A STUDY OF SELECTED UNITED STATES AIR FORCE MAGAZINES

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A STUDY OF SELECTED UNITED STATES

AIR FORCE MAGAZINES

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PREFACE

The author wishes to acknowledge his gratitude to Professor Clement E. Trout, head, department of technical journalism at Oklahoma Agricultural and Mechincal College, for greatly facilitating the accomplishment of this study and to Claron Burnett, assistant professor of journalism, for advice and suggestions.

To the editors of the various military periodicals described herein who gave freely of their time in completing questionnaires and answering correspondence I would like to express my deepest thanks for their friendly cooperation.

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CHAPTER I

PURPOSE OF THE STUDY

Military journalism is an omnipotent force to the millions of servicemen in the ranks of the armed services. Only a few of the largest corporations in the world can approach the media use that the armed services distribute to influence and educate their members. From a mimeographed letter to a color motion picture film, the armed services bombard the serviceman with information media. Periodicals, newspapers, news letters, news bulletins, information letters, pamphlets, and radio broadcasts are the media most commonly used.[1]

Paradoxically, however, much remains to be said about the field of military journalism by authoritative sources. Only isolated chapters of journalism textbooks mention the field of military journalism. Vagueness surrounds the implications of the statements made by the authors about the type of writing desired.[2]

The purpose of this study is to contribute some basic facts about one type of military journalism, publications of the United States Air Force. This study is devoted to those periodicals which in military terminology are called "internal organs." These periodicals are among the most important disseminators of current military policy, tactics,

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[1]Captain M. L. Marshall, A Survey of Military Periodicals, (unpublished M. A. thesis, School of Journalism, University of Missouri, 1953).

[2]A careful search of indices to periodicals and widely-used journalism references and text books in the Oklahoma Agricultural and Mechanical College Library by the writer failed to reveal more than a mere mention of any aspect of journalism as applied to the military.

technological innovations, and pertinent general information.[3]

Within the structure of this study such information is given as the writer has been able to compile and deduce from the figures, letters, and other data available.

The value of this study to students of journalism will probably be basically informative. Military periodicals, or internal organs, depict to the serviceman to which they are slanted the latest developments and techniques being introduced within their specialties;[4] they lay dowon doctrines that are ordinarily couched in the phraseology which is indigenous to the military; they describe policies and general information throughout the overall population of the services.[5]

Systematic research of the files of Oklahoma Agricultural and Mechanical College Library divulged only a smattering of relevant facts about military journalism and practically nothing upon the main topic of this study--internal organs, hereafter referred to as "magazines."[6] The documentary section of this library was screened for possible sources of information with practically no results. No theses in the library have dealt with a study of this sort. Thus the purpose of this study will be to give an account of some United States Air Force magazines, the authority behind them, and some aspects of their production.[7]

Job possibilities in the editing and publication of United States

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[3]Excerpts from undated letters of Air Training Command base commanders. Obtained from the editor of Air Training. See Appendix D.

[4]For example, see Combat Crew, 1V (April, 1954), which deals with Strategic Air Command missions. See Appendix B.

[5]Ibid.

[6]For example, see TIG Brief, V1, No. 6, March 24, 1954, See Appendix B.

[7]Appendix B, pages 60 to 61 contains all of the selected Air Force magazines in this study.

Air Force magazines are limited. Civil Service regulations govern the employment of civilians on these editorial staffs. Most job positions are occupied by service personnel.[8]

However, it should be stated that in times of national stress when journalistic students are drafted into the armed services they may correspond with the editors of the various military periodicals or base publications and often affect a transfer to the staff of one of them, thus servicing both their own best interest and the best interest of the government.[9]

The magazines selected for this study are representative of the United States Air Force.[10] The Air Force is divided into major Commands, which in turn are subdivided into numbered Air Forces, Wings, Groups, Squadrons, and Flights. (See Figure 1, page 7). Correspondence with the public information officers of these major Commands divulged that only two of them, Strategic Air Command and Air Training Command, published monthly publications. Combat Crew is the magazine of the Strategic Air Command. Air Training is the magazine of the Air Training Command. At Headquarters, United States Air Force the Office of the Inspector General is a special section. Three of the magazines of this study fall under the jurisdiction of this Office. The reasons for their selection will be explained in a later chapter. In Figure 1, it should be noted that the word NONE is used to denote no publication of a monthly magazine. Some Commands do publish brochures during the year but they will not be discussed in this study.

It is felt that a background of military periodicals would add

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[8]See the mastheads of all selected magazines in Appendix B.

[9]Ibid.

[10]Ibid.

valuable information to this study by virtue of the fact that the United States Air Force did not always enjoy the existence of magazines which now seem to adequately meet some of the needs of public relations and training.

As previously mentioned in this chapter, the Air Force is organized into major Commands; personnel, missions, and operations of each of these Commands is conducted differently. Primarily, the writer is interested in showing which Commands print a monthly magazine. It should be understood that below the level of major Commands, each Command is responsible for the operation of air bases where the actual performance of duties is carried out by service personnel. Media such as pamphlets, base newspapers, bulletins, announcements, radio broadcasts, and other disseminating methods are used on this air base level. To draw an organizational chart of all of the air bases under each major Command would involve a labyrinthine task and would be of small value to the study since the writer is only interested in the magazines published within each major Command and by the Office of the Inspector General.

At the time of the submission of this study, a request to the Field Liaison Office, Department of the Air Force, Washington, 25, D. C. had not been answered as to the number of air bases in the United States and overseas that published base newspapers. Base newspapers usually are published once every week and deal with local news on and around the base. The writer wanted to reveal that other types of media besides magazines are utilized to inform Air Force personnel.[11]

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[11]The writer was Editor of "The Gateway" newspaper, Rhein-Main Air Base, Frankfurt, Germany, publication for two years.

On each air base there are officers designated as Flying Safety officers, who are responsible for distributing the Flying Safety magazine, according to the questionnaire returned by the magazine's editor. He delivers them to the Operations section of each flying Squadron where they are made available to flying crews.

The other magazines reach their destination on the air bases through regular distributing channels such as the post office, mail orderlies, base transportation, and distribution points.

The entire magazine field was yet in its infancy in 1796, when the first military periodical appeared; in fact the first magazine ever published in the Colonies appeared in 1741.[12]

Since they were neither profitable from the publisher's point of view nor vital from the government's, it would hardly be expected that a military publication would flourish in those early days.

The World War I period increased the trend of military publications. But it was not until World War II, and especially the period following World War II and extending to the present, that military journalism really took hold and military periodicals began to be circulated widely and in large numbers. All of the selected magazines of this study originated during and immediately after World War II.

Spurred on by the demand of a complicated technology and by the pressure of an emergency and adequate government funds available, new periodicals representing dozens of new specialties were launched. This was the period from 1942 until 1945. Indeed, through the Army and Navy as well as the Air Force, the government by the latter date had become the

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[12] Frank Luther Mott, A History of American Magazines 1741-1850 (New York, 1930), D. Appleton and Company, p. 24.

largest publisher of military periodicals.[13]

Today's United States Air Force personnel are treated to magazines that compare favorably in appearance with general circulation and company or industrial magazines. Modern techniques or layout, composition, type faces, illustration, and all of the "tricks" of the journalism trade are evident in the end products. For an example, the reader is referred to pages 8 and 9 in Flying Safety, Appendix B.

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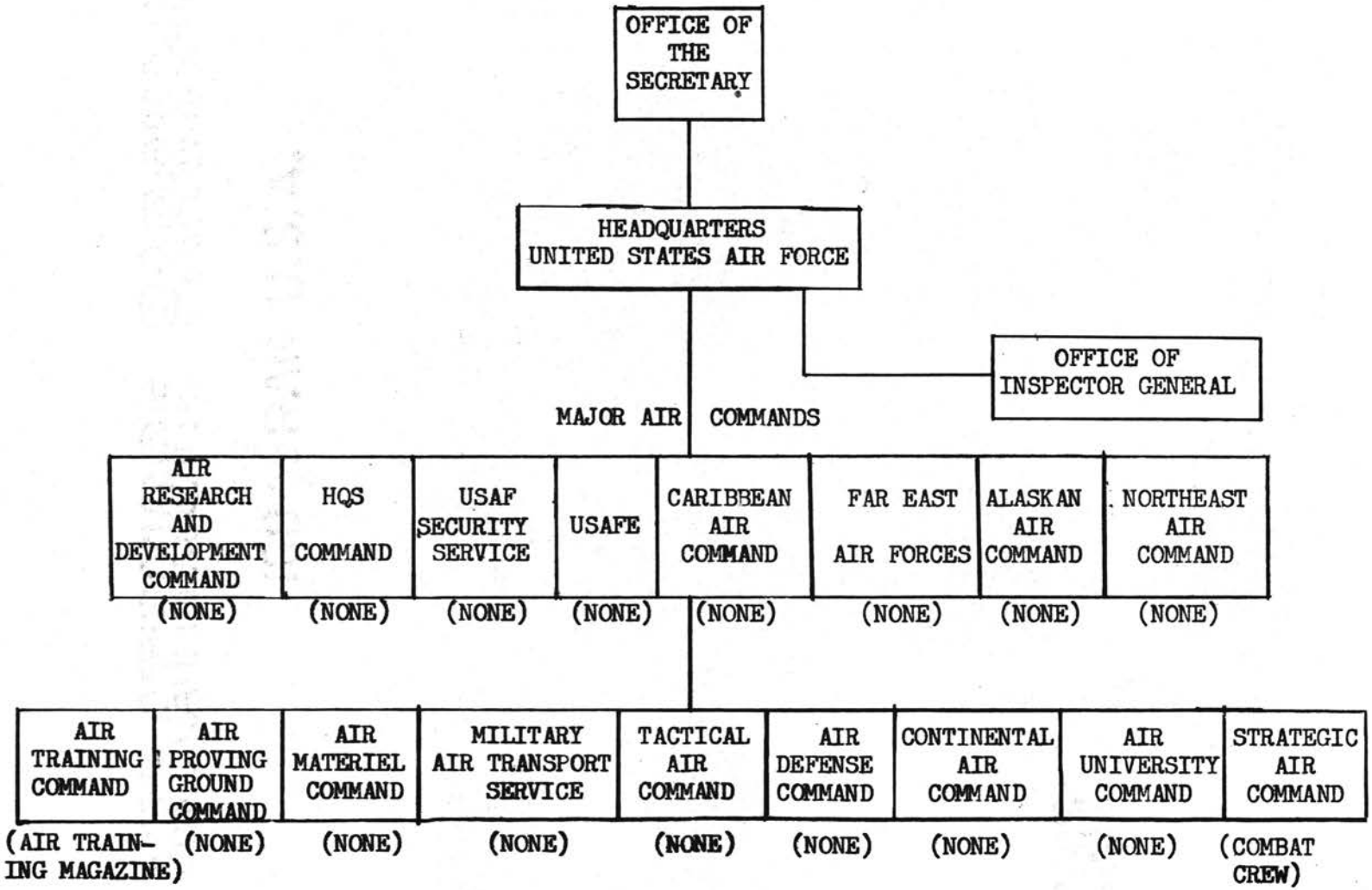
[13]Captain M. L. Marshall, A Survey of Military Periodicals, (unpublished M. A. thesis, School of Journalism, University of Missouri, 1953).

ORGANIZATION OF THE UNITED STATES AIR FORCE



CHAPTER II

SELECTION OF THE PUBLICATIONS

Magazines of the United States Air Force have a sound reputation and an avid reading audience.[1] However, funds for the printing of such publications must be based upon the needs of the major Commands within the Air Force.[2] Not all of the major Commands publish magazines, as was explained in Chapter I. It should be clearly understood that this study deals only with major Command monthly magazines. However, as the organizational chart in Chapter I reflects, the Office of the Inspector General, United States Air Force, disseminates to Air Force personnel, three of the most widely-read magazines in the Air Force. A closer look at Figure 1, page 7, discloses that several of the Commands are located overseas. Still other Commands deal with the highest level of security of the United States. It should be pointed out that the three magazines published by the Office of the Inspector General, Flying Safety, Aircraft Accident and Maintenance Review, and TIG Brief, along with Combat Crew and Air Training, are the only regular monthly magazines of the Air Force. For this reason they were selected for this study. Some Commands do publish brochures and other special publications but they would not normally be classified as magazines.

To further clarify the basis for selection, a typical justification

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[1]Excerpts from undated letters of Air Training Command base commanders. Obtained from the editor of Air Training. See Appendix C.

[2]See section 3, of justification letter, Headquarters, Air Training Command, Scott Air Force Base, Illinois, December 15, 1953, at the close of this chapter.

request, whereby a major Command substantiates its desire to publish a magazine and requests appropriate funds, is presented at the close of this chapter. This sample justification is for Air Training and presents information on number of copies printed, cost of printing, purpose and use made of the magazine, printing specifications and distribution. Information presented in the justification request is in accordance with Air Force Regulations.[3]

Before presenting the more detailed information of Chapter III, a brief description and discussion of purpose of the five selected magazines will be given here.

Flying Safety

Through the medium of Flying Safety, the Air Force disseminates information relevant to safety to flying crews. Safety, especially safety in the air, is the most challenging problem to a pilot. The writer is a rated pilot in the United States Air Force and is daily acquainted with the policies and procedures that confront a flying officer. As skilled as pilots and crew members are, the factor of danger is felt and realized at all times; with each flight the experience of pilots and crews is building up and as this experience builds up, safety in the air is making its indelible mark. Flying Safety provides a "needed tonic and refresher to these individuals and crews."[4] Frequent safety campaigns throughout the Air Force impress upon each member the vast amount of money, material, and manpower that is lost to the defense establishment each year as a

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[3]Air Force Regulation, AFR 5-37, April 6, 1953.

[4]This is a general impression gained by the writer from talking with pilots and crew menbers on air bases in the United States.

result of accidents.[5]

Flying Safety is published by the Inspector General of the Air Force. The Flying Safety staff has access to the findings or special investigations which deal with the cause of aircraft accidents. Containing such data, and distributed to all air crews in the Air Force, Flying Safety is in a position to warn flying personnel as to the causes of previous accidents and thus help to cut down the number of potential accidents of a similar nature that might otherwise occur. The editor of Flying Safety comments as follows:

> Our overall effectiveness is reflected primarily in the overall reduced accident rate in the United States Air Force, which in recent years has shown a marked downward trend. For example, our publications received credit for saving five F-86 fighter aircraft from major damage or destruction during the past 18 months. This was due to an article and follow-up material on how to land an F-86 safely with a cocked nosewheel. We have received considerable correspondence along these lines, indicating that crew members were helped materially or totally in preventing an accident through Flying Safety magazine articles.[6]

Since the ratio of distribution of this magazine is one-to-ten in the Air Force, that is, one magazine for each ten flying personnel, it might be concluded that better "coverage" could be obtained if the budget permitted printing more copies.

Aircraft Accident and Maintenance Review

The mission of the Aircraft Accident and Maintenance Review is to assist Air Force maintenance personnel in understanding the primary causes of aircraft accidents and the means by which maintenance people can prevent recurrence of such accidents. It keeps readers abreast of the

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[5]"Well Done," Flying Safety, X (January, 1954), p. 9.

[6]From a letter by Captain John H. Moore, Managing Editor, Flying Safety, January 21, 1954.

"current maintenance procedures in the United States Air Force and the latest technical development in the industry."[7]

The "one-two punch" of the United States Air Force magazines is Flying Safety for flying crews and Aircraft Accident and Maintenance Review for maintenance crews. In fact these magazines might be regarded as sister publications since their purposes are quite similar and since staff members of both magazines are assigned to the same air base. Both are published by the authority of the Inspector General of the United States Air Force.

Through the use of articles that appear in monthly issue of this magazine, the preventing of one major aircraft accident would more than pay for the entire yearly budget of the publication, including cost of printing, salaries, and other editorial costs.[8]

The entire make-up of the Aircraft Accident and Maintenance Review contrasts sharply with Flying Safety. The slant of the articles, the type of printing, and the story content is noticeably written in more technical language.[9]

This magazine was started as a mimeographed pamphlet published weekly in 1946 and gradually evolved into its present format.[10] It even reaches into plants of manufacturer's of airframes, engines, and accessory parts for United States Air Force aircraft. However, its main purpose, as stated, is to disseminate information to maintenance personnel, commanders, and engineering officers.

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[7]From a letter by Major Joseph P. Tracy, Acting Chief, Safety Education Division, Office of the Inspector General, March 19, 1954.

[8]Ibid

[9]"Dangerous Selenium Fumes," Aircraft Accident and Maintenance Review, IX (January, 1954) p. 13 which contains such terms as selinium rectifiers, etc.

[10]From a letter by Major Joseph P. Tracy, Acting Chief, Safety Education Division, March 19, 1954.

