quarters approved and forwarded to the interested supporting commands, a detailed listing of the communications circuits required in support of current Strategic Air Command Emergency War Plans. (CONFIDENTIAL)

Field Representive Communications Requirements. - The communications requirements for the Field Representatives, Europe and the Far East were recapped and disseminated to the interested agencies. Primary and alternate channels of communications were indicated. (SECRET)

Air/Ground Communications Support to AWS Aerial Weather Reconnaissance Activities. - The requirements of the Air Weather Service for CW air/ground communications were approved. Locations were Yokota, Guam, Hickam, Eielson, Kindley and Burtonwood. The air/ground facilities are to be so located with the USAF HF voice air/ground stations. (UNCLASSIFIED)

Budgetary Data. - The Fiscal Year 1955 Congressional hearings before the Committees on Appropriations, House of Representatives and the United States Senate for Project 482. Commercial Communications Systems, were held in March and May respectively. Justification for the estimated requirement was based on third program change which placed the ultimate size of the Air Forces at 137 wings. The House Committee recommended a reduction, in Program 480, of $3,000,000. For purposes of reclama the office of the Director of Budget applied $1,500,000 of this recommended

reduction against Project 482. Congress completed action on the Defense Department FY 55 Budget on 25 June providing $30,822,000 for Project 482 or $1,807,000 less than the original estimates. This reduction was offset by authority to utilize Deutschemark credits without specific appropriations for these services. FY 1955 Financial Plan hearings were held during the first and second weeks of June resulting in a Budget Authorization of $31,325,000 for Project 482. (CONFIDENTIAL)

New AIRCOMNET Buildings. - Necessary funds for new AIRCOMNET Switching Center buildings at Robins, Wright-Patterson and Carswell were included in the FY 1955. Public works estimates submitted by the responsible commands. These funds furthered our plans for modernization of the ZI System by affording space for fully automatic equipment. Also, permitted our plans to go ahead with plans to consolidate centers on the West and East coasts, then, reducing the ZI centers to a total of five instead of seven. The OSD reviewed the requirements, however, recommended a 5000 sq ft reduction in floor space for each building. A reclama was forwarded to OSD thru Installations, and, in addition Mr Garner, Office of OSD, was briefed on our requirements who then intervened within OSD in our favor. As a result of the reclama and briefing OSD approved the buildings and floor space as originally submitted. (UNCLASSIFIED)

Telecommunications Engineering Report DD 280. - Commands were advised that pending a revision to the Telecommunications Engineering Report (JCEC), future recurring reports would be held in abeyance. Our proposal to JCEC has resulted in a joint working group to prepare recommended changes. It is expected that the new report will consist of ten parts with reporting periods left to the discretion of the services. Anticipated implementation date is 1 January 1955. GLOBECOMM stations under AACS control, are still providing traffic statistics to Hq. AACS. (UNCLASSIIED)

Strategic Air Command - Command Post Exercise. - During the period a SAC CPX was held involving the use of worldwide circuitry. This was the only CPX of its type held during the period. The overall average communications handling time for messages was 2 hours and 18 minutes. This average includes time of less than an hour in the ZI and within the UK as well as inter-area delays of up to eight hours between some locations. There was a 100% increase in the number of messages transmitted as compared to the last CPX of the same magnitude. (SECRET)

Telautograph Telescriber Service. - The office of flying safety, after investigation of certain accidents, ascertained that a means should be provided to transmit and retain a record of local base weather to the Control tower. Telautograph Telescriber service offered the best means of

doing this. This directorate notified the Director of Procurement and Production Engineering to advise AMC to negotiate a lease contract for the use of this equipment on a world-wide basis. Present indications are that the equipment be ready for distribution late in 1954. (UNCLASSIFIED)

Recommendation for Legislation. - This headquarters was informed of a report of sabotage from the Federal Bureau of Investigation, which involved the cutting of a telephone cable leading to a USAF base. Present law does not contain specific provisions to provide penalties for such malicious doings. This directorate submitted a recommendation for legislation to amend Section 1362 of Title 18, of the United States Code to provide penalties for malicious damage to private communications which are leased and operated by the United States Government. (CONFIDENTIAL)

Extended Toll Dialing at USAF Bases. - The present policy of the American Telephone and Telegraph Company to provide extended toll dialing throughout the country is causing some concern to the USAF because it permits Class "B" subscribers to make off-base calls which involve more than one message unit. The American Telephone and Telegraph Company and the Department of Defense are now studying this problem and are expected to produce a solution in the near future. Some solutions offered have been to provide equipment which will either deny or divert off-base calls which entail over one

message unit. (UNCLASSIFIED)

