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**HISTORY OF THE 4TH WEATHER GROUP**

**Andrews Air Force Base, Washington 25, D. C.**

**1 July 1960 - 31 December 1960**

**Edited by**

**Captain Clayton L. Hogg**

**8 5 APR 1991**

**RCS: AU-05**

**Air Weather Service  
Military Air Transport Service  
United States Air Force**

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COMMANDER

DEP COMMANDER

INFO SERVICES

SECTION HQ SQ SECTION ADR OPERATIONS ADMIN SERVICES CONTROLLER TECH SERVICES PERSONNEL

OPERATIONS

MATERIAL

AMC Mission

ARDC Mission

MOBILE Support

MISC Mission

- Det 1, Wright-Patt AFB, Ohio
- Det 5, Tinker AFB, Okla
- Det 12, Olmsted AFB, Pa
- Det 13, Robins AFB, Ga
- Det 14, McClellan AFB, Cal
- Det 15, Griffiss AFB, N.Y.
- Det 17, Hill AFB, Utah

- Det 6, Hanscom Fld, Mass
- Det 8, Vernalis Research (ARDC) Calif
- Det 10, Eglin AFB, Fla
- Det 11, Patrick AFB, Fla
- Det 21, Edwards AFB, Cal
- Det 24, Holloman AFB, N.M.
- Det 23, Kirtland AFB, N.M.

- GIE WEARON (Mob) Tinker AFB, Okla
- O/L AFEMD, Inglewood, Cal
- O/L AFCCDD, Hanscom Fld, Mass
- O/L Hq AMC, WADD, Wright-Patt AFB, Ohio
- O/L 6594th Test Wing, Sunnyvale, Cal

- Det 2, Andrews AFB, Wash DC
- Det 3, Bolling AFB, Wash DC
- Det 4, Kansas City, Mo
- Det 16, Maxwell AFB, Ala
- Det 18, Lowry AFB, Colo
- Det 25, Wash DC
- Det 28, Suitland, Md

**INDEX**

This unclassified history covers the operation of the 4th Weather Group for the period 1 July 1949 through 31 December 1950. The first part of the history deals with a discussion of unusual problems and programs. Following this are the support programs for the Air Weather Service Council, Air Research and Development Council, the Air Force Headquarters, and a section on Miscellaneous Support Programs. The 4th Weather Squadron History is included in Appendix I.

As a part of this Unit's permanent historical record, this report is complete, accurate, and prepared in accordance with regulations.

*F. A. Bedke*  
**FRANK A. BEDKE**  
 Colonel, USAF  
 Commander

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CHAPTER I

INTRODUCTION

Mission:

The mission of the 4th Weather Group is to provide or arrange for:

- a. Meteorological service necessary to support the Air Research and Development Command, Air University, Air Materiel Command, Headquarters Command, USAF Intelligence Community, and special projects as directed by Commander, AHS.
- b. Mobile or fixed meteorological service in support of special operations of the USAF and USA and such other operations as directed by Commander, AHS.
- c. Fulfillment of validated requests of the U. S. Army in support of its research and development program.

Mission Change in ARDC Support

A revision of ARDC Regulation 80-7 governing the provision of environmental support within ARDC was proposed, coordinated and forwarded to the ARDC Administrative office for publication in November 1960. This regulation established the Staff Meteorologists with assistance in implementing their procedures under the regulation.

Organization Changes

There was one organization change worthy of note during the period of this report. The transfer of Det 19, 4th Weather Group, Dugway Proving Ground, Utah to the 16th Weather Squadron, 2nd Weather Group, had been approved by Hq USAF, effective 30FY61.



However, to make a more orderly transfer of responsibility, operational control of this detachment was transferred, with the approval of NMS, to the 4th Weather Group on 1 July 1960.

#### Personnel

During this reporting period there were five changes of key personnel with the Group headquarters and four changes in Group detachment commanders.<sup>1</sup> Authorized personnel totaled 1173 on 1 July 1960 and 1172 on 31 December 1960. Assigned personnel totaled 1160 on 1 July 1960 and 1131 on 31 December 1960.<sup>2</sup>

#### Manning in General

The unit manning was most favorable during the first half of the reporting period. The existent shortage was primarily in the weather observer career field. This shortage resulted from only 51% of the projected observer vacancies being filled on the IOPYU shortage report.