TIG Brief

Efficiency is sought at all levels of command in the United States Air Force.[11] TIG Brief is designed to keep commanders, Inspector Generals, and staff officers abreast of current directives, and informed of common operational deficiencies and irregularities. It deals with all subjects of Air Force operation. Many items published point out general deficiencies found in Air Force equipment and maintenance which present hazards to personnel and cause loss of damage of valuable equipment.[12] Administrative and operational irregularities noted in Air Force activities are analyzed and disseminated in the TIG Brief for corrective or preventive action. One commander's comment is of particular interest. "TIG Brief contains more up to date, valuable, and absolutely necessary information covering all the field in which Ground Safety is concerned--DO NOT DISCONTINUE."[13]

A cursory glance at the contents of this magazine shows an entirely different approach to the safety problem of the United States Air Force. TIG Brief is couched in phraseology for staff functions. As already explained, the articles are really condensed, succinct paragraphs of directives which govern the operation of all fields of endeavor of the Air Force.

Air Training

There are many types of personnel in the United States Air Force. The purpose of Air Training is to help solve the problems of the Air Training Command by indoctrinating newcomers to the United States Air Force.[14]

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[11] Public Information Letter, Department of the Air Force, VI (October 10, 1953).

[12] Ibid.

[13] Ibid.

[14] From a letter by Allan R. Scholin, Editor, Air Training, February 22, 1954.

Personnel surveys of the Air Training Command show that a sizeable percentage of new airmen enter the Air Force primarily to avoid the draft. Other large percentages enlist to learn a trade, to "see the world" or to gain job security.[15] Hence they may find it difficult to appreciate the significance of the training to which they will be exposed and what will be expected of them when they complete that training.[16]

Consequently, Air Training Command considers it essential to initiate and maintain a campaign to impress on its personnel that the Air Force's primary function is to wage air warfare and that they are expected to contribute toward that function.[17]

Thus to achieve its objective, Air Training is written from the viewpoint of the airman. It avoids the official language of regulations and directives. The editorial objective has been to encourage the airman to think of Air Training as expressing his views and not as a vehicle of transmitting messages from headquarters.[18]

The audience toward which Air Training is directed is mostly in the 18-20 year-old group and probably prefers to read a publication with a high ratio of pictures to printed text.[19] It is worthwhile to note excerpts from statements by commanders of air bases within the structure of Air Training Command who have the responsibility for training all of the airmen and officers of the Air Force at one time or another in their service career.

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[15] Ibid.
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Ibid.

. . . Air Training is especially useful at this base where young airmen receive their first impression of the Air Force. Air Training is a valuable addition to our efforts to motivate the airman to take more interest in training as preparation for his Air Force career.[20]

. . . enthusiastic readers report they gain far better insight into Air Force life through Air Training than any other Air Force publication. The overall excellence of the magazine insures high readership among all personnel. Information of vital importance to the training mission of the Air Force is presented accurately and concisely in an easily readable style. To those new in the Air Force, Air Training provides a link between the classroom and the flight line.[21]

Combat Crew

Written and edited especially for Strategic Air Command flying crews, Combat Crew is a media for disseminating flying safety information within a Command. Its readership is limited to the air bases and operations solely within the Strategic Air Command.[22] Whereas Flying Safety deals with safety precautions throughout the entire Air Force, Combat Crew is vitally interested only with Strategic Air Command personnel. This has a definite influence upon the editorial content. Combat Crew uses articles from contributing writers. Since the articles on flying cover all types of aircraft possessed by the Strategic Air Command, the type of articles range from interceptor fighters to the latest computation procedures for fuel for the largest jet bombers. Contributing editors, or writers, are utilized by the editor of Combat Crew probably because it may be impossible for him to cover such a wide field of aircraft and still attain accuracy.

Distribution of Combat Crew is limited to Strategic Air Command. A very tight budget precludes the printing of any additional copies for

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[20] Ibid.

[21] Ibid.

[22] From a letter by Major Keith M. Garrison, Editor, Combat Crew, April 14, 1954.

general distribution to other than Strategic Air Command bases.[23] Pilots of the Air Force who are not assigned to Strategic Air Command possibly might not know of the existence of the magazine. The articles that appear in the magazine are specific and deal with problems relating to safety, bail-outs, radio procedures, and etc.[24]

As mentioned at the beginning of this chapter, the writer feels that a typical justification request, prepared in accordance with Air Force Regulation, AFR 5-37, April 6, 1953, from a major Command to the Air Adjutant General should be a portion of this chapter. The purpose of this justification request is to show the related items that must be substantiated before funds will be allocated for the publishing of any Command magazine. A sample of Air Training magazine justification, prepared by Brigadier General A. M. Minton, Chief of Staff, at Scott Air Force Base, Illinois, follows:

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[23] Ibid.

[24] Major George B. Parkes, "It Couldn't Happen To Me," Combat Crew, IV (April, 1954), p.p. 6-10.

HEADQUARTERS
AIR TRAINING COMMAND
Scott Air Force Base, Illinois

C
O
P
Y

P461

Dec. 15, 1953

SUBJECT: Justification for AIR TRAINING publications

TO: Air Adjutant General
Headquarters USAF
Washington 25, D. C.

In accordance with your request, the following information is submitted for use in preparing the justification of AIR TRAINING Publication to the Bureau of the Budget.

1. Identification:

   a. Name - AIR TRAINING

   b. Name of Issuing Activity - Headquarters Air Training Command, Scott Air Force Base, Illinois

2. Items Requiring Approval:

   a. Frequency of Issue - Monthly

   b. Maximum number of copies of each issue for official use - 62,150

   c. Maximum number of pages of each issue - 32 plus cover, not to exceed 432 pages in any fiscal year

   d. Maximum annual cost of printing - $76,500

3 Justification and additional information required:

   a. AIR TRAINING was initiated by the commander of the Air Training Command to overcome two major problems in the Command's training mission. These were:

      (1) Newcomers to the U. S. Air Force, who receive basic and specialized training in ATRC before being assigned to operating squadrons, had an extremely hazy concept of the day-to-day work of the Air Force and hence found it difficult to appreciate the significance of the training to which they were exposed and what would be expected of them when they completed that training. Their reactions to this shortage of concrete information about their future work ranged from indifference

to overanxiety. Neither extreme was conducive to effective training.

(2) ATRC personnel surveys showed that a sizeable percentage of new airmen entered the Air Force primarily to avoid the draft. Other large percentages enlisted to learn a trade, to "see the world," or to gain job security. Consequently, ATRC considered it essential to initiate and maintain a campaign which would impress on its personnel that the Air Force's primary function is to wage air warfare and that they are expected to contribute toward that function.

The ATRC commander concluded that a command publication, directed primarily at recruits and students in its technical and aviation cadet courses, would be a valuable tool in focusing their attention on objectives of their training. But it had to be a publication to which they would turn voluntarily. Regulations, manuals, and other directives--while necessary in conducting Air Force business--could not accomplish that job. Accordingly, the editorial format and policy of AIR TRAINING was tailored to meet these objectives. The ATRC commander now refers to this publication as the "heavy artillery of our internal information program."

b. To achieve its objective, AIR TRAINING is written from the viewpoint of the airman. A new policy asserted at ATRC headquarters is explained in terms and informed airman might himself use in discussing its implications with his barracks mates. AIR TRAINING avoids the official language of regulations or directives. The editorial objectives have been to encourage the airman to think of AIR TRAINING as expressing his views and not as a vehicle of transmitting messages from headquarters. No one has supported this objective more thoroughly than the ATRC commander.

c. The audience toward which AIR TRAINING is directed prefers to read a publication with a high ratio of pictures to printed text. This is borne out by ATRC studies of airman reading habits and observations of magazines they buy, and by civilian surveys of readers in the 18-20 age group. For that reason AIR TRAINING illustrates as many articles as possible, subject to the dollar limitation on engravings per issue. Illustrations are selected by an editorial board to foster interest and to assist in explaining or depicting the subject under discussion.

d. The utilization of this publication in the Air Training Command mission is as follows:

(1) To reflect Air Force and Air Training Command policies

for the edification and guidance of all command personnel, and by simultaneous distribution, insure proper interpretation of policies and unity of action.

(2) To provide a common source of information for all categories of Air Training Command personnel-basic trainees, students, permanent party, civilian employees, and combat crew trainees--insuring unified understanding of the Air Training Command mission.

(3) To provide the specialist with a comprehensive understanding of specialities other than his own and their inter-relationships and inter-dependencies.

(4) To provide necessary material for the continuing indoctrination of all Air Training Command personnel which cannot be completely absorbed during the intensified basic training periods.

(5) To provide the trainee with a source of information concerning new developments and techniques affecting his efficiency and well being.

(6) To make the vital lessons of combat experience available to personnel who are in the formative period of their military career.

(7) To preclude the necessity for additional limited-appeal and restricted-purpose publications.

e. Experience since the initial issue of this publication, as reflected in surveys conducted by ATRC and expressions from base commanders and training executives, has affirmed that AIR TRAINING is enthusiastically received by the audience to which it is addressed and has materially influenced the attitude of airmen toward their training. This AIR TRAINING is achieving the results for which it was designed. The ATRC commander has certified that it performs an essential function in the conduct of the ATRC mission.

f. The annual cost of printing this periodical, other than the printing cost referred to in paragraph 2d above, is $29,336. This amount includes:

Salaries $16,500*

*The preparation and editing of AIR TRAINING is accomplished on a part-time basis by the personnel of the Production Division, Office of Information Services, Headquarters Air Training Command. A total of 12 people working on this publication are devoting from 25 percent to 65 percent of their time to the publication.

Among other functions of this Division are: preparation of editorial, graphic and oral informational materials for use in internal and public information activities of this command.

Distribution	$8,386
Travel	3,000
Communications	750
Art and photo supplies	600
Office supplies	100
	$29,336

4. Printing Specifications:

   a. Trim size - 7 3/4 x 10 1/2 inches

   b. Percent of publication comprized of illustrations - 33 percent

   c. Types of art work utilized - photographs, line drawings, water color and temperart illustrations, charts, and graphs

   d. Types of illustrations utilized - half-tone and line engravings

   e. Type of binding - saddle stitched

   f. Color of ink - inside pages, black only; cover two colors on all four pages

5. Distribution:

   a. 35 Training Command bases received 200 copies or more in bulk. Thirteen Training Command bases received less than 200 copies in bulk. This distribution is made at base level by the Public Information Officer who has the responsibility of providing copies in accordance with the following established ratio:

      (1) Indoctrination and technical training bases one copy to each four assigned personnel. At these bases are stationed AIR TRAINING'S primary audience--airmen who are new to the service. Therefore the ratio is lower than to other ATRC bases where personnel have been in the service longer; however, AIR TRAINING is intended for all ATRC personnel--airmen, officers, and civilians personnel, both students and permanent party

      (2) Flying and Crew Training Air Force Bases: One copy to each five assigned personnel

      b. Distribution:

Base Mission	No. Personnel	Dist. Ratio	No. Copies
3 Indoctrination Bases	41,000	4 to 1	10,250
10 Tech Training Bases	102,000	4 to 1	25,500
21 Flying Training Bases	60,000	5 to 1	12,000
9 Crew Training Bases	43,000	5 to 1	8,000
			56,350

Activity	Copies Each Activity	
67 USAF Aviation Cadet and Officer Candidate recruiting teams under ATRC's supervision	50	3,350
185 Air RCTC detachments at United States colleges and universities	10	1,850
USAF commands and numbered Air Force overseas	10	320
Individual information copies to military agencies which require them in official duties and as exchange with other publications		223
		60,673

6. Additional information required on requests for continuing existing periodicals

   a. The mailing list of this periodical is under constant revision based on the personnel strength at each base

   b. No circularization of the individual activities is made as the number of copies published is based on personnel strength

7. Sufficient contract field printing funds are presently available to the Air Training Command to defray the cost of this periodical as well as all other printing costs for the remainder of the current fiscal year.

FOR THE COMMANDER:

s/t/ A. M. MINTON
Brigadier General, USAF
Chief of Staff

CHAPTER III

QUESTIONNAIRES USED IN THE STUDY

A competent journalist is usually not satisfied with generalized statements. He wants to know the facts of the five W's and the H of the journalism profession, the Who, What, When, Where, Why, and How. The questionnaire used in this study was designed to obtain such information.

An exhaustive search was made by the writer of the Oklahoma Agricultural and Mechanical College library files for a similar type questionnaire used by industrial publications with the thought that it might be adapted to obtain information on the United States Air Force magazines. No questionnaire of this type was found.[1]

The writer did not feel that a purely comparative study with a selected civilian house organ or industrial publication would add to this thesis, but he did feel that questionnaire material could be used as a guide for securing facts on Air Force magazines. Since no questionnaire was found, the writer developed the questionnaire that has been completed by the respective editors of the five selected magazines.[2] Accompanying the questionnaire was a form letter which introduced the writer and explained the purpose of the questionnaire.[3]

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[1]A complete search of the Oklahoma Agricultural and Mechanical College Library reference files with the assistance of Mrs. Alice P. Pattee, reference section, exhausted all possible sources of questionnaire material that might have been available.

[2]Questionnaires used in this study may be found at the end of this chapter.

[3]See Form Letter, in Appendix D.

When the questionnaires were returned to the writer by the editors of the magazines, four editors expressed a desire to receive a copy of the completed study.[4]

The writer feels that tables will help simplify the main sections of the questionnaire results and add clarity to the study. As can be seen from the tables on pages 23, 24, 25, the magazines have certain similarities. The reasons for these similarities become plain when one refers to the authority whereby the magazines are printed.[5] This authoritative regulation requires a justification for each magazine published.[6]

Approval of expenditures of funds comes under close scrutiny by Air Force committees before they are referred to Congressional Committees.[7] Therefore, with justifications being a limiting factor, the editors are somewhat limited in employing color and other techniques that other editors might be free to use. Economy is a keynote of today's United States Air Force.[8]

The purpose of Table 1, A Comparison of Production Data on Five Selected Magazines, is to compare the mechanics of each magazine. Factors included are printing process, government or civilian owned printing facilities, how many copies per issue, the frequency of issue, how many pages per issue, the name of the body type used, the width of column,

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[4]All except Major Keith M. Garrison, Editor, Combat Crew, asked for a copy of the completed study.

[5]Air Force Regulation, AFR 5-37, April 6, 1953.

[6]See copy of justification of Air Training at close of Chapter II.

[7]From a letter by Rubin F. Manriquez, Editor, TIG Brief, March 26, 1954.

[8]Public Information Letter, Department of the Air Force, VI (October 10, 1953).

TABLE 1: A COMPARISON OF PRODUCTION DATA ON FIVE SELECTED AIR FORCE MAGAZINES

NAME OF MAGAZINE	PRINTING PROCESS	GOVERNMENT OR CIVILIAN	COPIES PER ISSUE	FREQUENCY OF ISSUE	PAGES PER ISSUE	NAME OF BODY TYPE	AVERAGE NUMBER OF PHOTOS	USE OF COLOR	COLUMN WIDTH
FLYING SAFETY	OFFSET	CIVILIAN	40,000	MONTHLY	32	BODONI BOLD	31	COVER ONLY	13 PICAS
AIRCRAFT ACCIDENT AND MAINTENANCE REVIEW	OFFSET	CIVILIAN	25,000	MONTHLY	36	GARAMOND	35-40	COVER (TWO COLOR ONLY)	13 PICAS
TIG BRIEF	OFFSET	CIVILIAN	10,850	BI-MONTHLY	16-24	BOOK FACE	NONE	NONE	6 3/4"
AIR TRAINING	LETTER-PRESS	CIVILIAN	62,150	MONTHLY	36	TWENTIETH CENTURY	50-70	COVER (SEPARATE PRESS RUN)	13 PICAS
COMBAT CREW	OFFSET	CIVILIAN	9,500	MONTHLY	32	MODERN FACE CARIO TYPE	35-40	COVER	18 PICAS

TABLE 2: A COMPARISON OF EDITORIAL STAFF
OF FIVE SELECTED AIR FORCE MAGAZINES

NAME OF MAGAZINE	EDITOR: AGE	EDITOR: RANK	EDITOR: RATED	EDITOR: COLLEGE GRADUATE	STAFF: NUMBER OF CIVILIANS	STAFF: NUMBER OF AIR FORCE
FLYING SAFETY	43 YEARS	MAJOR	YES	NO	1	5
AIRCRAFT ACCIDENT AND MAINTENANCE REVIEW	47 YEARS	MAJOR	YES	YES	3	4
TIG BRIEF	33 YEARS	CIVILIAN	NO	NO	4	NONE
AIR TRAINING	38 YEARS	CIVILIAN	NO	NO	2	10
COMBAT CREW	30 YEARS	MAJOR	YES	YES	1	4

TABLE 3: A COMPARISON OF SPECIAL EDITORIAL FUNCTIONS, COSTS PER MONTH, AND SOURCE OF FUNDS FOR FIVE SELECTED AIR FORCE MAGAZINES

NAME OF MAGAZINE	RESEARCH FILES: (UNSATISFACTORY REPORTS, ACCIDENTS)	REGULAR CONTRIBUTORS	COST PER MONTH	FUND SOURCE
FLYING SAFETY	AVAILABLE FOR USE	NO	$12,000	BUREAU OF BUDGET
AIRCRAFT ACCIDENT AND MAINTENANCE REVIEW	AVAILABLE FOR USE	NO	$2,500	BUREAU OF BUDGET
TIG BRIEF	NO	NO	$.03 per copy	APPROPRIATED FUNDS
AIR TRAINING	AVAILABLE FOR USE	NO	$6,395	BUREAU OF BUDGET
COMBAT CREW	AVAILABLE FOR USE	YES	$1,767	BUREAU OF BUDGET

average number of photographs that appear in each issue, and the use of color by each magazine. Unknown to the writer at the time one questionnaire was mailed to the respective editors was the fact that in each justification request the above factors had to be listed for scrutiny by the approving printing committees in Washington, D. C. [9]

The reason for obtaining the type of printing process deals with cost. As the reader will notice, only one magazine, Air Training, is printed by the letter press method. The writer has no means of knowing if an offset printing source is available but offset printing for a magazine with a high percentage of illustrations is usually cheaper.[10] Why Air Training is printed by the letter press method and not by offset is not known to the writer.