Leasing of Automatic Switching Equipment at Overseas Bases. - During the current bidding for purchase of automatic switching equipment on proposals solicited from the Western Union, American Telephone and Telegraph Company, and Automatic Electric Company, this directorate requested the Procurement Directorate to ascertain whether these companies would be interested in leasing automatic switching equipment at overseas bases. Only Western Union was agreeable to this proposal. The evaluation of this proposal is now in progress. (UNCLASSIFIED)

Leasing of Automatic Switching Equipment in the ZI. - Western Union has been asked to prepare figures in connection with the conversion of present Plan 51 to automatic operation. They have submitted such costs, and these costs are presently being evaluated. A prototype of the automatic switching equipment will be installed cost-free by Western Union at Andrews Air Force Base, early in 1955. (UNCLASSIFIED)

Army Anti-Aircraft Communication Requirements on USAF Bases. - In accordance with agreements with the U.S. Army, the USAF will provide and maintain the necessary wire facilities to meet Army Anti-Aircraft communications requirements on USAF bases, subject to the following:

a. On USAF bases having commercial-owned systems the USAF will absorb normal charges. All heavy charges will

be absorbed by the U.S. Army on a reimbursable basis.

b. On USAF bases having Government-owned systems, the USAF will provide the facilities, unless unusual charges are incurred. These unusual charges will be provided by the U.S. Army. (CONFIDENTIAL)

Transfer of Funds to the Civil Aeronautics Administration for Circuits in Alaska. - Funds in the amount of $13,500 have been transferred to the Civil Aeronautics Administration to meet a requirement of the Alaskan Air Command, for one teletype channel between Anchorage and Middleton Island and one voice circuit between Cordova and Middleton Island. (SECRET)

Long-Range Proving Ground Submarine Cable - Cape Canaveral, Florida to Mayaguez, Puerto Rico. - One full period voice circuit in the submarine cable, Cape Canaveral, Florida to Mayaguez, Puerto Rico will be converted to teletype operation. There will be sufficient channels to provide for the needs of AACS, SAC, and the Navy. By arrangement with the Navy a micro-wave system will be installed from Mayaguez to Ramey Air Force Base. The Navy will provide and install the equipment and the USAF will provide the maintenance personnel. (SECRET)

Assignment of Routing Indicators to USAF Airways Stations. AIRCOMNET routing indicators have been assigned to USAF Airways Stations at the following bases; Offutt AFB, Nebraska, MacDill AFB, Florida, Carswell AFB, Texas, Travis AFB, California, March AFB, California, and Great Falls AFB,

Montana. These assignments were predicated on a requirement for a more expeditious and simplified method of refiling aircraft messages into the AIRCOMNET. Employment of AIRCOMNET routing indicators on traffic originated by or destined to these stations eliminates all requirements for the intermediary base communications center to reprocess this traffic, thereby, accomplishing the desired results. (UNCLASSIFIED)

Designation of JFM/UFG As Air Force Transfer Point. - The USAF Major Relay Station (JFM), Chateauroux, France, ACAN Major Relay Station (UFG), Orleans, France, circuit termination has been designated as transfer point for all USAF traffic originated by tributaries of Major Relay Station JFM and destined to activities served by ACAN facilities. This circuit was activated because of the large volume of traffic exchanged between the Air Force and Army in France and the circuitous route required for this traffic to reach the addressees. The monthly recurring charges for this circuit are paid by USAREUR. (UNCLASSIFIED)

Revision of AFR 100-41. - Action is being taken to revise AFR 100-41, Authorized Users of Air Force Communications Facilities, to include all data required by the Air Force refile stations to successfully accomplish their mission in the refiling and subsequent reporting for reimbursement purposes all message traffic originated by other governmental agencies. This action is justified in view of the present

lack of firm instructions and the apparent misconceptions that prevail throughout the USAF Communications Network (AIRCOMNET) concerning the procedure to be followed. The revised regulation is currently being reviewed by the Directorate of Budget. (UNCLASSIFIED)

USAF Supplement To ACP 125(A). - USAF Air-Ground Radio Telephone Procedures, is in the process of being revised. This revision will incorporate applicable changes recommended by commands and those changes which were agreed upon in the ICAO Conference, 5th Session Communications Division. (UNCLASSIFIED)