#### Manning in Field Maintenance Shop

The 4th Weather Group Field Maintenance Shop had a large influx of school graduate technicians during this period, bringing manning up to 100% strength. These men received intensive OJT to raise their skill level to the three and five levels, thus imposing a heavy training load on available skilled men. In spite of these problems, all required maintenance and equipment

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1. For a listing of Key Personnel and Changes, see Atch 1.
  2. For a break down of these figures, see Atch 2.

installations proceeded on schedule. These stations which in the past were completely without technicians received at least one school graduate, and the overall working picture was thus improved.

#### New Quality Control Actions Section Established

During the month of August 1960 a division devoted to the management of Quality Control Actions was established within the Group Personnel Office. This section handled all actions related to Officer Effectiveness Reports, Airman Performance Reports, On-Job-Training, Classification, Proficiency Pay, and Control Roster Actions.

On 1 July 1960 there were seven airmen on the 4th Weather Group Control Roster. From 1 July 1960 to 31 December 1960 there were 24 personnel added to the roster and 9 airmen removed. Under the Group Quality Control Program one airman was discharged under the provisions of AFR 39-16 while the remainder were rehabilitated.

#### Flight Status Selection Board's Recommendations

During September of 1960 the Group's Flight Status Selection Board convened and forwarded flying status recommendations on nine personnel to AAF. Two officers were removed from flying status by Headquarters USAF under the Central Evaluation Program.

#### Recruitment

There were eight airmen recruited under the Selective Re-enlistment Program covering the period 1 July 1960 through 31 December 1960.

Williams Award Recommendation

Det 6, 4th Weather Group, Hanscom Field, Massachusetts was recommended by this Group for the 1960 Williams Award. Management of the detachment was outstanding. The strong leadership had produced a highly organized and effective team which was dedicated to the accomplishment of its mission.

AMS Inspection of 4th Weather Group

During September and October AMS conducted a general inspection of Detachments 4, 5, 10, 11, 12, and 15 and the Headquarters of 4th Weather Group. The AMS summary sent to Hq ANDC stated the following:

"All Air Research and Development Command requirements receive top priority. The emphasis and professional approach directed toward environmental and test center support functions is particularly commendable. In addition, considerable effort is being placed on tailoring severe weather forecasts for test center and down range activities."

## CHAPTER II

## MANAGEMENT IMPROVEMENT PROGRAMS

Surface Observing Program

This Group continued to place special emphasis on the observing program. A new 4th Weather Group<sup>1</sup> regulation established new procedures for monitoring the accuracy of surface observations. The Group Records Checkers were responsible for checking five days of records each month for each detachment. Only those items not included by Data Control were checked by Group Checkers. Error rates for each detachment were based upon the number of in-station errors plus the errors noted by both this Group and Data Control.

High Performance in Group Observing

The Group performance index improved from 1.60 errors per hundred observations for the previous six months to 1.22 errors per hundred observations. This achievement occurred in the face of a turnover of approximately 35% in experienced personnel. Three detachments received a quarterly Certificate of Merit for having achieved an outstanding performance index of 0.5 or less, during the period 1 July through 30 September. The weaker stations, none of which averaged over 2.4 errors per hundred observations, continued to receive the attention of this headquarters to resolve their difficulties.

1. 4th Regulation 15-1, 29 Sep 60, See Atch 3.

### Terminal Forecast Verification Program

The discontinuance of the Air Weather Service-wide forecast verification system by the 6 September 1960 revision of AHS Reg 55-35, precipitated changes in the 4th Weather Group verification program. After a thorough study this Group decided to continue the basic features of the AHS system for several reasons: The copious data gathered by the AHS program provided a standard for comparing stations experiencing weather of equal variability; the AHS system was simple, it had been operating effectively for several years; it was applicable to the flight operations at all bases supported by the 4th Weather Group; and it was amenable to diagnostic analysis.

### Group's Addition to Verification Program

The 4th Weather Group added two features to the AHS program. The first feature classified all unsuccessful forecasts as being optimistic or pessimistic and the second indicated by a number code why the forecast was incorrect. This provided two tools for remedial activity and focused attention on the degree of cautious pessimism prevalent in most detachments.