All of the selected magazines are printed in a civilian shop. The reason for this question being asked was to determine if the United States Air Force possess printing presses for the purpose of magazine production.

Only one magazine differs with frequency of issue. TIG Brief which is prepared, edited, and published in Washington, D. C., is a magazine in format but its mission is to clarify Air Force directives and as such is published bi-monthly to be more current.[11]

In number of pages per issue, TIG Brief varies from 16 to 24. Reference to this magazine in Appendix B will show that it has no photographs or illustrations to enliven the content. Flying Safety and Combat Crew

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[9] Ibid.

[10] R. Randolph Karch, How to Plan and Buy Printing (New York, 1950), p. 138.

[11] From a letter by Rubin F. Manriquez, Editor, TIG Brief, March 26, 1954.

have 32 pages per issue, while Aircraft Accident and Maintenance Review and Air Training have 32 pages plus separate covers for a total of 36 pages.

The selection of type depends upon what the printer has in his shop. The purpose of the question on body type was to identify the type face for the reader.

A column width of 13 picas is standard for four of the five selected magazines. Only TIG Brief varies with a wider column. On some pages it runs two columns, 3½ inches wide, and on others one column 6 3/4 inches wide.

The average number of photographs column in Table 1 shows the greatest variance of any column. Flying Safety and Combat Crew, the two magazines that concentrate on flying safety of flying crews, parallel each other in number of photographs used. Aircraft Accident and Maintenance Review averages a few more photographs than Flying Safety and Combat Crew. As already explained, TIG Brief does not use illustrations. The number of photographs that Air Training utilizes to accomplish its mission is nearly double that of the others. It averages 50 to 70 photographs per issue, which the editor feels is about the number necessary for the reading audience.[12]

It is important to notice the last column of this table. All but TIG Brief use color on the cover.

The purpose of the questions back of the material contained in Table 2, A Comparison of Editorial Staffs of Five Selected Air Force

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[12]See subparagraph c., paragraph 3, justification request, Air Training, Headquarters, Air Training Command, Scott Air Force Base, Illinois, December 15, 1953.

Magazines, is to give information on qualifications of the editor and size of his staff. The writer wanted to obtain information about the editors such as age, military rank, and if he were a rated pilot. Rated refers to personnel who fly Air Force aircraft and receive flying pay or incentive pay. This is important because articles on flying usually reflect intimate knowledge and daily contact with the problems of flying.[13] Also the writer wanted to show, by Table 2, the employment of civilians on military magazines. This factor may be important to a reader of this study who is interested in obtaining a position on such a publication and who is not a member of the Air Force.

The age of editors ranges from 30 years to 47 years. Reference to individual questionnaires for all of the editors will reveal that all have had practical journalism experience. Factors that lead to an editorship of an Air Force magazine involve assignment quotas, years service, certain military criteria, and several other personnel procedures.[14] There may be some significance to the fact that no editor is in the 20-30 year age bracket.

All Air Force personnel editing these magazines hold the rank of Major. TIG Brief and Air Training are staffed by civilian editors. However, they are under the direct supervision of military officers.

Education is continually stressed in the Air Force and the Air Force conducts several schools for the edification of its officers and airmen.[15]

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[13]"Hot Potato--MATS Style," Flying Safety, X (January, 1954), p. 17.

[14]Based on the writer's personal knowledge of Air Force personnel procedures.

[15]Brigadier General Dale O. Smith, "Let's Educate Our Officer Corps," Air Force, XXXVII, No. 4 (April, 1954), p. 60-64.

However, only two of the five editors stated that they were college graduates. This is not surprising as at present, only about 43 percent of all Air Force officers are college graduates.[16]

Air Force magazines apparently turn to civilian sources to employ persons skilled in journalism. All of the selected magazines employ civilians. TIG Brief employs all civilian personnel whereas Air Force personnel dominate the remaining four editorial staffs.

Air Force personnel assigned to the selected magazines outnumber civilian personnel on the five magazines 23 to 11. The duties of airmen were not asked for on the questionnaire but on the questionnaire of Air Training, Flying Safety, and Aircraft Accident and Maintenance Review the Table of Organization reveal what job positions they occupy.

The first column on Table 3 refers to Research files such as Unsatisfactory Reports, Accident Reports, and other related Air Force forms. No editor returned copies of the above forms to the writer, therefore no samples of these sources of information for articles can be included here. However, a brief description may help the reader. An Unsatisfactory Report is a United States Air Force form that deals with faulty equipment on Air Force aircraft. A using organization is required to submit an Unsatisfactory Report on faulty items of equipment through proper channels so that action can be taken to prevent accidents that might occur because of this faulty equipment.

United States Air Force form 14, Report of Aircraft Accident, is a form that is used as research material by Flying Safety, Aircraft Accident and Maintenance Review, Combat Crew, and Air Training. The

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[16]Ibid.

mastheads of all of the above-mentioned magazines state the following:

> The printing of this publication has been approved by the Director of the Bureau of the Budget, November 24, 1953 (or applicable date for each individual magazine). Facts, testimony and conclusions of aircraft accidents printed herein have been extracted from USAF Form 14, and may not be construed as incriminating under Article 31 of the Uniform Code of Military Justice. All names used in accident stories are fictitious.

The regular contributors column of Table 3 varies only with Combat Crew. This magazine deals with missions of Strategic Air Command and the editor prints articles from contributors from air bases within the structure of Strategic Air Command.[17] However, Flying Safety will irregularly reprint or publish articles on special subjects from writers not assigned to the staff.[18]

The cost per month column of Table 3 is self-explanatory. Flying Safety, which is printed for flying crews of the Air Force for world-wide distribution, has the largest monthly cost. At the other extreme, TIG Brief which is very limited in distribution is the most economical.

The last column on Fund Source is determined in all cases by Director of the Bureau of the Budget with exception of TIG Brief. The appropriation for the printing of this magazine comes from an Air Force fund titled "Appropriated Funds."[19]

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[17]"On the Deck," Combat Crew, IV (April, 1954), p. 12-13.

[18]"Flight Aspects of The Mountain Wave," Flying Safety, X (January, 1954), p.p. 21-28.

[19]See questionnaire on TIG Brief, p. 38.

Information Questionnaire for Thesis on A Study of Selected United States Air Force Magazines: Flying Safety

I. Physical Characteristics:

A. Printing:

1. Where printed? Los Angeles Lithograph Company, Los Angeles, California

2. Type paper stock? White Litho Coated Book (140 # per 1000)

3. Type printing press? Webb's

4. Process of reproduction? Offset

5. Type ink used? Black ink (Printer's local purchase)

6. Copies per issue? 40,000 per month

7. Frequency of publication? Monthly

8. Total press time run? 2-3 days

9. Average number pages per issue? 32

10. Size of pages? $8\frac{1}{4}$ x $11\frac{1}{4}$

11. Name of body type? Bodoni Book

12. Name of head types? Bodoni Bold, Futura Demi Bold and Bold Vogue, Ultra Bodoni and Phoenix*

13. Width of column? 13 picas

14. Average number of photos per issue? 31

15. Average number of all illustrations of other kinds per issue? 17

16. Average number of cartoons per issue? 2

17. Average number of articles per issue? 10

18. Number of years published? 10 years

19. Use of color

a. One or more? One (other than back)

b. Front cover only? Cover plus 16 pages in one flat **

*These are examples - actually we try and mark-up Heads and Deks to suit layout and have a wide variety at our disposal.

**Color was discontinued inside but will be used in May)

II. Organization and Administration:

1. Table of Organization. (Check attachment)

2. Functional Chart. (Individual duties of each staff member)

3. Editor		Managing Editor
a. Age?	43	31
b. Rated or non-rated	Rated	Rated
c. Time devotes to each issue? Full time job or half time?	Full	
d. Average number of hours per week at job?	50	60 (Overtime average approximately 80-90 hrs. per month beyond normal 8 hr. work day)

e. Major experience prior to present job?

1. Check one.			
a. News writing	x	x
b. Advertising	x	x
c. Public relations	x	x
d. Feature writing	x	x
e. Publicity	x	x
f. Other (Explain)		

f. College graduate in Journalism? No Yes

g. Normal tour as Editor? 3 yrs. 3 yrs.

4. Average salary of civilian editorial staff? Sec. - GS-5

5. Number of civilians on staff? 1

6. Number of USAF personnel on staff? 5

a. Rating of USAF personnel?

Major 1

Captain 1

1st Lt 1

T/Sgt 2

7. Methods of Distribution:

   a. Copies by United States Post Office Service? 39,000

   b. Copies by Unites States Air Force aircraft to Air Bases? 600 to Alaska

   c. Copies by subscription? 1,500

   d. Copies by other methods? Ship and rail - approximately 2,500

8. Circulation:

   a. How many subscriptions? GPO handles subscriptions, exact number unknown

   b. Copies to other services than United States Air Force?

      1. United States Army? 500

      2. United States Navy? 2,000

      3. Government Printing Office? 1,500

III. Editorial Procedures and Policies:

1. How many assigned photographers? One. Editor and Managing editor both able to shoot pictures with Speed Graphic

2. Are their regular Flying Safety reporters or contributors assigned to Major Commands or designated areas around the world? No. All voluntary basis

3. Research Files Used for stories? (If possible, attach sample copy)

   1. Accident files? Forms 14 and backlog of Special Investigations

   2. Unsatisfactory Reports? Very rarely

   3. Other sources of stories or articles? Occasionally we solicit pieces from United States Air Force Command or agency - most pieces prepared and handled by staff

   4. Directive or authority for publishing? No extra copy available (AFR 5-7)

      1. Attach copy.

   5. Financial Structure?

      a. Cost per month? $12,000.

      b. Fund? Bureau of Budget

Information Questionnaire for Thesis or A Study of Air Force Magazines: Aircraft Accident and Maintenance Review

I Physical Characteristics:

A. Printing

1. Where Printed? Central Lithograph Company, 1515 South Hope Street, Los Angeles 15, California

2. Type paper stock? 60 lb. Zellerback Lithomat sheets measuring 35½" x 46" (M weight about 206 lbs.)

3. Type printing press? 2-color Potter press 41" x 54"

4. Process of reproduction? Offset

5. Type ink used? Standard offset ink manufactured by Sunset Ink Company

6. Copies per issue? 25,000

7. Frequency of publication? Monthly

8. Total press time run? 16 fronts for 28,000 and 16 back-ups; total of 56,000 impressions on inside. Four covers run at one time for 7,000 sheets. Work and turn for 28,000 impressions, 14,000 of which are for black and 14,000 for color. Total press time is 2,750 impressions per hour, or a little over 20 hours. It requires about 3 additional hours to make ready, 3 hours to wash up press. Use about 1½ pounds of ink for 1,000 sheets. Printed sheets are picked up on skids, approximately 8,000 to 10,000 sheets per skid. Prepared for binding with folder that folds 32 pages in one operation.

9. Average number pages per issue? 32

10. Size of pages? 8-3/16" x 11-1/4"

11. Name of body type? Garamond (Vari-type machine)

12. Name of head type? Fototype

13. Width of column? 2¼"

14. Average number of photos per issue? 35 to 40 halftone photos

15. Average number of all illustrations of other kinds per issue? 20 linecuts, 10 overprints, 6 halftone illustrations. One Duotone cover.

16. Average number of cartoons per issue? One full page (back

cover). Otherwise quite varied; some months 5 or 6 inside, other months none.

17. Average number of articles per issue? Ten to 15 articles from half a page to 5 pages in length. About 10 or 15 "shorts."

18. Number of years published? 9

19. Use of color:

    a. One or more? Black and one other color front and back covers only.

    b. Front cover only? No

II. Organization and Administration:

1. Table of Organization. (Check attachment)

2. Functional Chart. (Individual duties of each staff member)

3. Editor:

    a. Age? 47

    b. Rated or non-rated? Rated Pilot on flying status

    c. Time devotes to each issue? Full time job

    d. Average number of hours per week at job? Varies from 35 to 65

    e. Major experience prior to present job?

        (1) Check one.
        a. News writer
        b. Advertising
        c. Public Relations
        d. Feature writing
        e. Publicity
        f. Other (explain)

    f. College graduate in journalism? No

    g. Normal tour as Editor? Three years

4. Average salary of civilian editorial staff? $5,084 annual

5. Number of civilians on staff-3 plus stenographer

6. Number of USAF personnel on staff? Four including editor

a. Rating of USAF personnel?

Major
1st Lt
S/Sgt
A/1C

7. Methods of Distribution:

a. Copies by U. S. Post Office Service? All copies mailed to first points of distribution. From there, distribution is out of our hands but doubtless is made by all manner of transportation

b. Copies by USAF aircraft to Air Bases? See above

c. Copies by subscription? No paid subscription

d. Copies by other methods? None

8. Circulation:

a. How many subscriptions? None

b. Copies to services other than USAF?

1. U. S. Army? 200
2. U. S. Navy? 2,000
3. Government Printing Office? None

III. Editorial Procedures and Policies:

1. How many assigned photographers? One photographer is shared with Flying Safety Magazine

2. Are there regular Aircraft Accident and Maintenance Review reporters or contributors assigned to Major Commands or designated areas around the world?
No. Our staff members travel to secure some stories. Contributions are accepted from Air Force personnel world-wide, as well as from civilians engaged in aeronautical engineering.

3. Research files used for stories? (If possible, attach a sample copy)

a. Accident files? Yes

b. Unsatisfactory Reports? Yes

c. Other sources of stories or articles? We keep abreast of maintenance and engineering through contacts with Air Materiel Command, WADC, Air Force units in the field, manufacturers,

and the much-traveled investigators and engineers of the Directorate of Flight Safety Research (of which we are a part).

4. Directive or authority for publishing? AFR 62-8, 10 Nov. 50

   a. Attach a copy (None available here at present)

5. Financial Structure:

   a. Cost per month? $2,500 for printing

   b. Fund? Bureau of the Budget

Table of Organization

POSITION	AUTHORIZED	PRESENT
Editor	Lt Col	Major
Managing Editor	GS-12	GS-12
Associate Editor	1st Lt	1st Lt
Vari-Typist	A/1c	A/1c
Layout Man	A/1C	S/Sgt
Stenographer	GS-4	GS-4
*Contributing Editor	GS-9	GS-9

*Shared with Flying Safety Magazine

Information Questionnaire for Thesis on A Study of Selected United States Air Force Magazines: TIG Brief

I Physical Characteristics:

A. Printing:

1. Where Printed? Civilian Contract through GPO
2. Type paper stock? 100 pound white offset
3. Type printing press? Offset
4. Process of reproduction? Offset
5. Type ink used? Black
6. Copies per issue? 10,850 (plus those reproduced by oversea commands from negatives furnished)
7. Frequency of publication? Bi-weekly
8. Total press time run? Undetermined
9. Average number pages per issue? 16-24
10. Size of pages? 7 4/5" x 10 1/5"
11. Name of body type? Book Face
12. Name of head type? Bold
13. Width of column? 6 3/4"
14. Average number of photos per issue? (Mostly banners)
15. Average number of all illustrations of other kinds per issue? Poster on back when appropriate (approximately 1 per 5 issues)
16. Average number of cartoons per issue? None
17. Average number of articles per issue? Approximately 25 articles, 50 briefings, 1 Check List per issue
18. Number of years published? 10 years
19. Use of color: None
    a. One or more?
    b. Front cover only?