Rescission of AFR'S. - The next edition of AFR 5-2 will reflect the rescission of AFR 100-11, Monitoring of Communications Instructions and AFR 100-15, Air Force Communications Net Control Stations (NCS). The information contained in AFR 100-11 is now included in USAF CEI 3010 and the information contained in AFR 102-15 is included in USAF CEI 2101. (UNCLASSIFIED)

Communications Instructions For Reporting Vital Intelligence (CIRVIS). - The United States Air Force Recently completed the task of reviewing, preparing, and coordinating a streamlined communications instruction for reporting vital intelligence sightings from aircraft (CIRVIS). These revised instructions, contained in JANAP 146(C), are an approved publication used by the United States military services for reporting vital intelligence sightings from

aircraft affecting the National Security of the United States. The communications instructions have been approved for and coordinated with United States civil aviation, Department of State, Central Intelligence Agency (CIA) and the Civil Aeronautics Administration (CAA) to be utilized by United States civil aircraft which may be engaged in flying national and international air routes. (UNCLASSIFIED)

Inasmuch as Canada and the United States are closely coordinating their air defense systems to operate as a single system for the defense of North America, Canada has been invited to participate in a combined plan for the reporting of vital intelligence sightings from aircraft. Negotiations are currently in progress through the structure of the Canadian-United States Joint Communications-Electronics Committee for development of a communications instruction to replace JANAP 146( ). These reporting procedures will materially assist in extending the early warning coverage for the air defense of the United States, its territories, and possessions. (CONFIDENTIAL)

The CIRVIS publication has been distributed to the three military Services, CAA civil communications stations, and to Aeronautical Radio, Inc., (ARINC) stations, who provide communications service to civil industry. (UNCLASSIFIED)

Reduction of Air/Ground Facilities Provided International Civil Aviation at Narsarssuak, Greenland. - Since implementation of the International Civil Aviation Organization

(ICAO) North Atlantic Aeronautical Mobile Frequency Plan, (the first phase of implementation which began 1 June 1953), the United States Air Force recently completed a survey of the radiotelegraph service provided at Narsarssuak. This survey indicated a negative traffic load on these radiotelegraph frequencies (2987), 5671.5, 8888 and 13284.5 kc/s) which is considered uneconomical to justify their retention.

Accordingly, the United States Air Force has taken such action through the Air Coordinating Committee to advise the United States Representative to the ICAO, Montreal, Canada to inform the ICAO that the United States proposes to discontinue the air/ground radiotelegraph services at Narsarssuak 1 September 1954.

The negative use of this service in the North Atlantic area can be attributed to a large degree to the increased use of radiotelephone by civil operators and military aircraft. (UNCLASSIFIED)

Air Force Participation on United States Delegation to ICAO Fifth Session of the Communications Division, Montreal, Canada, 9 March - 9 April 1954. - The Fifth Session of the COM Division convened at ICAO Headquarters, Montreal, Canada on 9 March 1954 to consider specific proposals submitted by contracting States of ICAO for changes, additions, and deletions to existent ICAO Standards and Recommended Practices pertaining to international Aeronautical communications and electronics aids to air navigation, presently contained in Annex 10 to the Chicago Convention, 1944.

Representatives from twenty-seven contracting states attended this meeting, including two observers from the U. S. S. R. (The U. S. S. R. is not a contracting State to the ICAO). The International Telecommunications Union (ITU) was represented by two observers, and the International Air Transport Association (IATA) was equally represented by sixteen observers.

It is considered that the United States Air Force benefited from the Fifth Session of the COM Division directly in the field of aeronautical mobile and aeronautical fixed telecommunications procedures, particularly as concerns radiotelephony and tape relay procedures. The Division accepted in large part a great number of methods and procedures now employed by the United States Air Force. The resultant action by the ICAO, when approved by the Council of ICAO, and promulgated in a new Edition of Annex 10 will provide a closer alignment of the communications procedures between military and civil aviation. This will permit the uninterrupted handling of communications over the civil and military communications systems. Although a complete agreement on these matters was not achieved, sufficient progress was made toward that objective to encourage continued efforts in that direction. The principles and standards and Recommended Practices which were adopted by the Fifth Session of the COM Division, as recommended to the Council by the Air Navigation Commission, will pro-

vide guidance for future Regional Air Navigation Meetings for the next three to four years. (UNCLASSIFIED)