As a second phase of the new verification program the 4th Weather Group intended to specifically "tailor" additional verification systems to the operations of each particular detachment.

Increased emphasis on forecast verification produced additional statistics revealing which categories of weather and which time periods were most troublesome.

Records for 1959-1960 showed that during each season twelve

stations were more successful than the average AMS station with comparable weather variability, and two stations were doing less well. The latter were only slightly below the AMS average whereas most of the former were well above the standard.

#### A Shortcoming of Group's Verification System

One of the shortcomings of the Group's verification system as a management tool was that it provided an inadequate measure of comparative skill among different detachments. However, certain detachments were so significantly better than others, that the Group was able to commend them and to obtain useful techniques from them for Group-wide application.

#### Verification System Brings Out Problem Areas

Because Det 2, Andrews AFB and Det 3, Bolling AFB were only a few miles apart, their forecasts were coordinated during this historical period. Yet the verification scores were below standard for Det 2 and excellent for Det 3. An investigation conducted by this Group 4-5 September 1960 revealed that part of this discrepancy was due to differences in air base flying minima, observed weather, and forecast periods.

Two consultant visits to Det 2 were made to combat such shortcomings as the pessimism shown in forecasts during "V-O weather" (unrestricted visibility and no cloud ceiling) and while summer thunderstorm activity was in the area. The other areas under attack were: reduction in the forecaster experience level; and hurrying due to pressure of work.

### Special Verification Program for Vernalis

In line with the second phase of the verification program, ("tailoring" of a verification scheme to the operation of each individual unit), the 4th Weather Group initiated a "tailored" system for Det 8, Vernalis, California, which supported USAF Cambridge Research Laboratories' balloon operations. This verification system used the distance between forecast and observed positions of a floating balloon as the measure of success of a trajectory forecast.

In order to assess trajectory forecast skill, Det 8 began to accumulate observed and predicted balloon position data in August. This was a slow process. The FCC-tracked balloons frequently went over the Pacific out of tracking range.

The purpose of collecting these verification data was to use them as a diagnostic tool for determining areas of weakness in forecasting, formulating plans for improvements, testing of new techniques, and determining trajectory forecast capability.

### Technical Leadership

This Group determined that one factor which had contributed to a loss of effective weather service was the lack of effective technical management on the part of supervisors. Part of this weakness in management was caused by the uncoordinated working relationship between the various functions--administrative and technical. To encourage stronger supervision in the 4th Weather Group detachments' technical performance, the Group Commander stated his stand on this subject in "Commander's Comments" in

Employment of Resources

This Group has recognized that many technical efforts have fallen by the wayside because, in some instances, the project officer was transferred and had left inadequate instructions, in other cases responsibility was not clearly defined, and in still others the time available was intermittent and previous directions had been forgotten or lost. Based upon these factors, the Group continued its study on a formal method of establishing programs, projects, and tasks directed toward better technical work-organization and use of available resources. The outcome of this effort has been the new program called "OUR Program" (Optimum Use of Resources).

A basic aid to the achievement of "OUR" program objectives was a form<sup>3</sup> similar to the Department of Defense Form 613 on which program objectives, history, plan of action, and achievements were indicated. Testing of the form continued with all major technical programs being recorded thereon. This form was an aid in a program directed toward better technical management. It designated significant problem areas, outlined steps to be taken to solve them, assigned responsibilities, and recorded significant achievements.

Through the use of this record, detachments were able to

2. "Commander's Comments," 4th Staff Digest, Oct 60. See Atch 4.  
3. 4th Form G-10 (Test), Dec 60. See Atch 5.



effect continuity on projects which could be worked on intermittently when interruptions were caused by personnel changes and higher priority work.

#### Product Improvement

To stimulate the imaginations of forecasters into improving their weather forecasts, the Group officially recognized the value of the subjective "rules of thumb." These are rules acquired through the experience of forecasters at a particular location which are all too frequently lost when the forecaster changes station. Yet this Group realized that these same rules can form a basis for more sophisticated objective forecasts.