II. Organization and Administration:

A. Table of Organization (Check attachment). See Attachment

B. Functional Chart. (Individual duties of each staff member).

See Attachment

C. Editor:

1. Age? 33

2. Rated or non-rated? Civilian

3. Time devotes to each issue? Fifty percent

4. Average number of hours per week at job? Twenty hours

5. Major experience prior to present job? Administrative and editorial experience with AF in ZI and overseas

(a) Check one
a. News writer
b. Advertising
c. Public Relations
d. Feature writing
e. Publicity
f. Other (explain)

6. College graduate in journalism? Undergraduate

7. Normal tour as Editor? Permanent Civil Service Position

D. Average salary of civilian editorial staff? Previously furnished

E. Number of civilians on staff? 4

F. Number of USAF personnel on staff? None

1. Rating of USAF personnel? None

G. Methods of Distribution?

1. Copies by USAF aircraft to Air Bases? Films to oversea commands

2. Copies by U. S. Post Office Service? 10,850

3. Copies by subscription? None

4. Copies by other methods? None

H. Circulation:

1. How many subscriptions? Automatic distribution to AF

activities

2. Copies to services other than USAF?

   (a) U. S. Army? 40 (approximately)
   (b) U. S. Navy? 10 (approximately)
   (c) Government Printing Office? None

III. Editorial Procedures and Policies:

1. How many assigned photographers? None

2. Are there regular Combat Crew reporters or contributors assigned to Major Commands or designated areas around the world? No

3. Research files used for stories? (If possible, attach a sample copy) Research Files

   a. Accident files? None
   b. Unsatisfactory Reports? None
   c. Other sources of stories or articles? All articles are:
      Based on AF needs determined by observation, Air Staff suggestions, and research;
      New policies, directives, inspections or studies regarding operating deficiencies
      AF publications, public laws, courts-martial manual, etc.

4. Directive or authority for publishing? AFR 5-37

   a. Attach a copy if available. Previously sent

5. Financial Structure:

   a. Cost per month?
   b. Fund? Appropriated Funds.

TABLE OF ORGANIZATION

POSITION	AUTHORIZED	PRESENT
Editor (part-time)	1	
Assistant Editor (part-time)	1	
Managing Editor		
Art Editor		
Associate Editor		
Vari-Typist		
Typist (part-time)	1	
Layout Man		
Stenographer (full-time)	1	

NOTE: TIG Brief is one of the several functions assigned to our branch. Others include histories, internal IG instructions, studies on IG and AF matters, etc. Editor of TIG Brief is also Chief of Editorial and Publishing Branch, Management Division, PFF of the Inspector General.

Information Questionnaire for Thesis on A Study of Selected United States Air Force Magazines: Air Training

I. Physical Characteristics:

A. Printing:

1. Where printed? American Press, Columbia Missouri
2. Type paper stock? 60 lb. white coated "Trufect", maximum sheet size 32 x 45½
3. Type printing press? Two Color Meihle style 46
4. Process of reproduction? Letter press - Cover - offset
5. Type ink used? Letter press half tone ink
6. Copies per issue? 62,150
7. Frequency of publication? Monthly
8. Total press time run? 30 hours plus offset cover run plus folding and stitching
9. Average number pages per issue? 32
10. Size of pages? 7 3/4" x 10 1/2"
11. Name of body type? 10 pt Baskerville on 1' slug, 13 pica wide column
12. Name of head type? Twentieth century and Bodoni - Stal and Roman
13. Width of column? 13 picas - 2½ inches
14. Average number of photos per issue? 50 - 70
15. Average number of all illustrations of other kinds per issue? 33 percent. 5 - 10
16. Average number of cartoons per issue? One to two, sometimes one full page
17. Average number of articles per issue? 14
18. Number of years published? 2½ (first issue, February 1952)
19. Use of color: a. One or more? Black*

    b. Front cover only? 2 colors offset, 100 lb "Warrens offset"

*Contractor provides one extra color free of charge for one press run (16 pages) in order to use Air Training as a selling point for prospective customers. Since he has a two color press this extra color costs him only

II. Organization and Administration:

1. Table of Organization. (Check attachment)

2. Functional Chart. (Individual duties of each staff member)

3. Editor:

a. Age? 38

b. Rated or non-rated? Non-rated civilian

c. Time devotes to each issue? 60 hrs. Full time job or half time? 1/3

d. Average number of hours per week at job? 40

e. Major experience prior to present job?

(1) Check one.
a. News writing
b. Advertising
c. Public Relations x
d. Feature writing
e. Publicity
f. Other (explain)

f. College graduate in Journalism? No

g. Normal tour as Editor? Indefinite

4. Average salary as civilian editorial staff? Editor - $8360 per yr Assistant Editor - $3500 per year

5. Number of civilians on staff? 2 (Editor and copy stylist, part time)

6. Number of United States Air Force personnel on staff? 10

a. Rating of United States Air Force personnel?

Major
2d Lt
2d Lt
Lt
S/Sgt
S/Sgt
M/Sgt
A/2C
A/1C
A/2C

Includes one pilot. All part time for Air Training. None of Air Training staff personnel are employed full time for Air Training. They have specific duties within the Office of Information Services structure one part of which is the production of Air Training.

7. Methods of Distribution:

   a. Copies by United States Post Office Service? Parcel post 5,050 copies. Franked mail, 2,100 copies

   b. Copies by United States Air Force aircraft to Air Bases? 0

   c. Copies by subscription? 0

   d. Copies by other methods? Bulk motor freight, 55,000 copies

8. Circulation:

   a. How many subscriptions? 0

   b. Copies to other services other than United States Air Force? 4, Air Force Reserve Officers Training Corps

      1. United States Army? 0

      2. United States Navy? 0

      3. Government Printing Office? 8

III. Editorial Procedures and Policies:

1. How many assigned photographers? 2

2. Are there regular Air Training reporters or contributors assigned to Major Commands or designated areas around the world? No. Out of command articles are requested by letter to individual people or commands

3. Research Files used for stories? (If possible, attach a sample copy)

   a. Accident files? None (Ground and Flying Safety maintains these, such as they are)

   b. Unsatisfactory Reports? No

   c. Other sources of stories or articles? Base newspaper stories, 5 percent; outside suggestions 10 percent; staff, boys 85 percent. The Command Historian's offices are situated in our building, thus we need maintain no files other than photo files, and basic information germaine to current or future stories on a specific subject.

4. Directive or authority for publishing?

   a. Attach copy. (You have been supplied this)

5. Financial Structure:

   a. Cost per month? $6,395 not counting salaries

   b. Fund? Appropriated funds

Table of Organization

POSITION	AUTHORIZED	PRESENT
	7216	
Editor	1 - Lt Col or GS-13	1 - GS-13
Managing Editor	1 - Major 7216	Major
Executive Editor	1 - Major	2d Lt
Art Editor	1 - Captain 7224	2d Lt
Associate Editor	2 - Captain 7224	2 - 2d Lts
Inf Supervisor	2 - 72170 (M/Sgt,T/Sgt)	2 - S/Sgts
Illustrator Supervisor	1 - 99370 (M/Sgt)	1 - S/Sgt
Illustrator Technician	1 - 99350	1 - A/2C
Photo Supervisor	1 - 23270 (M/Sgt)	1 - M/Sgt
Photo Technician	1 - 23270 (T/Sgt)	1 - A/2C
Edit Clerk	1 - GS/4 Civ	1 - GS-4 Civ

Information Questionnaire for Thesis on A Study of Selected United States Air Force Magazines: Combat Crew

I. Physical Characteristics

A. Printing:

1. Where printed? Omaha, Nebraska. Ralph Printing and Lithographing Company.

2. Type paper stock? 70 lb. enamel, self cover, saddle stitched

3. Type printing press? Harris offset

4. Process of reproduction? Offset lithography International printing

5. Type ink used? IPI's fast drying lithogem Halftone Black

6. Copies per issue? 9,500

7. Frequency of publication? Monthly

8. Total press time? 18 - 20 hours

9. Average number of pages per issue? 32

10. Size of pages? 7 3/4" x 10 5/8" (trimmed)

11. Name of body type? Type sizes vary from 6 points up - majority of body set in 10 point modern pica (cacio light)

12. Name of head type?

13. Width of column? 18 picas - measurement can vary to 37½ picas

14. Average number of photos per issue? Approximately 40

15. Average number of all illustrations of other kinds per issue? 10 - 15

16. Average number of cartoons per issue? 2 - 3. Art work consists of duo-tones, wash, line opaque drawings

17. Average number of articles per issue? 12

18. Number of years published? Three

19. Use of color:

a. One or more? see below

b. Front cover only? Two colors on cover (front and back) No color inside

II. Organization and Administration:

A. Table of Organization (see attachment)

B. Functional Chart. (Individual duties of each staff member)

C. Editor:

1. Age? 30

2. Rated or non-rated? Rated

3. Time devotes to each issue? 75 percent

4. Average number of hours per week at job? 30 - 35

5. Major experience prior to present job?

(a) Check one
a. News writer
b. Advertising
c. Public relations x
d. Feature writing
e. Publicity
f. Other (explain

6. College graduate in journalism? Yes

7. Normal tour as Editor? 3 years

D. Average salary of civilian editorial staff? $7,500

E. Number of civilians on staff? One

F. Number of United States Air Force personnel on staff? Four

1. Rating of United States Air Force personnel?
Major - pilot - Editor
Capt. - pilot - Art editor
T/Sgt. - non rated - Managing editor
A/1C - non rated - Artist

G. Methods of distribution:

1. Copies by United States Air Force aircraft to Air Bases? 4,500

2. Copies by United States Post Office Service? 4,750

3. Copies by subscription? None

4. Copies by other methods? 250 copies local distribution at official Air Force Base and Strategic Headquarters.

H. Circulation:

1. How many subscriptions? None

2. Copies to services other than United States Air Force?

   a. United States Army? None

   b. United States Navy? None

   c. Government Printing Office? Two copies

3. Editorial Procedures and Policies:

   1. How many assigned photographers? None. Photographs obtained from official United States Air Force sources, majority obtained within Strategic Headquarters

   2. Are there regular reporters or contributers assigned to Major Commands or designated areas around the world? No

   3. Research files used for stories? (If possible, attach a sample copy)

      a. Accident files? Yes)
)Cannot release from
      b. Unsatisfactory Reports? Yes) files

      c. Other sources of stories or articles? Articles are solicited from qualified personnel by letter or personal contact

   4. Directive or authority for publishing? Air Force Regulation 6-1 and approval Bureau of the Budget, November 24, 1933

   5. Financial Structures:

      a. Cost per month? $1767.66 (for contract printing)

      b. Fund? Contract printing fund allotted to Command each year on basis of requirements established prior to beginning of each fiscal year

Table of Organization

POSITION	AUTHORIZED	ASSIGNED
Editor	Major	Major
Art Editor	Captain	Captain
Assistant Editor	Civilian (Gs-11)	Civilian (Gs-11)
Editorial writer	M/Sgt	T/Sgt
Artist	T/Sgt	A/1C

CHAPTER IV

FINDINGS AND CONCLUSIONS

It is the purpose of this chapter to summarize the findings of the study. They are many and varied. First, magazines of the armed services are published to accomplish different missions or to disseminate specific information to special fields.

The organizational chart on Figure 1, page 7, showed all of the major Commands of the United States Air Force. Only two major Commands of the eighteen Commands publish regular monthly magazines. They are Air Training Command and Strategic Air Command. Of the total eighteen Commands, five are overseas Commands. They are: Alaskan Air Command, Caribbean Air Command, Far East Air Forces, Northeast Air Command, and United States Air Forces in Europe. The remaining Commands are located within the continental limits of the United States. The missions of all of these Commands differ widely and it is not known to the writer why all Commands do not publish regular monthly magazines.

It should be stated that the five selected magazines of the study are not the only publications published by Commands of the United States Air Force. This study deals only with regular monthly publications. Most major Commands publish special magazines or brochures for various reasons. Special sections of Headquarters, United States Air Force, also publish magazines for various reasons but it is not the intent of this study to discuss these special magazines. However, three of the five selected magazines, Flying Safety, Aircraft Accident and Maintenance Review, and TIG Brief are published monthly by the Office of The

Inspector General and are vitally concerned with the safety of United States Air Force personnel. These are the most widely-known magazines of the Air Force.[1] Flying Safety deals with the safety of flying crews. It has a world-wide Air Force distribution. Further evidence that Flying Safety is the most widely-read Air Force magazine is indicated by the fact that flying personnel on inactive status subscribe to the magazine through the Superintendent of Documents, Government Printing Officer, Washington, 25, D. C.[2]

Aircraft Accident and Maintenance Review deals with the problems of maintenance. It has a world-wide Air Force distribution but at a lower ratio than Flying Safety. This finding will be discussed at length later in this chapter.

TIG Brief, the third publication of the Office of The Inspector General, concentrates upon command directives issued by Headquarters, United States Air Force, and is designed to aid top commanders of the Air Force in the conduction of their commands.

Evidences that these three magazines serve their purpose well is indicated by commanders comments which appear in Appendix C.

All five magazines are distributed to Air Force personnel without charge. One contains restricted information however none are mandatory reading. They serve as another means of informing Air Force personnel about their respective jobs.

All but TIG BRIEF is published monthly. It is published bi-weekly.

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[1]See Table 1, page 23, which gives circulation figures on the five magazines.

[2]From the masthead of Flying Safety, X (January, 1954).

Circulation of the magazines differ. Flying Safety is distributed on a circulation basis of one magazine to every ten flying personnel. Flying personnel hold such aeronautical ratings as pilots, navigators, bombardiers, radar observers, flying engineers, radio operators, and scanners.

Circulation of Aircraft Accident and Maintenance Review is based upon one copy for each 15 maintenance personnel. Bulk distribution is made from Norton Air Force Base, San Bernardino, California to 15 numbered Air Forces and Commands outside the continental limits of the United States, to 175 air bases and activities within the zone of interior, and to 132 Air National Guard organizations. Local distribution is then handled by the Flying Safety Officer of the base or activity.[3]

Bulk distribution of TIG Brief is made by the printer from a special mailing list directly to installation commanders and major Command headquarters. The ratio of distribution to base commanders is one copy per Squadron, three copies per Group, and seven copies per Wing. In addition, negatives of each issue are sent to Headquarters, Far Eastern Air Forces and United States Air Forces in Europe, for reproduction and distribution.[4]

Combat Crew is distributed to personnel assigned to the Strategic Air Command and Air Training is distributed to personnel under the Air Training Command.

Most magazines in this study follow a rather standard magazine format of three columns per page and are an economical size to print as

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[3]From a letter by Major Joseph P. Tracy, Acting Chief, Safety Education Division, Office of Inspector General, March 19, 1954.

[4]From a letter by Rubin F. Manriquez, Editor, TIG Brief, February 19, 1954.

they can use the basic sheet size of paper and avoid excessive waste in trimming.[5] One magazine, TIG Brief, uses only one column per page with an occasional two columns per page. This magazine uses no photographs or illustrations. However, with columns being six and three-quarters inches in width, readability of content is weakened.[6]

Four of the selected magazines have access to United States Air Force Form 14, Report of Aircraft Accidents. These reports serve as source material for articles based upon actual aircraft accidents. The writer, who is a pilot, can attest to the value of articles written from the reports. Stories concerning aircraft that he has flown and now flies frequently have made him acutely aware of the latest innovations that have been the result of some other pilot's experiences.[7] TIG Brief does not use material gathered from these reports.

All but one magazine, Air Training, use the offset process for printing. Air Training uses the letterpress method. Offset printing is usually cheaper than letterpress when the runs are short and illustrations are many.[8] Offset probably permits the staff to more fully utilize its artistic ability than does letterpress.

Two magazines, Aircraft Accident and Maintenance Review and Air Training, print separate covers in two colors. Air Training uses color on press runs other than on the cover. Flying Safety and Combat Crew have self covers which use color. They did not use color within the issues

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[5]R. Randolph Karch, How to Plan and Buy Printing (New York, 1950), p. 139.

[6]Don Herold, ATA Advertising Production Handbook (New York, 1947), p. 16.

[7]"Get Home-itis," Flying Safety X (January, 1954), p. 2-3.

[8]R. Randolph Karch, How to Plan and Buy Printing (New York, 1950), p. 137.

studied in this project. Aircraft Accident and Maintenance Review uses color only on the cover. TIG Brief uses no color.

The editors range in age from 30 years to 47 years. There seems to be no correlation between age and editorship because Air Force personnel assignment procedures are complex and dependent upon many circumstances. However, it should be noted that all Air Force personnel who are editors are of the rank of Major.

All editors have journalism backgrounds but only two have college degrees in journalism. No further background information was asked of the editors concerning their years of active service with the Air Force. Therefore no specific statement can be made concerning the factors of age-editorship-rank-college graduate.