Communications Services Provided The Queen's Aircraft By The United States Air Force. - The Department of State requested the Department of the Air Force to furnish certain types of communication and priority of Air Traffic Services into and out of Bermuda for Her Majesty's flight from Gander to Jamaica through Bermuda during the period 24 - 25 November 1954. The Department of the Air Force established and disseminated a communications plan to all agencies concerned in the fulfilment of its obligations for subject flight. Subsequent to completion of Her Majesty's flight, a letter of appreciation for the communications services and priority of Air Traffic Services furnished the Queen's aircraft at Bermuda was dispatched by the Queen to the Department of State, who in turn, forwarded the letter to the Department of the Air Force through the Secretaries of Defense and Air Force, respectively. (UNCLASSIFIED)

SAC EWP Requirement for Offutt - UK Voice Circuit. - Arrangements were made with the AT&T for provision of a voice circuit, Offutt - UK. Circuit is used during operational rotations of SAC units and proved of immeasurable aid during these movements. The voice circuit proved invaluable because;

a. Expeditious exchange of information pertaining to local weather, refueling, aircraft departures and arrivals, and aborts was effected.

b. Fewer telecons required which resulted in uninterrupted message flow and conferee manhour savings.

c. Reduced message volume since queries were made and answered on the spot.

This circuit was placed on "engineered military circuit" basis and can be ordered up as required by Offutt. (CONFIDENTIAL)

Operation Alert. - In accordance with Memorandum from Assistant Secretary of Defense, John E. Hannah, the Departments of the Army and Air Force were directed to support the communications requirements of the Federal Civil Defense Administration during a nation-wide and territorial civil defense exercise (Operation Alert) scheduled 14 and 15 June 1954. Equipments required for Civil Defense liaison at Hamilton, Lowry, Carswell, Moody and McGuire Air Force Bases were provided by Chief MARS. Commands and Air Force Bases involved were provided with necessary pre-planning data. The exercise was scheduled as a continuous 48-hour operation which necessitated, in several instances, the augmentation of operating personnel or the utilization of individual members located in the near vicinity to man and operate the necessary circuits. It was the responsibility of the Territorial Civil Defense

Director for Alaska to make the necessary local arrangements with Headquarters, Alaskan Air Command, concerning the method employed in filing traffic emanating from that area. The Army provided the primary means of communications for the FCDA Director, Territory of Hawaii, with the Air Force units in that area providing any additional facilities that may have been required. The FCDA, Director, Puerto Rico, filed traffic via the Civil Defense Center in San Juan over a MARS radio circuit installed between the Civil Defense Center and Ramey AF Base. Direct communications with civil defense authorities at liaison points was authorized. Hunter Air Force Base was employed as a relay station. All traffic generated flowed freely and rapidly between these remote places and the terminal station at Highpoint. All of the traffic handled by the MARS networks was funneled into Highpoint for relay via teletype to Lowpoint. A message expressing appreciation was received at the Pentagon by Chiefs MARS Army and Air Force from the Director of FCDA, Mr. Val Petersen. (UNCLASSIFIED)

Tactical Call Signs. - Tactical call signs were assigned on 8 February 1954 for MARS activities of the commands for utilization on radio-telephone, CW and radio-teletypewriter circuits during tests or under actual CONELRAD conditions. Overseas Commands, such as NEAC, FEAF, CAirC and AAC would not normally be notified of such operation

since tests are primarily confined to the Z.I. However, overseas MARS stations, or stations of any command hearing tactical call signs in use would immediately initiate use of their own tactical call sign and would at that time handle only priority traffic in the method prescribed by "MARS Operation During CONELRAD Alert" letter. The only notification that would be given would be the statement "CONELRAD Conditions Exist". This would signal the beginning of utilization; utilization of tactical call signs would continue until notification was given of an all-clear. (UNCLASSIFIED)

Competition Results - Armed Forces Day 1954. - Two hundred and five operators were mailed Certificates of Merit signed by the Honorable Charles E. Wilson, Secretary of Defense, in recognition of making perfect copy of the special Armed Forces Day message to radio amateurs. 375 individuals participated in this phase of the special activities conducted by the Army, Navy and Air Force. The message was transmitted at 25 wpm by military stations Air, NSS and WAR at 1900 EST on 15 May 1954. A paraphrase was transmitted at 0100 EST on the 16th. (UNCLASSIFIED)

Inspection Of Plant Account Supply Procedures Applicable To The MARS Program. - On 16 April 1954, the Chief MARS initiated action that the Inspector General disseminate via the TIG Brief requesting local inspection be made of the plant account procedures employed by each Air Force base where a