During the month of June, the 4th Weather Group introduced the latest increment in its technical product improvement program: **ROKATE** (Rules of Thumb And Their Employment).<sup>4</sup> This program provided for origination, recording and testing forecasting rules which then would become a part of the detachment forecasting procedures. Detachments have shown marked enthusiasm for the increment, which promises much in the forecast improvement effort.

4. The **ROKATE** Program was introduced in the previous **4WG** History. (See History of 4th Weather Group 1 Jan 60 to 30 Jun 60, p. 6 and Attachment 6).

**CHAPTER III****4TH WEATHER GROUP INTEGRAL PROGRAMS****Upper Air Observations**

The average radiosonde height during this period was 99,800 feet. This compared very favorably with the average height of 96,600 feet for the previous six months.

**Computer Used at Holloman**

In addition to the Atlantic Missile Range Stations, Detachment 24 at Holloman AFB, New Mexico, also adopted the use of a computer for data reduction of upper air observations.

**Technical Information Services**

The Technical Information Services Program which was organized during the preceding period sought to:

1. Be more than a technical publication ordering service, but was oriented to technical problem solving and assistance to the field on special problems.
2. Develop a source bibliography for media having limited application or "one-time" use.
3. Provide an easily maintained cataloging, search and recovery system.
4. Recognize, evaluate, and conduct literature search in preparation of either bibliographies or technical reports on problems at group and detachment level.

The first step toward realization of the above objectives was to determine if present workload and manning were sufficient to handle the increased workload which the objectives would generate.

A manning study was made concurrently with a study of the Administration Branch of 4METS. The conclusion reached was that the Administration Branch's workload alone was absorbing all available manpower and that the objectives set for both sections could not be reached without an increase in personnel which would allow the two sections to function semi-independently.

One of the steps in meeting these objectives was to convert the unclassified and classified libraries to the universal decimal classification system (U.D.C.). This universal system, used in the majority of technical libraries, permitted quick search and recovery of publications. This conversion was started October 1958 with an original completion date of October 1959. However, lack of manpower had delayed the completion of this project resulting in a revised target date of October 1961.

Publications management posed other problems. Since field units prepare technical publications, the program called for:

1. Assuring that the limited technical manpower available at all levels could be better directed toward solving major problems and not be wasted on minor ones or investigations in technical areas where satisfactory solutions already existed.

2. Assuring publications issued by subordinate units met professional and USAF standards. Although a regulation had been published explaining procedures, these were not understood by detachments which continued to send copies of their publications for review after local reproduction had already been accomplished. Therefore, the Group established a more positive control system

which required that all technical reports originating within 4th Weather Group be published as numbered technical pamphlets.

Since detachment personnel have professional interests in special technical problems, the Group established a special subject file by detachment. Then, whenever a new material appeared in literature, it was extracted for field benefit. As a space age topic, for example, the Group prepared a series of articles on such timely subjects as meteorological satellites and atmospheric influences on electromagnetic propagation.

#### Weather Vision at Det 2

The new Motorola WeatherVision, leased from Radio Communications Service, Inc., became operational at our Det 2, Andrews AFB at the end of this period. The new system incorporated the following desirable features:

- a. The ability to record the audio portion,
- b. Four lenses, including telephoto and wide angle,
- c. A camera attachment for the CPS-9 scope, and
- d. A space conserving console.

Initially there were four receivers placed with the following agencies: 95th FIS Hot Room, 95th FIS Alert Room, AF Reserve Unit, and ABDC Hangar. Leasing this system was expected to represent a savings of approximately \$22,000 annually plus a savings of approximately \$7000 on the installation of the Motorola equipment rather than modifying the Sage System.

#### New Facsimile Schedule

The 4th Weather Group had made good use of the new National

Weather Facsimile Schedule. In particular, the surface analyses transmitted eight times daily coupled with the LASC enables Group forecasters to remain "on top" of weather conditions which were likely to affect operations. With the addition of the weather depiction chart, the radar summary chart and the upper air series, the duty forecaster was better equipped to provide three dimensional weather service to both aircraft and missile operations than had ever been possible before.

The 120 scan facsimile system helped to improve the overall chart quality and provided better charts for pilot self briefing displays. The pilot self briefing system, being dependant on more up-to-the-minute weather data, benefited greatly from the more frequent surface and weather depiction charts.