The civilian editors, Mr. Allen R. Scholin, Air Training, and Mr. Rubin F. Manriquez, TIG Brief, are on a civilian pay scale slightly below the pay scale of the Air Force Majors who are editors.[9]

The budgets of all the magazines except TIG Brief are limited by the Director of The Bureau of the Budget and these budgets are subject to changing justifications. The funds for TIG Brief come from special appropriations of the Air Force.

There are several opinions, based upon facts gathered in this study, that the writer would like to include here. One purpose of the study was to record information on Air Force publications. This study is only a beginning and does not profess to exhaust all of the possibilities of the subject of Air Force publications. This study is not intended to level criticism at any of the selected magazines. It is the opinion

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[9]See questionnaires in Chapter II.

of the writer that the study has revealed some of the basic facts about each magazine so that a reader might better understand the differences in publishing a magazine within the Air Force in contrast to publishing a magazine for civilian distribution.

Job possibilities for Air Force personnel on these magazines are limited. Staff positions for officers and airmen are determined in accordance with Air Force Specialty Codes.[10] Personnel officers of air bases are cognizant of these Codes and can render advice to those who seek it. Editorships of the different magazines for qualified officers are not totally dependent upon being a college graduate. Undoubtedly a college degree and an interest in the magazine would be considered in making assignments.

Job possibilities for civilians are also limited. Civilians usually serve under Air Force officers who may or may not possess a background in magazine production.

It is the opinion of the writer that a higher ratio of distribution, that is, more magazines for the same number of personnel, would be of value to the Air Force for all magazines.

A study of magazine reading habits of Air Force personnel might prove valuable. The writer did not receive any results of surveys conducted by any of the selected magazines as to the number of readers per copy. Commanders comments indicate the feelings of Air Force commanders concerning the effectiveness of the magazines. On the basis of these comments and letters from various editors, the writer concludes that the magazines are serving their readers adequately. Whether or

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[10]Air Force Manual, AFM 36-1, February 1, 1953.

not they fit the audience as to readibility level was not considered in this study. Nevertheless, editors statements and the justification of each magazine shows consciousness of this factor.

Although this study was not intended to compare these publications with any outside of the Air Force, it is the opinion of the writer that they compare favorably in appearance with other magazines of similiar size and circulation such as the better industrial publications or house organs.

On the basis of his own limited experience, the writer concludes that the quality of printing of each magazine is good to excellent; the paper stock is average to better than average; and layouts range from average to excellent within the limitations of cost per issue.

SOURCES CONSULTED

A. BOOKS

Herold, Don. ATA Advertising Production Handbook. New York: Advertising Association of America, Inc., 1947.

Karch, Randolph. How to Plan and Buy Printing. New York: Prentice-Hall, Inc., 1950.

Marshall, Captain M. L. A Survey of Military Periodicals. Unpublished M. S. thesis, School of Journalism, University of Missouri, 1953.

Mott, Frank Luther. A History of American Magazines 1741-1850 Volume 1; New York: D. Appleton and Company, 1930.

B. ARTICLES

Bradbury, W. J., 1/Lt. "On the Deck." Combat Crew, IV, No. 10 (April, 1954), 12-13.

Parkes, George B., Major. "It Couldn't Happen to Me." Combat Crew LV, Volume 10, (April, 1954), 6-10.

Smith, Dale O., Brigadier General. "Let's Educate Our Officer Corps." Air Force, XXXVII, No. 4, (April, 1954), 60-64.

"Dangerous Selenium Fumes." Aircraft Accident and Maintenance Review. IX, No. 1, (January, 1954), 13.

"Flight Aspects of the Mountain Wave." Flying Safety X, No. 1 (January, 1954), 21-28.

"Get Home-itis." Flying Safety X, No. 10 (January, 1954), 2-3.

"Hot Potato-MATS Style." Flying Safety X, No. 10 (January, 1954), 17-19.

"Well Done." Flying Safety X, No. 10 (January, 1954), 9.

C. LETTERS TO EDITORS

Garrison, Major Keith M., Editor, Combat Crew, Strategic Air Command, February 22, 1954.

Manriquez, Mr. Rubin F., Editor, TIG Brief, Officer of The Inspector General, March 26, 1954.

Moore, Captain John H., Managing Editor, Flying Safety, Officer of The Inspector General, January 21, 1954.

Scholin, Mr. Allen R., Editor, Air Training, Air Training Command, February 22, 1954.

Tracy, Major Joseph P., Acting Chief, Safety Education Division, Officer of The Inspector General, March 19, 1954.

D. AIR FORCE REGULATION AND MANUAL

Air Force Manual, 36-1, February 1953.

Air Force Regulation, 5-37, April 6, 1953.

A P P E N D I X A

COPY OF AUTHORITY FOR PUBLISHING OF EACH MAGAZINE

AIR FORCE REGULATION }
NO. 5–37 }

DEPARTMENT OF THE AIR FORCE
WASHINGTON, *6 APRIL 1953*

PUBLICATIONS

Periodicals

	Paragraph
Purpose and Scope	1
Background	2
Definitions	3
Approval of Headquarters USAF	4
Limitations	5
Request for Approval	6
Certificate of Necessity	7
Responsibilities	8
Mailing Lists	9
Reports	10

1. Purpose and Scope:

a. *Purpose:* To assure effective management practices at all levels of command in the preparation, printing, and distribution of periodicals; to establish procedures whereby authorization for the production of new periodicals is obtained prior to publication; and to assist the USAF Printing Committee in determining which periodicals require review and approval of the Bureau of the Budget.

b. *Scope.* This Regulation applies to any element of the Air Force which uses Air Force printing equipment or appropriated printing funds for the production of periodicals.

2. Background. The Bureau of the Budget prescribes a uniform procedure for carrying out the statutory provisions governing the approval of the use of funds from appropriations available for printing and binding for the printing of journals, magazines, periodicals, and similar publications. Their printing production is governed by the regulations of the Congressional Joint Committee on Printing. When the approval of either the Bureau of the Budget or the Congressional Joint Committee on Printing is required, an additional 30 days should be allowed for processing.

3. Definitions:

a. *Periodicals*—include journals, digests, magazines, and other similar publications which are issued semiannually or oftener with continuing policy on format, specifications, and content and are designed to disseminate useful information. Periodicals will not be construed to include standard publications as prescribed in AFR 5–5, administrative reports, memoranda, legal opinions and decisions, material which is exclusively statistical, and similar publications.

b. *Printing*—refers to reproduction by those methods which are defined in AFR 6–1 as printing.

c. *Official use*—refers to those copies distributed to offices and officers of the Government and others who have a need for the publication as "necessary in the transaction of the public business required by law."

d. *Free distribution*—includes those copies used for any purpose other than official use and is limited to a maximum of 2,000 copies and to not more than 50 copies to each addressee without approval of Headquarters USAF and either the Bureau of the Budget or the Congressional Joint Committee on Printing, whichever is applicable.

4. Approval of Headquarters USAF. Periodicals requiring Headquarters USAF approval normally will be:

a. Those periodicals wherein a magazine-type format, appearance, or layout of content is used to such a degree that production must be sought from any of the following sources:

(1) The United States Government Printing Office.
(2) Any Government field printing plant.
(3) Procurement of printing on a Government contract.

b. Those periodicals wherein the regular and recurring distribution of copies is to be available in whole, or in part, to elements of the general public such as business, industry, educational institutions, and libraries.

5. Limitations:

a. Periodicals will not contain matter re-

*** This Regulation supersedes AFR 5–37, 1 March 1951.**

rent fiscal funding program to bear the cost of the periodical and also to cover all other printing and binding requirements of the requesting activity. The latter statement should indicate any reprogramming within available funds that the requesting activity plans in order to provide for the periodical. The specific budget projects involved will be identified.

(5) The annual cost of preparing the periodical including salaries, materials, and other expenses properly chargeable to editorial and other than the printing costs covered in b above. Salaries of military personnel will include all pay and allowances.

(6) A statement as to whether or not the establishment of the proposed publication as a periodical will be used as the basis for additional military or civilian manpower requirements in excess of any ceilings in effect on the date of the request for the periodical.

e. *Renewal of Bureau of the Budget Authorizations.* A sample copy of the circularization questionnaire sent out (including material to be returned) for the latest general revision of mailing lists, together with the following information:

(1) Date of last general revision of mailing lists.

(2) Explanation of method used for circularizing.

(3) Number on mailing lists at time of last general revision.

(4) Number of inquiries sent out in connection with revision.

(5) Number who responded asking to be continued on mailing list.

(6) Number who responded asking to have their names removed from the mailing list.

(7) Number who failed to respond.

(8) Number retained on lists who did not respond to circularization, with reasons therefor.

7. Certificate of Necessity. The head of the requesting activity will certify personally in writing to the necessity for each periodical as follows:

I hereby certify that the provisions of AFR 5–37 have been considered, that this request presents all information as required therein, and that I consider the periodical entitled ---------- is necessary in the transaction of the public business required by law of this activity. Date ----------
(Signed) ----------
(Title)

8. Responsibilities:

a. *USAF Printing Committee.* The USAF Printing Committee will:

(1) Establish policies pertaining to the publishing of periodicals.

(2) Determine which periodicals require Bureau of the Budget approval.

(3) Review annually each approved periodical to assure compliance with existing authorization.

b. *The Air Adjutant General.* The Air Adjutant General will receive and forward to the USAF Printing Committee all requests for authority to issue periodicals together with such comments or recommendations as are considered appropriate.

c. *Major Air Commands.* Commanders of major air commands will maintain a vigorous and continuing review of all periodicals to insure that:

(1) Material is confined to that necessary in the transaction of public business.

(2) Periodical is maintained within the limitations authorized.

(3) Duplication of material appearing in any other publication is avoided.

9. Mailing Lists. The sponsoring activity will maintain mailing lists and make necessary revisions at least once a year to eliminate waste in Government funds caused by periodicals being improperly addressed or mailed to persons no longer desiring them.

10. Reports:

a. Each activity issuing a periodical which falls within the purview of this Regulation will submit an annual report containing the following data through channels to reach the Air Adjutant General, Headquarters USAF, Washington 25, D. C., not later than 15 May of each year:

(1) A statement indicating that the activity has complied with the provisions of this Regulation.

(2) A copy of the latest issue of each periodical issued by that activity.

(3) A financial statement for the current fiscal year which compares the actual printing costs, number of issues, number of copies of each issue, and total pages of each issue to those actual authorizations under which the periodical is produced. The actual costs available at the time the report is prepared and an estimation for the

A P P E N D I X B

COPY OF EACH PUBLICATION

INSPECTOR GENERAL UNITED STATES AIR FORCE

IG brief

Volume VI, No. 6 - 24 March 1954

IMPORTANCE OF THE UNSATISFACTORY REPORT SYSTEM

The tremendous administrative and technical workload generated by our expanded Air Force le it necessary to revise the Unsatisfactory Report System so that the flow of data can be expe- the original manufacturer for immediate corrective action. The major revisions are being made vel to improve analysis and expedite solutions for Air Force activities. This effort and the use expensive and complicated aircraft also emphasize the need for commanders at operating level iue to use the UR to the best possible advantage of the Air Force. Following are some sugges- this regard:

¶ When new trouble is encountered, the first step that should be taken is to check ie UR digest (T. O. 00-10-1). By this, it may be learned that another unit has already eported the trouble and that a fix has been developed for it. In that case the fix action hould be taken and a UR submitted as a matter of record. The check may reveal that dditional UR's are not required on the particular trouble, and this will be shown by an ntry in the digest to that effect. In any event, the report should be submitted unless the igest states otherwise; but it is important to know that this check will often provide an nmediate solution.

¶ Use simple and easily understood language. The reason for writing the report s to tell the reader something... not to impress him with the writer's vocabulary or legal ind. It is to tell him what has been found out or what is thought. The best way to get ie point across is to use simple language and short sentences.

¶ Reports should give all known details and information that may be of help in de- ermining corrective action. They should give a brief but comprehensive description of ie difficulty. They should give probable causes, if known, and should cite any failures o follow prescribed operating or maintenance instructions. They should also give a brief esume of any corrective action taken and should include any recommendations considered ppropriate. Sketches and drawings should be included when it is thought that they will e of help. These need not be elaborate, only understandable.

¶ Probably the most important phase of UR processing is in their review and in- orsement. It is in this phase that the know-how and experience of older heads can be of reat help. Here, the best qualified people of the base or headquarters should do all they an to solve or more clearly describe the problem. They may know something that will orrect the trouble. If not, they may at least know something that will help the initiating nit live with it until final correction can be made. They may recognize that the trouble as far greater significance than the report indicates. They may have more aircraft under ieir jurisdiction than were in the initiating unit and the presence or absence of the trouble the additional aircraft may give a clue as to how widespread the trouble really is. If nly one out of five using units has knowledge of the trouble, one of two things may well e happening. First, the trouble may actually be occurring in the other four units but ot in such a way as to let them recognize it. If this is the case, it will be necessary to lert them to the trouble so they can operate and maintain their aircraft accordingly. The econd thing that may be happening is that the trouble is actually isolated to only the one nit and its operating or maintenance practices may be causing it. It is particularly im- ortant that reviewing and indorsing offices be alert to this latter possibility for much time an be wasted looking for trouble in the equipment when it actually lies in poor using or pkeep practices. Regardless of the corrective action taken by the indorsing headquar- ers, the UR should still be forwarded through prescribed channels with full information hown as to the action taken and further action recommended.

Our UR System provides a means by which a man with a problem can describe it to someone who something about it. The present system, with its forms and procedures, is described in Tech- rder 00-35D-54, dated 25 November 1953. There is much to be gained by modernization and ization of the UR System, but its effectiveness will continue to depend upon the manner in which e prepared and indorsed at operating level.

RSONNEL AND ADMINISTRATION

PAYMENT OF DEBTS

Some complaints received in Headquarters USAF are from creditors who are anxious to settle ich they claim are owed by military personnel. Although most of these complaints have not been ted to determine their validity, they nevertheless give a bad impression of service personnel.

The Air Force expects its personnel to pay their just and legal debts promptly, to the best of lity. Although the financial affairs of officers and Airmen are of a private nature, and as such ıe scope of military authority, they must be conducted in a manner which will not reflect dis- on the service. As pointed out in AFR 24-1, no law or regulation requires that Federal pay be to satisfy private indebtedness nor that servicemen take specific action with regard to their activities. However, nonpayment of an acknowledged debt without good cause is a reflection service and may result in disciplinary or administrative action, as required by the Manual for Iartial, United States, 1951. Such action, when taken, is for the good of the service in the fur- of military discipline and does not guarantee settlement of the obligation.

Correspondence from creditors should be handled expeditiously. The individual involved should iewed and counseled on Air Force policy regarding prompt settlement, and informed that non- ıt without good cause could result in administrative or disciplinary action. It is the responsi- he commander to evaluate each individual case and to determine whether such action is merited. n to positive corrective action where indicated, it is recommended that commanders consider ventive measures as are possible through their I&E programs and other local facilities.

TEMPORARY PROMOTION CYCLE - FY 1954

The part that seniority plays in the consideration and selection of officers for promotion is ex- ı AFR 36-89. Officers are promoted by seniority increments in accordance with AF policy of precedence in rank.

In some instances, dates of rank for Regular and Reserve officers have not been computed In one case, eligibility for promotion and seniority was based on the Regular officer's date his permanent grade rather than his temporary grade. This is a violation of proper rank and ;e of officers being promoted, and defeats AF policy of achieving proper sequence of promotion ts.

t is strongly recommended that each officer familiarize himself with AFR 36-89, review his records and certify that dates of rank are accurately computed. This will assure conformance ıFR and eliminate administrative errors in machine reporting and publication of Special Orders.

DOCUMENTS OF NATURALIZATION

ı recent violation of section 1426(h), Title 18, U.S. Code, points to the need for commanders ze this section within their organization:

"(h) Whoever, without lawful authority, prints, photographs, makes or executes ıny print or impression in the likeness of a certificate of arrival, declaration of in- ention to become a citizen, or certificate of naturalization or citizenship, or any part hereof --

"Shall be fined not more than $5,000 or imprisoned not more than five years, or ıoth."

ECONOMY IN CORRESPONDENCE

An article published on page 5, TIG Brief No. 2, called attention to the waste which is caused eparation and forwarding of excessive copies of correspondence. Although it was not pinpointed, refers only to communications which are sent to one addressee, or those which are received in rters USAF after going through channels. It should be noted that paragraph 4, Chapter 5, AFM rmits the originator to use his judgment in determining how many copies should be prepared of ndence which is sent through intermediate headquarters to several addressees.