MARS station is located. These inspections are to be made a part of regularly scheduled inspections. Basis of inspection is to ascertain strict compliance with Volume II, Section 4, Paragraph 21 of AFM 67-1 for all AF centrally procured equipment furnished the Air Force MARS Program. The Air Force MARS Program uses two materiel supply procedures. One involving the use of jacket file responsility which should not be confused with the plant account requirements for centrally procured items or those items which have been locally procured with command funds for the purposes of augmenting the Base MARS station. Those items locally procured which would not ordinarily fall into expendable categories, would also be made a part of the plant account. (UNCLASSIFIED)

Newport-Bermuda Yacht Race. - Headquarters MARS station Air provided transmission facilities for Fox-Type broadcast of weather data to all yachts at sea who were participating in the Annual Newport-Bermuda Yacht Race. Weather data and forecasted course were prepared by Washington Weather Man, Louie Allen, and broadcasted twice daily via MARS (UNCLASSIFIED)

MARS-Radio-Teletype Stations. - The equipping and operational phase of AF Base MARS stations for radio-teletype (RTTY) operation was initiated during the past six months period. Twenty-four base MARS stations were equipped and it is expected 26 additional stations will be so equipped

in the near future. This mode of operation will allow an expeditious flow of traffic over the more heavily loaded trunk circuits between the theatres and commands. In addition, it will provide a medium over which traffic can be passed as an alternate route of regular communications channels. (UNCLASSIFIED)

Amateur Operation In Greenland. - Mr Cecil Harrison, Department of State, dispatched to the Assistant Secretary of Defense for International Affairs, a letter establishing an FCC amateur call sign block which has been allocated to the U.S. Defense area of Greenland. Initial licensing of personnel may be conducted in the theatre through the provisions of conditional class examinations given by mail. The registration of already licensed amateurs within the theatre is conducted through the Director of C&E, Headquarters NEAC, who would, in addition, be responsible for monitoring of the circuits and the cancellation of licenses, where warranted. (UNCLASSIFIED)

Logistic Support For Commercial Type MARS Equipment. - In an effort to expedite the planning for, and implementation of, logistic support to the Air Force MARS Program, letters were forwarded to all major air commands forcasting changes to AFR 102-3. The change is as follows: Maintenance parts and expendable supplies for logistic support of commercial type MARS equipment which are authorized for local purchase in accordance with AFR 70-16 will be procured with locally available Base M&O funds. Overseas commands will now fore-

cast and procure through the zonal depots or locally, a minimum of 6 months, maximum of 12, stock level for these maintenance components (tubes, resistors, transformers, etc.) not found in stock lists. Command quarterly financial plans will reflect these additional requirements in the PACAF area. Command requirements, where consolidated and procured through zonal depots, should be jointly reviewed by the Directorate of Communications and the Deputy for Materiel, or their representatives, in order to reflect a realistic level of requirements. ZI commands may procure for "on the shelf" spare items to a stock level not to exceed 120 days. (UNCLASSIFIED)

Commendation From Pan-American Union. - Headquarters MARS Station AIR was requested to endeavor to ascertain whereabouts and conditions of Major Manuel Chaves, son of SRa. Maria Conception de Chaves, Paraguayan delegate and chairwoman of the Inter-American Women's Commission. This request was forwarded in order to confirm a rumor that Major Chaves had been wounded in the fighting during the recent Paraguayian Revolution. Concurrent requests had been made to a number of press and governmental facilities in an effort to obtain the information as rapidly as possible. The following is an extract from a letter dated 17 May 1954 from Mr. Michael Level, Press and Information Officer of the Pan-American Union. "MARS had the answer for us -- and a favorable one, at that -- within forty-eight hours, and

up until last Saturday was the only agency which had produced an answer. This is but one more impressive proof of the efficiency of this unique agency and the staff which mans it. We have had occasion to call upon MARS for assistance in the past, and in every instance have met with a courtesy, willingness and efficiency which speaks eloquently of its organization, personnel and leadership, and which have contributed substantially to the good will which a number of the envoys to the OAS feel for the United States." (UNCLASSIFIED)

Solar Eclipse Project. - During the period of 20 June 1954 to 5 July 1954 ARDC sponsered the Solar Eclipse Expedition for the purpose of gaining geodetic data of value to the Air Force. The most critical problem in connection with the successful performance of the 1954 Eclipse Project was the accurate timing and recording of the various phases of the Eclipse. MARS, Army and Air Force, contributed the use of their world-wide frequency 14405 for use at Lajes Field for the purposes of retransmitting time and disturbance data from the National Bureau of Standards Radio Station WWV. (UNCLASSIFIED)