#### Radar Meteorology

The application of radar methods to forecasting had not kept pace with the progress in weather radar development. There were several fields offering opportunity for improvement.

Generally the intensity of an echo on a weather radar scope is a function of the intensity of the storm generating the echo. By applying some basic research done by the Severe Storm Section of Geophysics Research Directorate, Cambridge Research Laboratories, Major Abraham L. Reis and 2nd Lt David M. Taylor of Det 6, 4th Weather Group, L. G. Hancock Field, Bedford, Massachusetts, developed a graph which related radar gain settings to storm intensities. Preliminary application of this technique in central New England showed that this device was effective in detecting

and ultimately forecasting severe storms. As one example, the radar observation at 1700EDST on 21 June 1960 indicated a category 6 storm (severe according to the graph) near Utica, New York. A devastating tornado occurred at 1900 EDST at Schenectady, New York from this same storm.

#### Emphasis on Use of RAREPs in Detachments

The extension of USWB radar network over the US east of the Rocky Mountains along with their centralized control and analysis center at Kansas City, Missouri placed another valuable source of information at the disposal of the practicing forecaster. Professional analyses of this radar data were transmitted every three hours starting 15 Dec 1960. The Group distributed a letter<sup>1</sup> to its detachment forecasters to increase their knowledge of RAREPs and to prepare them for using the new product.

#### Radar "Angels"

Radar "angels" constitute one field in which ignorance is limiting application of radar information. Certain theories regarding these "angels" require substantiation, further development, or disproof based upon empirical evidence gathered in the field.

Two excellent examples were given to the Meteorological Radar Branch of GPO for their study and evaluation. One was a well documented case of the Det 16, Maxwell AFB, Alabama, CFS-9

1. LRP, Dir of Ops & Eng, WWS to All det's, O/L's and SWS, Subj: RAREP Analyses, 25 Nov 60. See Atch 6.

radar picking up an echo caused by, or at least accompanying, a surface wind gust. In the words of Dr. David Atlas, an acknowledged leader in radar meteorology, "There is insufficient evidence of this association (between a type of radar echo and a surface wind gust) in the literature."<sup>2</sup> Dissemination of this information among 4th Weather Group and possibly in the Bulletin of the American Meteorological Society was planned.

A second example of an echo was noticed at Det 3, Tinker AFB, Oklahoma. Scope pictures showed a pronounced line echo which accompanied a cold front which was devoid of clouds and precipitation.

Once echoes such as these have been properly evaluated and CPS-9 operators have been informed of their existence, it will be possible to accurately forecast the onset of hazardous winds, some of which can not be forecast by any other technique.

#### New FPS-68 Weather Radar to Replace APQ-13

AMS recently programmed for the FPS-68, a local-use, light-weight weather radar which has a range of 200 nautical miles. The main purpose for its development was to replace the obsolescent APQ-13. The new FPS-68 contained the advantages over the APQ-13 of having a greater range and an RHI scope for vertical presentation of clouds. Compared with the CPS-9 the cost of this new unit was relatively low.

Site surveys were made during this period for the new FPS-68

2. "Review of Report on Angel Echoes," 18 Nov 60, CREPA/Dr. Atlas to CROW, AFCCDD.

to be installed at the following 4th Weather Group detachments:  
Det 14, McClellan AFB, California; Det 17, Hill AFB, Utah; Det  
15, Griffiss AFB, New York; Det 12, Cinnatus AFB, Pennsylvania;  
and Det 23, Kirtland AFB, New Mexico.



**CHAPTER IV****AMS SUPPORT PROGRAMS****Transfer of MFSCs<sup>1</sup> to FAA<sup>2</sup>**

During August 1960 plans were completed for a transfer of all Military Flight Service Center clearance functions to the Federal Aviation Agency. 4th Weather Group detachments being affected by this change were Wright-Patterson AFB, Ohio; Glasted AFB, Pennsylvania; Maxwell AFB, Alabama; and Lowry AFB, Colorado.

Target dates for this transfer were 15 December 1960 for Wright-Patterson AFB and Lowry AFB; and 1 January 1961 for Glasted and Maxwell AFB. AMS was to retain responsibility for providing MFSC-type weather briefings. All weather personnel were to be relocated from the Flight Service Centers concerned within ninety days following transfer of the function, and new briefing positions with complete communications were to be established at another location on the same base. After a 90-day trial period under this arrangement, AMS was to determine whether it would become permanent or whether other arrangements would be made for handling MFSC-type briefings.