AF REGULATIONS

1 1954 S AND PROCEDURES D TO AIR FORCE PUBLI- AND PRINTING	Governs AF printing and related activities. Brings AFR in line with most current "Joint Committee on Printing, Congress of U. S." (D - Supersedes AFR 6-1, 5 May 52, as amended)
ance) 1954 NEL RESEARCH TESTS THE AIR FORCE	Establishes 2200th Test Squadron, Mitchel Air Force Base, N. Y., which will design, develop and initiate procurement of new and revised AFPRT's. Provides up-to-date security requirements for handling and storing AFPRT's classified as Controlled Items. D - Supersedes AFR 9-3, 1 Nov 53)
dvance) 1 1954 SING OF COMMUNICATIONS DEPARTMENT OF THE CE	Revises attachment which lists mailing addresses of DAF offices. Redesignates Director of Installations as Assistant Chief of Staff. Installations. (D)
dvance) 1 1954 GIC AIR COMMAND	States mission and responsibility of SAC. Adds primary responsibility of supporting AF prestocking program to include indoctrination of personnel and receipt, storage, rotation and maintenance of materiel, reserve equipment and supplies provided in support of current war plans. (D - Supersedes AFR 23-12, 6 Sep 51, as amended)
vance) 1 1954 CE SPECIAL S PROGRAM	Covers policy, scope, mission and responsibilities relating to AF Special Services Program. Instructs base Special Services Officers to keep abreast of open mess and base exchange activities in addition to their other normal duties. (D - Supersedes AFR 34-9, 11 Sep 50)
1 1954 CE SPORTS PROGRAM	Incorporates message AFPMP 426/54, 26 February 1954, which required that AFB basketball, baseball, football and softball teams be composed of no less than 50% enlisted personnel during the regular season. (D)
1 1954 IENT AND ACCOUNTABILITY FORCE RESERVE PERSONNEL G OVERSEAS	Regulates accountability of all AF personnel residing overseas and the transfer of certain of their records between ConAC and major oversea commands. Lists specific major command jurisdictional areas overseas pertaining to Reservists not on EAD. (X - Supersedes AFR 35-64, 4 Mar 53)
dvance) 1954 CE PERSONNEL ICATION BOARDS	Establishes policy and procedure for operation of AF personnel classification boards. Provides that: a master sergeant may serve as a voting member in cases involving Airmen; WAF member is no longer required as voting member in cases involving WAF. (D - Supersedes AFR 35-391, 3 Jan 52)

AF REGULATIONS (Cont'd)

1954
UTED AND
:PART FUNDS

Prescribes accounting for contributed and counterpart funds made available to USAF under MDAP. Makes changes in suffix limitations used with MDAP appropriation symbol. (E;F;X - Supersedes AFR 177-24, 3 Feb 54)

AF LETTERS

954
MAT FOR
E LETTERS

Discontinues Decimal File Letters as a category of standard AF publications. They will now be published as AF Letters, but in a different format. (Distr includes all commanders)

AF MANUALS

ınce)
4
TION OF INDIVIDUAL
MENT FOR OVERSEA
NT (POR)

Establishes procedures to be used in preparing individual personnel replacements for oversea movements. Formalizes requirement that personnel processing groups will handle 500 assignees per day. (Distr includes Squadrons - Supersedes AFM 35-6, 1 Apr 52)

lo. 9)
)54
ARD ALLOCATION
)S

Transmits family and series definitions and standards within textile and leather work job family (WB31); and Aircraft Storage Condition Inspector Series (WB88 - 60) which is within aircraft overhaul job family. (WB 88) (Special distr)

ıdvance)
.954
ATION, FUNCTIONS
'ONSIBILITIES OF
OFFICERS

Amends basic AFM with regard to: Indorsement and deposit of public funds (par 30363); stoppage of payment of checks (par 30431); and definition of "agent officer." (Distr includes bases, ZI and overseas)

Advance)
.954
IG ACCOUNTING
RES

Eliminates requirement for devaluating foreign currency holdings on "Report of Foreign Currency" since balances are now expended at acquired exchange rate. (Distr includes AF bases in ZI and overseas)

lvance)
954
L SERVICE

Increases distribution of the AFM from 1 to 3 copies per Squadron. (Distr includes Squadrons ZI and overseas)

DECIMAL FILE LETTERS

3. 5 (Advance)
.954
COPYING,
ATION AND
F RECORDS

Contains forms and schedules for accomplishment by major air commands to assist DOD in establishing a standard schedule of fees for services rendered the public involving copying, certification and search of records. (Distr includes major air commands)

BRIEFS OF AIR STAFF MESSAGES

1/54, 26 Feb 54 - Prohibits, effective 1 July 1954, wearing of "US" insignia (or any re- on collar or lapel or Air Force uniforms, except by basic Airmen and officer candidates.

3, 436/54, 4 Mar 54 - Amends paragraph 10a(2), AFR 36-90 to state that relative seniority "Date from date of Reserve appointment as WO for CWO."

AF REGULATIONS (Cont'd)

.954
E RELATIONS WITH
CHNICAL COMMITTEES

Guides AF activities requiring representation on Army Technical Committees. States that Commander, ARDC will now designate AF member of Army Signal Corps Technical Committee; AF representatives to all other Army technical committees will participate as informed observers. (E - Supersedes AFR 80-25, 10 Oct 52)

.954
, STANDARD ON
TION LIGHTING

Governs lighting of obstructions to air navigation at all AF installations. Limits lighting to objects which penetrate the maximum permissible heights tabulated in AFR 86-3 and to objects which by nature and location are hazardous to air navigation. (E;F - Supersedes AFM 91-14, 7 Oct 48, as amended)

AF MANUALS

)
y 1954
PLY MANUAL
ENT SHEET No. 3)
TE CHANGE")

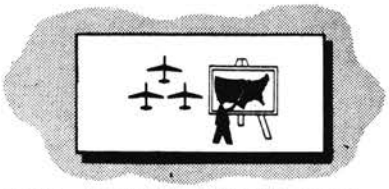
Eliminates certain depot stocks of local purchase items. (Distr includes Groups ZI and overseas)

II)
y 1954
PLY MANUAL
ENT SHEET No. 4)

Provides procedures for: processing of oversea requisitions received, citing project code 47 (par 5f, Sec 18); and submission by oversea activities of requisitions for initial build-up stocks to support newly assigned aircraft not yet received. (Distr includes Groups, ZI and overseas)

I)
1954
LY MANUAL
ENT SHEET No. 1)

Permits ANG base Supply Officer to make disposition of property considered fair wear and tear without aid of AF inspector; makes other procedural changes. (Distr includes Groups, ZI and overseas)

PERATIONS  & TRAINING

WALK-AROUND CHECK LIST

ıe of the basic requirements for accident prevention is the pilot's walk-around inspection prior Many Air Force pilots and crew members go through the motions of a walk-around inspection nake a thorough survey of their aircraft. A walk-around inspection check list is an excellent ı making a comprehensive examination of the aircraft, and will help insure that all necessary ncluded.

check lists are not available, their compilation is a relatively simple matter and they can be ocally for appropriate aircraft types.

ACCIDENT PREVENTION

ıe fact that modern aircraft are more complicated, cost more, and carry more passengers, ore necessary that every effort be made to prevent an accident.

ı special precautions taken locally include checks to assure that all pilots who carry passenell experienced in the type of aircraft they are flying?

GROUND SAFETY

TEN COMMANDMENTS OF SAFETY FOR SUPERVISORS

Your job in management places you in a unique position of trust. For not only does the com- / on you, as the direct representative of management, to apply its policies wisely and fairly; usted to you is the obligation to safeguard the well-being of the workers in your charge. No)ility transcends this in importance. In this respect your job is akin to the "stewardship" of ays: As a supervisor, you are indeed your brother's keeper.

On-the-job accidents represent a serious threat to the physical well-being of your men. Their n calls for your constant vigilance. Therefore, if you would guide your men safely through y work, be yourself guided by these precepts:

1. You are a supervisor and thus, in a sense, have two families. Care for your people at work as you would care for your people at home. Be sure each of your men understands and accepts his personal responsibility for safety.

2. Know the rules of safety that apply to the work you supervise. Never let it be said that one of your men was injured because you were not aware of the precau- :ions required on his job.

3. Anticipate the risks that may arise from changes in equipment or methods. Make use of the expert safety advice that is available to help you guard against such new hazards.

4. Encourage your men to discuss with you the hazards of their work. No job should proceed where a question of safety remains unanswered. When you are re- :eptive to the ideas of your workers, you tap a source of first-hand knowledge that will help you prevent needless loss and suffering.

5. Instruct your men to work safely, as you would guide and counsel your fam- ly at home -- with persistence and patience.

6. Follow up your instructions consistently. See to it that workers make use of the safeguards provided them. If necessary, enforce safety rules by disciplinary action. Do not fail the company, which has sanctioned these rules -- or your work- :rs who need them.

7. Set a good example. Demonstrate safety in your own work habits and per- sonal conduct. Do not appear as a hypocrite in the eyes of your men.

8. Investigate and analyze every accident -- however slight -- that befalls any of your men. Where minor injuries go unheeded, crippling accidents may later strike.

9. Cooperate fully with those in the organization who are actively concerned with employee safety. Their dedicated purpose is to keep your men fully able and on the job and to cut down the heavy personal toll of accidents.

10. Remember: Not only does accident prevention reduce human suffering and loss from the practical viewpoint, it is no more than good business. Safety, there- fore, is one of your prime obligations -- to your company, your fellow managers, and your fellow man.

By leading your men into 'thinking safety' as well as working safely day by day, you will win full support and cooperation. More than that, you will gain in personal stature. Good men do it for a good leader.

C H E C K L I S T

UNIFORMED SERVICES CONTINGENCY OPTION ACT OF 1953

MISSION: To permit members of the Service to elect certain contingency options, enabling them to use part of their retirement pay for the benefit of their survivors.

1. Have procedures been established to counsel personnel who must select or decline an op- 30 April 1954?

2. Does the procedure include personnel who are in a pipeline status, hospitalized (including in VA hospitals) on leave or in travel status including TDY; those stationed in isolated areas uments at operating locations away from parent units, including mission, attache, OSI person- individuals in an awaiting-orders status?

3. Have procedures been established to counsel Air Force Reservists not on active duty who pleted or will complete 18 years creditable service for pay purposes on or before 30 April 1954?

4. Has a control system been set up to counsel members as soon as they become eligible to election?

5. Are counselors advising each eligible member that if he declines or fails to make an election time limitations specified, he may not thereafter be covered by any provisions of the Act?

6. Are eligible members informed that the decision whether to make an election is the respon- f the member concerned?

7. Are eligible members advised that hasty election of options may prove costly to the member d?

8. Do eligible personnel know that no annuity payable under the Act will be transferable either equity, or be subject to execution, levy, attachment, garnishment, or other legal process?

9. Are retired members advised that they may not modify or revoke their election?

0. Are eligible personnel informed that dependents acquired after retirement are ineligible for nder the Act?

1. When a modification or a revocation of an original election is made by an active member, etails involved explained fully?

2. Are eligible members advised that notification of a change of dependents is not a modification ction?

3. Have eligible personnel been told that annuities under P. L. 239, are in addition to any pen- ther benefits that the beneficiaries may be entitled to?

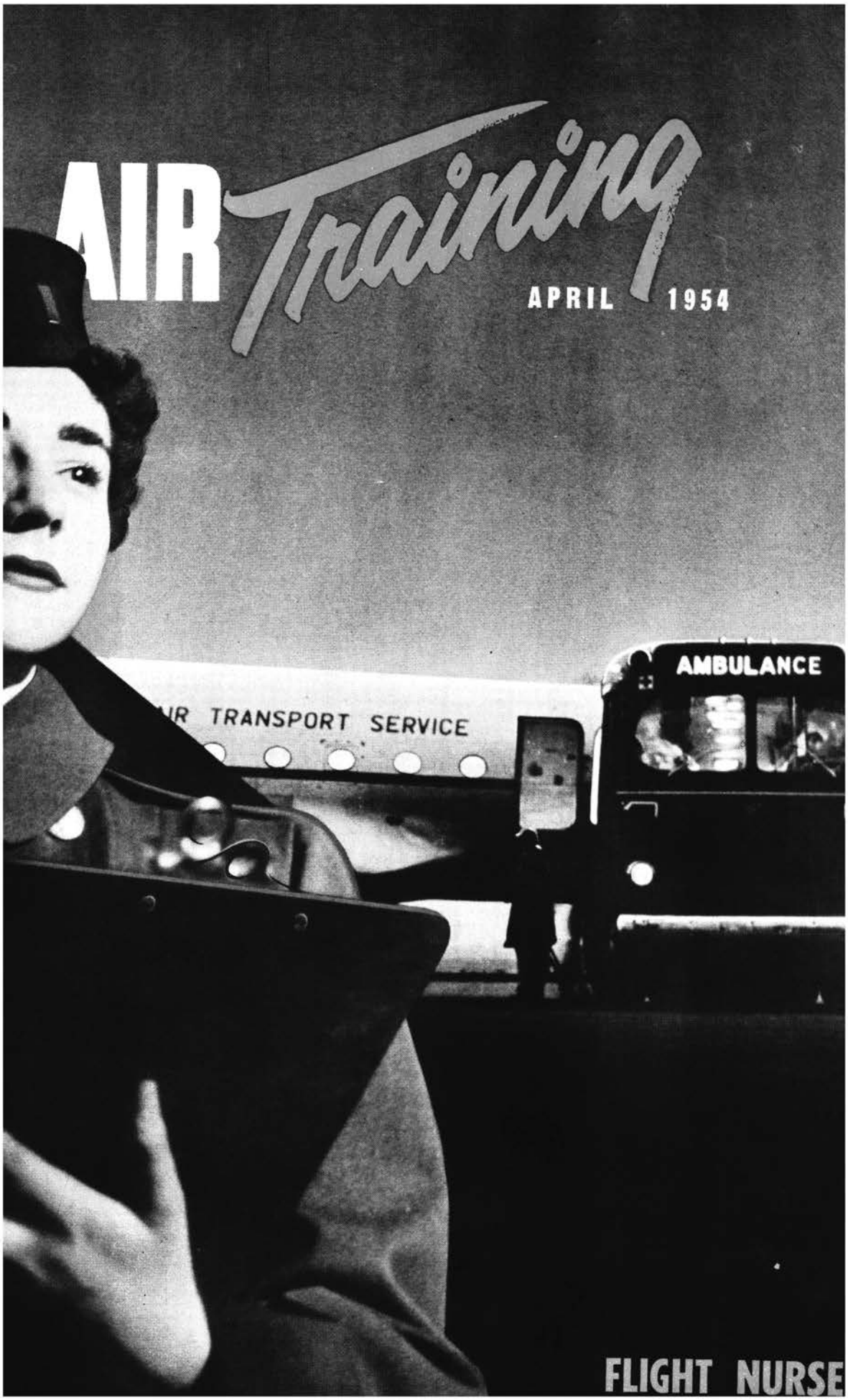
4. Are all eligible members aware that counselors will assist in computing only approximate of participation in the Act?

5. Have counselors been instructed to refrain from making recommendations or giving person- ns regarding P. L. 239?

6. Are the following publications used by counselors:

(a) AFR 34-63, 27 Jan 54
(b) AFP 34-4-6, 15 Jan 54
(c) Tables of Percentage Reductions of Retired Pay and Conversion Tables under the Contingency Options Act of 1953, 1 Nov 53.

7. Are sufficient quantities of AFP 34-4-6 and AF Form 806 on hand for use by every member e than 17 years service?


AIR Training
APRIL 1954
AMBULANCE
TRANSPORT SERVICE
FLIGHT NURSE

what about rotation?

N: that's when you
m one job to another,
se to a new one, from
d to another, from ZI
ınd so on. It happens
. airman or officer
place of assignment.
me into the service you
n" and when you leave
:ed out."
en like it—to them it's
vantages of service life.
a nuisance; they rotate
f it.
problem, then? Why
n rotation for people
t, give it to the ones
To get the latest word,
› the personnel plan-
ate at ATRC Head-
is group has just com-
:y. Here are some an-
questions most often
estly perplexed airmen
e personnel planning
who were not unper-
lves when they started

* *

:mful about rotation? mplainers would be pleased to know that the Air Force worries more about rotation of its personnel than even the most chronic stay-at-home airman, or his wife.

Every rotation costs money and time. Money includes travel pay, transportation for goods, dependent travel and the like. And not just for one man, but for two. Every time you pull one man out of a unit you have to move another man in. Time spent in travel means days and hours when an individual isn't doing his job. He loses more days when he is out-processing, in-processing, looking for family quarters, and getting used to his new job.

Meanwhile, the unit is suffering. No commander likes to lose a good man no matter who his replacement is. And an unstable organization is not a combat-ready outfit. Problems in the orderly room or out on the flight line mean a headache for everyone, not to mention extra hours of work.