**Changes in Number of Terminals for TFF<sup>3</sup>**

At the close of this period the TFF was preparing terminal forecasts for 28 facilities. All but two of the forecasts were in the abbreviated clear text format. These two exceptions were

1. Military Flight Service Center
2. Federal Aviation Agency
3. Terminal Forecast Facility at Kansas City Forecast Center.

the recently resumed forecasts for Amarillo and Sheppard AFB's. Because both of these bases had SAC units, TFF prepared these two forecasts in the TAFOR Code for ease of relaying to overseas bases. Future plans call for the TFF to prepare a forecast for Minot AFB in the TAFOR form beginning 1 January 1961.

#### Rearrangement of TFM TIXZ Bulletin

At the request of several 4th Weather Group stations and 5th Weather Group, the TFF forecast bulletin was rearranged so that the order of stations was compatible with their order on the SAMS bulletins. This enabled separation of the forecasts in reasonable sized strips for posting on clip boards adjacent to the pertinent SAMS collective. Because less time was necessary to search for a particular TFF forecast, this change was of immediate benefit to forecasters. The rearrangement was also more suitable for adaptation to pilot-self-briefing.

#### Stabilization of Forecasters at TFF

Efforts were made at Det 4 to stabilize forecasters whose forecasting skill indicated an above average success at this type of work. AWE agreed that special consideration should be given to the naming of the detachment and that an objective of a four-year tour at Kansas City was reasonable and could be upheld. Consideration to a longer or shorter tour could be considered if a seven-months lead time was given. This included recommendations for curtailment of assignment at the three-year or recommending extension to a five-year period at the recommendation of the Detachment Commander.

### Postponement of SWS<sup>4</sup> and SLS<sup>5</sup> Consolidation

In late October word was received that the proposed consolidation of SWS and SLS on 1 January 1961 would not occur since USNS funds were not available for the consolidation. Since this word was received at a time of relative severe weather inactivity and also during scheduled departures of trained personnel, training of new personnel into this function became a serious problem.

### Atlantic Sferics Network Changes

During this period arrangements were completed to relocate the Sferics Slave Station from MacDill AFB, Florida to Patrick AFB, Florida. AAS established a target date for this move as 1 March 1962. Transfer of the four authorized USNS positions for sferics operation at MacDill to Patrick was requested during November by AAS.

### Sferics Equipment

Primary and spare AN/GSD-1B sferics equipment was received at Andrews AFB during this reporting period. One of the units was to be used as an operational check.

The new equipment was found to be very sensitive to local electrical interference. This had resulted in unsatisfactory reception which had not been corrected at the end of this period. Operation of the older AN/GSD-1A sferics equipment was being continued pending solution of operational problems with the new

4. Severe Weather Warning Facility of AAS located at Kansas City, Mo.
5. Severe Local Storms Unit of USNS, Kansas City, Mo.

equipment.

AN/QRD-1B sferics equipment intended for Kindley AFB and MacDill AFB had been shipped from ROMA. Target date for receipt of this new equipment at Kindley was December 1960. The sets had just arrived at the end of this reporting period but had not been installed.

#### Tornado Sferics Network

Plans for Tornado Sferics Network operation for the coming season were completed during this period. These plans called for slave stations at Sioux City Air Base, Iowa; Chanute AFB, Illinois; Greenville AFB, Mississippi; Sewart AFB, Tennessee; Tinker AFB, Oklahoma; and Goodland, Kansas. The master station was planned to remain at SMC, Kansas City.

A modified telephone communications arrangement for the Tornado Sferics Network was planned for the coming season. Switching arrangements were requested which would permit connection of any two or more stations with each other and with Kansas City. Under this arrangement when two stations were connected, Kansas City could also transmit or receive data from any other station in the network not involved at the time. This arrangement was expected to have a definite speedup in exchange of information between all units in the sferics network.

#### Tornado Alley

6th Weather Squadron terminated the deployment of six rawinscnds and six sferics teams during September. These teams

provided supplemental observations for the severe weather warning center's study and prediction of areas where tornadoes would occur.

#### Tornado Alley Plans for 1961

Project Officers spent many hours during October, November and December planning for and coordinating 1961 activities. 4th Weather Group submitted the plan for upper air and aerie observations to AMB during October. This plan provided for six mobile rawinsonde and six aerie teams to be located at strategic locations determined by the Severe Weather Warning Center at Kansas City, Missouri. Funding restrictions created problems in determining the number of rawinsonde stations that could be fielded. In addition, the withdrawal of a aerie set for further testing caused the reduction of one aerie team. A final position concerning implementation of a plan calling for six rawinsonde and five aerie teams. These teams were planned to be located as follows:

#### RAWINSONDE (15 Feb 1961 - 20 May 1961)

Reese AFB, Texas

Dyess AFB, Texas

Airco AFB, Oklahoma

Ft Smith, Arkansas

Ellington AFB, Arkansas

Mythesville AFB, Arkansas

**RAMENSCHE (21 May 1961 - 30 Sep 1961)**

Huron, South Dakota

Cedar Rapids, Iowa

Grand Forks AFB, N. D.

Goodland, Kansas

Scottsbluff, Neb.

South Bend, Ind.

**SPERICE (15 Feb 61 to 30 Sep 61)**

Greenville AFB, Miss.

Lowry AFB, Colo.

Chanute AFB, Ill.

Dyess AFB, Texas

Sioux City, Iowa

On 2 Dec 1960 the Working Committee of the National Coordinating Committee for Aviation Meteorology published the upper air annex as jointly agreed upon. This annex included the 4th Weather Group plan as revised because of the factors cited above.

**Pilot Self-Briefing Displays Begun**

Based upon the final report on Pilot Self-Briefing sent from 4th Weather Group to AAS in May 1960, AAS sent out a package distribution of PSB to all detachments presenting displays for weather planning and local observations. Detachments were directed to use the displays as a guide in preparation of their local display.

### Suitland Weather Editing Section

Two additional teletype circuits were installed at the Suitland Weather Editing Section during this period. These were circuit 21 X 11/12, send and receive, connecting NMF and High Wycombe, England, and circuit 111, receive only, from Tinker AFB, Oklahoma. Installation of these circuits greatly increased both the amount of overseas data being processed at Suitland and the output to foreign receivers.

On 9 Nov 60, the operating speed of all Federal Aviation Agency Service C circuits was increased to 100 words per minute. This further improved the data handling capability at NMF by some 30%.

The Suitland Weather Editing Section provided continuous support to the Numerical Weather Prediction Computer Unit at Offutt AFB, Nebraska, during this period. Through use of conditioning codes which were added to specific bulletins to assure that the computers would automatically accept this data into its system, NMF again demonstrated its ability to maintain pace with the worldwide weather communications system. The Weather Editing Section initiated a test of this procedure during September with all of the subsidiary relay centers participating. Except for a few minor changes in the operation, the program was generally very successful.

## CHAPTER V

## ARDC SUPPORT PROGRAMS

Staff Meteorologists

Experience within 4th Weather Group has continually shown that effective meteorological support requires a close functional relationship between the staff meteorologist and the commander's staff. This Group has believed that where individual R&D systems management was conducted--especially within ARDC Divisions--the impact of correct decisions from the natural environment standpoint has been far-reaching. During this period the Group continued to encourage its Staff Meteorologists to obtain positions within their supported organizations where they could play more active roles in their contribution to the planning decisions.

In the ARDC divisions--AFCCED, AFEND, and WAFD--the Staff Meteorologists completed functional realignment and demonstrated division recognition that their functions were those primarily of special staff offices rather than primarily liaison offices. Their actions resulted in publication by HQ<sup>1</sup> and CCED<sup>2</sup> of regulations which stated their responsibilities and in a change in organizational status at WAFD from liaison to division. Within Hq ARDC a similar action was effected--that of being included in the ARDC Organizational and Functional Chart Book of the Staff Meteorologist's functions.

1. AFEND 80-6, 20 Jun 1960
2. Ltr, CCED DCS Plans and Operations, Subj: "Staff Meteorological Services," dtd 6 Jun 60. See Atch 7.