Then why rotate at all when you can avoid it? The answer isn't "because it's always been done that way." The main reason is that a military organization—squadron or command headquarters—is flexible. It has to stay that way. It is always changing size, changing missions, keeping up with the national policy.

In just the last year, you've seen the Air Force receive orders to cut back drastically, then to expand heavily. Every time this happens, people have to move. When people leave service, they have to be replaced. When an organization is cut back, or expanded, this sets off a chain reaction all the way up and down the line.

Since the mission comes first, rotation has to be continued.

Then again, about a third of the Air Force is overseas. Some of those assignments are real beauties. You've heard stories from grizzled master sergeants about wonderful climates and lovely native girls. But some of the bases overseas are in just about the worst places you could pick if you got out an atlas and tried.

Because we are busy defending the free world, that's where we have to go. But you can't say you're fair if

:sler and Lackland and
s in other commands.
ing rotated, and there
olicy you could think of
solve the problem. The
be filled and that's that.

n't the Air Force intend hing to assist stability? Air Force is still thinking ose harmful things men- the start. It's obvious should be taken. And s being done.

Just recently major air commands were given the right to extend overseas tours up to 48 months for men who volunteer. That will help people who like their overseas spot and the ZI personnel who would have had to take their places.

You have probably noticed the recent directives that allow certain categories of men returning from overseas to choose the bases at which they would like to serve out their tours. That's also part of the in creased stability move.

Instructors in ATRC now get stated tour in many cases; durin that time they cannot be rotated

The problem is to balance th need for stability against the nee to perform the mission, and the mis sion has to come first.

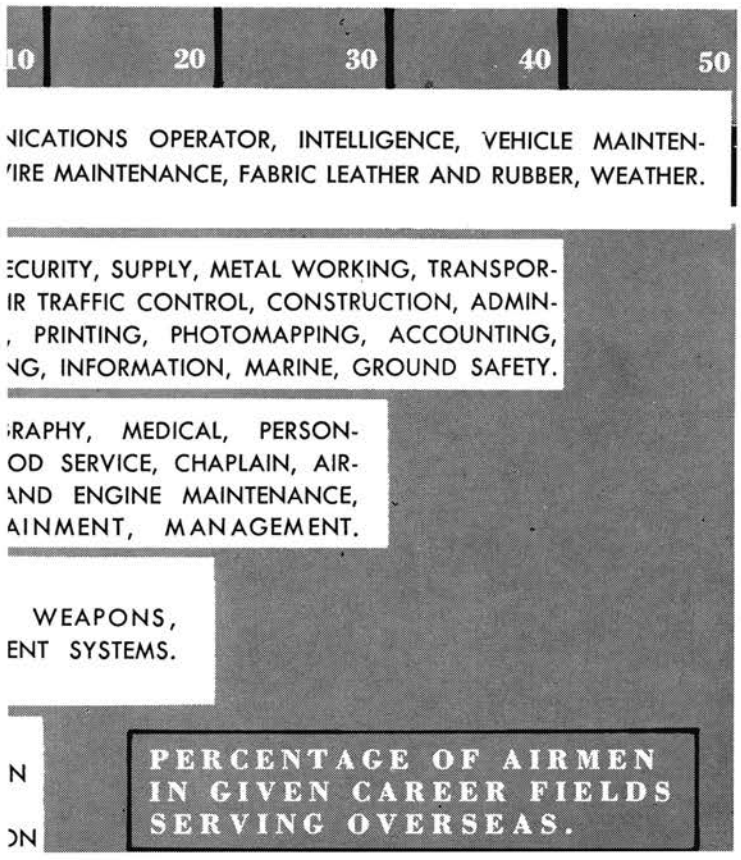
How does ATRC stack up agains other commands? Just about ever The majority of officers and airme have served continuously in the Com mand for 29 months or more. In given three year period, an airma could expect to move once, an office twice (that's permanent party).

So, what's the answer? You ca figure what your rotation problem will be by looking at your caree field. That's a major factor. If lot of people in your field are overseas you will move around—even if yo never get overseas yourself.

And remember the results of shift in national and international affairs An expansion means new units, an that means changes of station fo many people. A reduction mean the same thing.

Other than that, there is no fina solution. As a matter of fact, if yo think of one, you might as well star packing for a rotation. They'll hav you in the Pentagon in no time working it out.

★ ★ ★



THIS Month

LT. GEN. ROBERT W. HARPER, commander of ATRC, has requested retirement effective on 30 June. A 1924 graduate of West Point, General Harper has commanded ATRC since 1948. Prior to that he directed the Air Transport Command and Air University Command. Under his direction ATRC expanded quickly from 17 to 43 bases after the outbreak of the Korean war.

cadets

AVIATION CADETS from MDAP countries will now be taking a combined training and language course for their Pre-flight training. A student will not have to stay the full course. As soon as he shows proficiency in English he goes directly into Primary flying training. Previously, MDAP students studied English and then went into the Pre-flight course where they joined American students and went all the way through. The two groups will still participate jointly in some activities.

flying and observers

FOSTER AFB, TEX., will go to Tactical Air Command about 1 July. Its basic single engine course is now being phased out.

MODIFICATION KITS for the T-33 jet trainer start arriving this month. They will improve stall and spin characteristics of the aircraft. Training Air Forces will evaluate to see if spin recovery techniques can now be included in the basic single engine jet course.

USAF GUNNERY MEET will be held at Nellis AFB, Nev., 7-13 June. ATRC will host the huge Air-Force wide competition, first of its kind in several years. Aircraft from many other commands will participate. Elimination meets will be held by major commands prior to the June date. ATRC's meets are scheduled at Tyndall and Nellis this month.

TRAINING in the F-84F will begin in advanced flying course in July. ATRC is one of the first commands to get this brand new aircraft.

CONVERSION TRAINING for Tactical Air Command pilot-observer teams will start at Randolph AFB, Tex., about January for the B-57 (Canberra), USAF's new medium jet bomber. Once the course gets well under way some basic multi-engine and basic observer graduates may go right into advanced training.

ENLISTMENT RATE took an exmp in January to 34.2% from the Dew of 27.6%. January saw the largest f separations since February 1953. Reae expectation: December also had a high rate and many airmen take a big chunk ssible 90 days before making up their return to service. Then they can still grade.

SQUADRON FIRST SERGEANTS will be able to read the just-completed study on their jobs and on NCO prestige in general this month. The study has been completed and is being distributed down to squadron level so NCOs can see it. It discusses in detail the role of the First Sergeant in the Air Force, the decline in NCO prestige, and recommendations for improving the position of present-day noncoms.

of interest to you

TIONS ON OERs (AFR 36-10) is bed by USAF. New reg will be available Meanwhile ATRC is readying an educaam on the preparation of the effectivet.

NG 1 JULY officers and airmen will stop ne "U. S." brass altogether. Only peoill wear it, under present plans, are basic fficer candidates, and aviation cadets.

MMISSARY SURCHARGE of five per down to three and a half per cent this

ND AFB, TEX., will host the interserv- tournament in May. It will also be Air Force tourney earlier in the month. B, Miss., will have the Air Force tennis August, while Scott AFB, Ill., will run rce baseball finals in the middle of Sep-

CANDIDATES are now receiving two udo instruction per week.

XPIRATION of the Armed Forces Cerct this month, more stringent pre-World es go back into effect on officers' ability pay and allowance vouchers. Bases will certifying officers to sign certain forms ers. Reserve officers will now need a of service for longevity pay increases and affidavits will be necessary to certify dependents travel on PCS. Officers will still be able to certify individual travel or per diem requests, however.

UNIFORM CHARGES for cashing checks at base banking facilities go into effect this month. One rule: except for checks belonging to the bank itself or other local banks, cashing a check will cost you ten cents—unless you are hospitalized.

FINANCE CENTER has done away with the stoppage circular. If your pay is halted for any reason, word will be sent directly to the officer who holds your record, instead of being put out in the Air Force wide circular.

RETURNS must be made by 1 May by people with over 18 years of service who want to participate in the Uniformed Services Contingency Option Act. This is a means of paying an allowance to dependents from your retirement pay. Forms have already been sent out.

FILMING of a series of scripts to assist in training of basic airmen is going on at Lackland AFB, Tex.

A REPORT of family housing conditions at ZI installations as of January showed 14 of ATRC's bases in the "A" category (Adequate family housing readily available at reasonable rents. Families can safely accompany personnel transferred to these stations): Amarillo, Bryan, Ellington, Goodfellow, Hondo, James Connally, Lackland, Randolph (officers only) and Reese, all in Texas, plus Keesler AFB, Miss., Parks AFB, Calif., Vance AFB, Okla., Francis E. Warren AFB, Wyo. (officers only), and Williams AFB, Ariz. Only base in the D category (Adequate family housing almost non-existent; personnel should not expect to bring families at all during a tour) was Bainbridge AFB, Ga. Rest of the bases fell in the medium range—limited and costly in many cases.

ARCTIC ADVENTURE

the first Americans to land an airplane on the North Pole were there to make an ally of the earth's ice womb.

story by M/Sgt. Edison Blair

IT was cold in the airplane. The cold seeped through the five layers of clothing I had on and I wriggled my toes to keep them warm inside the three pairs of socks and the canvas mukluks. There was also the cold of fear that had come when the steady roar of the C-47's engines had changed as the nose dropped toward the sunlit snow that covered the jagged blue chunks of ice a few thousand feet below. Fear of the unknown, and the relentless cold of the Arctic in case anything happened to the plane.

Within a few minutes we would be the first Americans ever to land in a plane at the geographic North Pole. We would land—even if we didn't take off again—because the pilot was Lt. Col. William P. (Benny) Benedict. Benny could make an airplane do anything he wanted it to do. He was the legendary pilot who had put skis on a crashed F-94 so he could fly it home out of

illustrations by A/2C Hubertus von Zitzewitz

of high octane spilled on the cabin floor before we could s cap . . . a spark at that moment would have been fatal."

The rest of us laughed 230-pound Fritz Awe, ılky Arctic clothing, first he little bulldozer. He g over the seat, he near- hole machine.

pilot also brought word ıl Old to broaden the from the ice-island—be- the North Pole itself. to make a ski landing ke depth soundings, get ınd any other informa- ght be useful. I had) go with them. The ıt to the pole was un- the pilot nosed the ski- own close to the snow k.

* * *

e two kinds of ice cov- cold black waters of the The bright blue fresh broken off from the ush out from the lands Arctic. These chunks from small icebergs to ating islands, 200 feet -3, or T-1, which are size of the island of Pacific. The rest of ozen sea water seldom or 15 feet thick.

Terrific storms and tides crack the surface and open "leads"—stretches of open water — that remain for hours or days, then freeze over. Sometimes the open edges are driven together by wind or tide until they buckle and pile up into rough pressure ridges. Sometimes a lead freezes over lightly and wind-blown snow covers it. A man stepping on one of these blind leads can crash through into the frigid waters. Others are frozen more solid and make good landing spots for planes equipped with skis, as ours was. But only experienced pilots attempt anything but a crash landing on such a surface.

Our pilot from the 10th ARS was experienced enough to know that the jumbled pressure-ridged ice wasn't safe enough for a landing that day, and we headed back south. It looked like the Pole landing was washed up, and I didn't quibble when it was decided that I should return to Alaska because there were too many mouths to feed. I looked forward to the hot showers, clean sheets and hot meals.

* * *

WHEN I got to Thule I found out there wasn't enough room aboard the C-47 for both me and enough gasoline to make the 2,50(miles to the nearest refueling stop at Barter Island, Alaska. So I wasted four more days at Thule before thumbing a ride home. I returned to Elmendorf AFB around midnight Saturday and was still asleep Sunday morning when the CQ awakened me at 1100 with a message from the Chief of Staff.

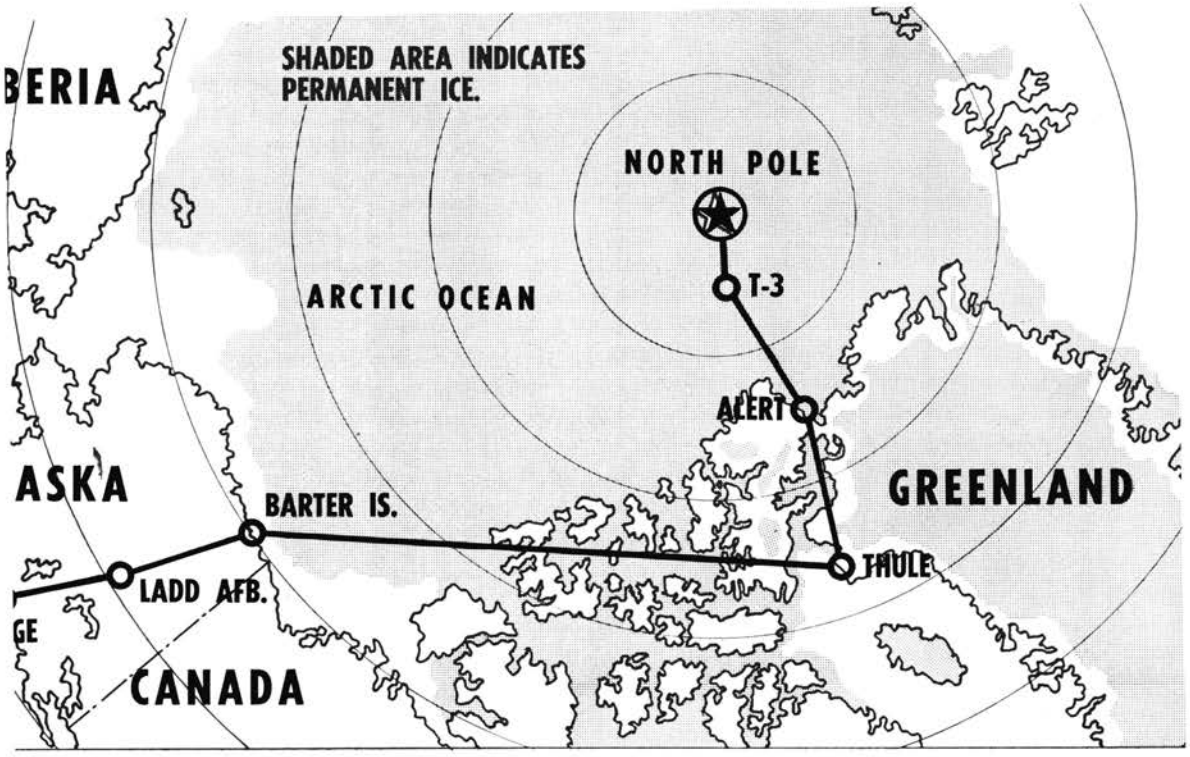
The message said that a plane was getting ready to fly me to Fairbanks where Colonel Benedict was waiting impatiently. We were going to try the Pole landing again. Benny had come back from the ice island four days earlier and had sold the General on letting him try the landing. He had kept the hangar crews busy day and night putting a new type of ski on a C-47 and installing a 450-gallon "Tokyo Tank" in the fuselage to insure us enough fuel for the final jump to the Pole.

I hurriedly borrowed clean woolen underwear and socks from barracks mates, stuffed them into my bag with the rest of the Arctic clothing I had pulled off the night before, and headed for the flight line. There I learned that I had missed a radio message telling me to wait in Greenland, and Benedict and I had passed each other going in opposite directions the night before. The control tower had stopped Benedict's take-off from Ladd AFB that morning when General Old found that I was back in Alaska. If it hadn't been for the General I wouldn't have made it.

* * *

WE radioed Colonel Benedict our ETA when we started the letdown into Ladd. As we hit the runway I could see the red-tailed C-47 with its ungainly skis, squatting duck-like on the concrete ramp. Benny already had the engines running. We taxied up directly in front of it and stopped just long enough for me to drag my heavy bag out and into the waiting goony bird.

Two minutes later we were airborne and climbing toward Barter Island on the Arctic coast of Ala-



) THE POLE: the face of the deep was frozen.

natural conditions and derstand her."

* * *

A delayed operations for lays after we reached ınd, so we helped catch ɔ chores. The rest of restled gasoline and oil . the drop area up an e camp where we could ter the storm blew itself : house and cooked. I :nter's saw to cut thick the frozen beef stored ıture's deep freeze. We in a small oil range to tent stove and the one ine stove. The range ooking hut so well that my woolen undershirt egree heat.

* * *

:unny, but there really ı snow during these Arc- What there is, falls in ıgar-like granules. The stops and when you the only sound in the lness is the swishing of '. Sometimes you can't feet through the wind- v. Once in a while you n you try to step on this blowing snow, six inches off the surface of the crust underfoot. At these times the sky and snow blend into one and there is nothing but white in the world. White from the glaring 24-hour sun right down to your feet—there is no horizon and no direction. Pilots have been tricked into trying to land on this kind of moving snow. They call this phenomenon a "white out."

Snow drifts at the slightest excuse. A chunk of hard snow the size of your hands builds into a snow drift four feet deep while you watch. Friction warms the snow crystals and the instant they stop moving they freeze into hard crusts. The hardness depends on the amount of friction. These gently rounded hummocks cast no shadows in the harsh sunlight and the surface looks smooth to the inexperienced pilot.

* * *

OVER the steaks and cups of steaming black coffee from the two-gallon pot on the stove, Benedict, Awe, Fletcher, and "Doc" Crary, the civilian scientist from the AF Research Center, talked over the proposed flights and what they wanted to look for.

Benny and Fritz compared notes on the short field ski landings and take-offs they had made. They discussed the things they had noticed about the pack ice—the texture of it its probable strength, the color of fresh and salt water ice, the difference in appearance of freshly frozen leads and the older ones solid enough to support a plane. Doc Crary had collected data on glaciers and the pack ice for years—he knew ways of telling their thickness, how deep the snow was and whether or not the crust was hard. They checked with Thompson on the angle of the sun and the relationship between shadow length and the height of the pressure ridges. There would be a smaller margin of chance in the landing than had appeared at first.

It was about 0130 of 3 May when we left Fletcher Island on the second try. An hour later we started letting down toward the Pole. A hundred feet off the ice, we circled a wide dark gray lead—frozen over so recently that the storm hadn't blown snow over it. Benny called Doc up to the cockpit and asked his opinion. "Too green," Doc decided, and the clumsy plane, barely keeping flying speed, swung over toward a relatively smooth ice floe that Fritz

CADETS, secret service men, and news cameramen all focus their attention on senhower. ATRC will again host the President and his party this summer if he racation in Denver. Lowry AFB last year served as the summer White House.

next--the President?

Air Base, one of ATRC's imary schools, had been a rash of brass. As two it the base recently, one ked: "Who's next — the

nours later President Eis- plane, The Columbine, did ence. The Commander- s on his way to visit Secretary of the Treasury George M. Humphrey's plantation for a weekend of quail shooting. Spence personnel and their families turned out en masse for the arrival.

Four days after the President's departure, cadets were lined up on the ramp again. This time Secretary of the Air Force Harold Talbott, and two other cabinet members, Attorney General Herbert Brownell an Secretary of Commerce Sincla Weeks, deplaned. They, too, wer bound for the Humphrey estate. Bu Secretary Talbott cut his holida weekend short to make an inform inspection of the contract school.

Spence cadets now keep a hig polish on their shoes at all time They don't know who to expect nex

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nts to be loved

A Scott AFB airman glows red as screen star Debbie Reynolds serenades him with "I Wanna Be Loved by You." Miss Reynolds and actor Vincent Price were two of the headline entertainers on hand for the base's annual GI Pal dinner, sponsored by nearby Belleville, Ill., citizens.

HE HUMP: the impossible was done regularly.

ved that jet-fighter air-
fly nonstop to overseas
ing in-flight refueling.
E Thunderjets left Man-
ıd, at 1801 hours on 22
Exactly ten hours and
later, one of them set
imestone AFB, Maine.
Thunderjet had to be
when its refueling appa-

e the flight, MATS Air
rvice had made twice-
sts covering the entire
ng the flight, ever-chang-
information was relayed
he pilots by MATS Air-
r Communications Serv-
ATS Flight Service sta-
ct contact between all
ıt's control points was
ver telephone and tele-
Theoretically, the flight
nore than ten minutes
ashington control point.
aircraft and a group of
strung along the over-
om Prestwick, Scotland,
Bay, Labrador. These "homing stations" also furnished protective rescue coverage for fighters.

An ARS helicopter picked up the second pilot near Goose Bay after he bailed out of the Thunderjet. The rescue unit reached the ditching scene within two hours.

* * *

MATS has played the role of international diplomat many times in its short history. It has provided rescue and search service for civil and military airlines of other countries. Probably the most unusual "rescue" and good will service MATS handled was in 1952 when it provided a magic carpet with bucket seats for almost 4,000 stranded Moslem pilgrims.

It is a Moslem's duty and privilege to visit Mecca (birthplace of his prophet Mohammed) at least once during his lifetime, no matter how far he may have to travel. Although he can make the pilgrimage any time during the year, most Moslems plan on the Id al-Adha or "great" pilgrimage. This is made at exactly the same time during the year that Mohammed made his last pil grimage to Mecca in 632 A. D.

In order for the pilgrimage to b complete, the pilgrim must be ir Mecca on the same day Mohammec made his farewell sermon.

In August 1952, with the pilgrim age only a few days away, it wa feared that several thousand pilgrim would not reach the Holy City ir time. In ancient days, the pilgrim traveled by sea, camel and donkey In 1952, all these means were used but many of the 500,000 had planned to travel by air. The Middle East airlines did their best, flying many thousands of pilgrims to Jidda* from all parts of the Moslem world. But there was not enough space for all of them. Nearly 4,000 were stranded in Beirut, Lebanon.

The government of Lebanon joined the airlines in an appeal to the United States for assistance. Help came—14 MATS C-54s.

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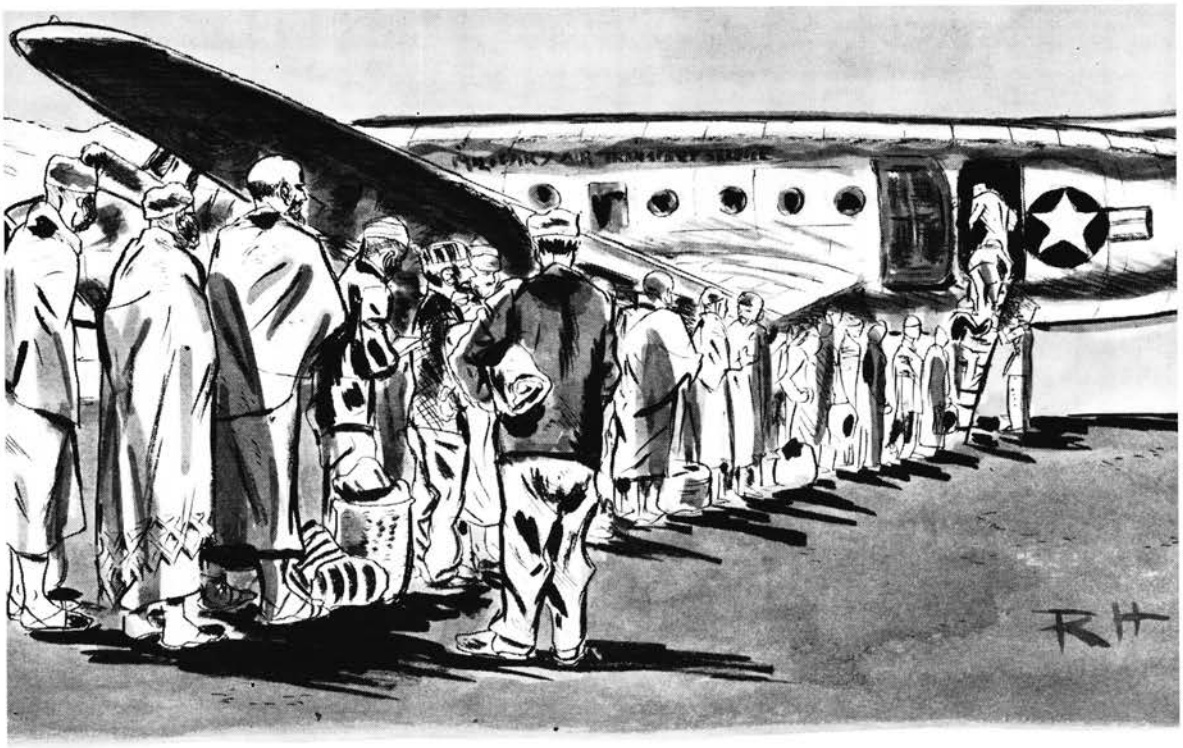
*Jidda is 45 miles from Mecca and the only city in that region with an airfield.



GIC CARPET TO MECCA: bucket-seat diplomacy.

aiting for take off. The over almost as soon as Within minutes, the Yaks

A bullet-torn, smolder- t was the only evidence ry-making attack.

MATS plane was the first ircraft destroyed in the lict. But MATSmen had worry about this for in t days they were busy ng transport lines across to Japan and Korea.

nedical supplies, ammu- ance equipment, radio, ronics equipment and re parts were several y by sea lanes. The so- 4-hours-a-day, 7-days-a- gic airlift. The 7,000- ic air supply line was in the history of world

n five days after the re- or medical supplies, ded whole blood, blood ms and bandages, was MATS, the material was Haneda Air Base, To-

July 1950 the Army in n urgent message. Rock- pecial purpose ammunition, including 3.5 inch bazookas, were urgently needed to halt the enemy's giant stride southward. MATS rushed these items to Tokyo within a matter of days.

During the seesaw of early combat action in Korea, a wire message was received by MATS headquarters for a Ground Control Approach radar unit. Within a matter of days, the entire unit had been airlifted and was in operation at an advanced fighter field in Korea.

Four days after two sorely needed SAC medium bomb wings flew from their U. S. bases they were blasting North Korean targets, thanks once again to MATS support work in moving equipment and personnel to the combat theatre.

About 70 tons a month were airlifted to the Far East before the Korean action flared up. Shortly afterwards the load shot to 1,800 tons a month.

MATS also took on a humanitarian role in the form of air evacuation service for the sick and wounded of the Korean conflict. Air evacuation in wartime had been tried before, but only for short trips. In the Korean situation, MATS operated the longest and fastest air evacuation service in history. (For a story on air evacuation see "One Or The Aisle," page 24.)

* * *

ATRC, through its technica schools, gives the Air Force personnel of MATS their initial training in their varied jobs. Many members of the Air Weather Service receive their first training in the weather school at Chanute AFB, Ill. AACS people go either to radio school at Scott AFB, Ill., or to electronics school, Keesler AFB, Miss. Flight Service members also get their initial training at Keesler in the control tower operator school. Photographers of the Air Photographic and Charting Service are graduates of the photography school at Lowry AFB, Colo. Of course, ATRC also trains the MATS pilots, crew members, and mechanics.

* * *

TODAY, five and one-half years after its painful, but proud birth, MATS is furnishing day-to-day scheduled and non-scheduled strategic air transport service to our armed services scattered in all parts of the world.

★ ★ ★

;sport service *and its job*

; provide more than 1,200 facilities with 16
nt kinds of communications and navigational
s. One of the major responsibilities of AACS
;tandardization of radio, radar and electronic
roughout the world—a major contribution to
communications. Because of this, the tech-
ontrol of this far-flung communications net-
s retained by a Washington headquarters.
ional control and logistics support is retained
base or theater commanders being served.

ow—weather?

)perates approximately 250 weather stations
: aerial reconnaissance squadrons. Detach-
are located at all Air Force bases—domestic
erseas. AWS operates master weather cen-
hich furnish operational and planning fore-
Its facilities accumulate meteorological data
)cessing and evaluating weather conditions
ıe North Pole to the tropics.

**ıere any other technical air support
:s in MATS?**

Air Photographic and Charting Service, and
Service. APCS is responsible for the over-all
'aphic requirements of the U. S. Air Force.
quirements include, but are not limited to,
; films, film strips, and still and motion pic-
verage of combat operations for historical,
:nce, and staff study. Currently, APCS
and distributes aerial navigation charts for
ional aircraft, and performs a similar serv-
jet planes. The service distributes approxi-
5 million aeronautical charts monthly.
Service provides clearance authority for air-
point-to-point flights upon request or when
l. Other functions of the service include
ing of point-to-point and local flight plans
:ing the aircraft identification zones; super-
urricane evacuation of planes (notification
ary bases to evacuate all aircraft to desig-
'eas of refuge) ; aiding lost aircraft; locating
aircraft; and issuing in-flight advisories
quest from pilots on point-to-point flights.
ervice is the only MATS technical support
which operates entirely within the continen-
S. limits.

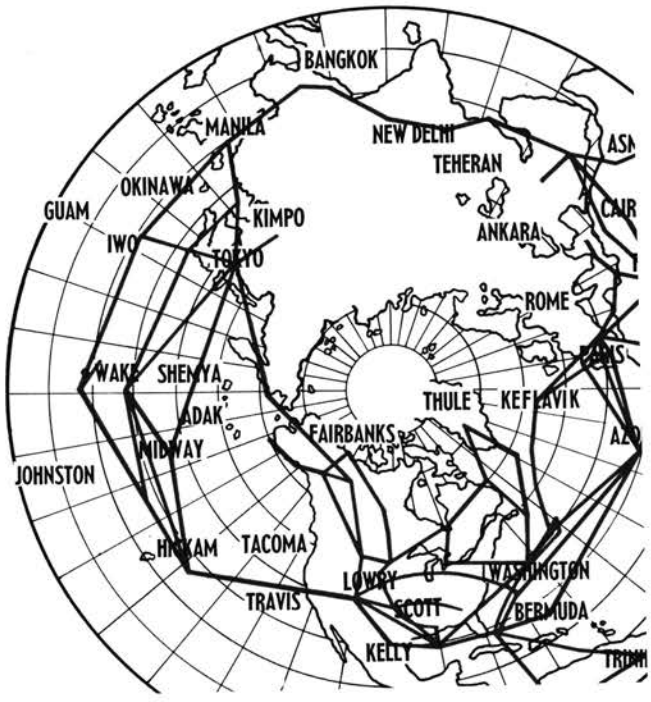
**has, we understand, a corps of career
—people who will not be transferred
it. Does this work for some enlisted
nel too? What benefits are derived
his system?**

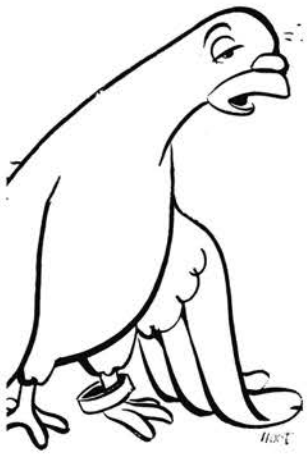
A. Neither officers nor airmen are permanently as signed to MATS. All are subject to transfer t other major commands in the Air Force, eithe domestically or overseas. However, there are offi cers and airmen holding specialty classification peculiar to MATS operations who are almost al ways attached to MATS units. In the officer classi fication, examples could be communications special ists or meteorologists. In the airman classification the individuals might be ground control approacl operators, air traffic control technicians or variou weather specialists. The benefit derived from keep ing scarce specialists in MATS centers around effi cient continuity of operations and training for in coming personnel.

Q. In the event of war, would the MATS mission and operations change?

A. No, we are doing in peace time exactly what we shall be called upon to do in times of war. This is one of the satisfying aspects of an assignment tc MATS. Our economic structure and democratic way of life necessarily will not support wide-scale, fully manned peace time military machines. But our survival makes it imperative that we maintain forces in being—a "hard core" that can be ex panded. The doctrine applies to all military branches. MATS is no exception. Other elements of the Air Force are in constant training during peace time toward the military commitment if and

★ **MATS ROUTE: Gulliver had nothing on them.**





case of the unwanted pigeon

)Y knew where he came
He wandered into an au-
ales room in Alice, Texas,
February, exhausted. At
oked like any other com-
en-variety pooped pigeon.
: the metal band on the
with the inscription AAF

Jones, an Army reservist
; for the auto firm, set up
d cage for the bird, bought
worth of parakeet feed
: pigeon ate with relish),
it some water. Alice's
)lice Carl Lenhart radioed
; air station at Kingsville
:t they had a government pigeon on their hands and asking for disposition instructions.

Then the paper mill started to grind. Kingsville NAS asked Corpus Christi NAS what to do, and Corpus Christi, figuring that AAF meant Air Force, checked with Lackland AFB. A San Antonio newspaper picked up the item and surmised the bird had been AWOL since 1944. Lackland told Jones they didn't know anything about that and would check with higher headquarters.

At Hq ATRC the supply people scratched their heads and wired Topeka AFB, Kan., the west zone depot for AF property class 68 (birds and such). Topeka said the bird wasn't on their records and wired Mallory AFB, Tenn., prime depot for class 68 property. Not wishing to be stuck with a "sick or injured" pigeon, Mallory asked the Army Signal Corps center at Ft. Monmouth, N. J., if they owned the bird. Monmouth said the pigeon was not a government bird and passed the information on to Hq Air Materiel Command. AMC wired everyone involved (by now, seven bases) th it would advise the pigeon's guar ians what to do with the bird, sin it was obvious by then that the go ernment had no use for it.

Reserve Lt. Jones meanwhile h fed the bird for two weeks and t pigeon was in the peak of conditio "I realized that the mating seas was near at hand," Jones said, "a further realizing the bird mig choke to death on Army red tap the cage was removed from o showroom to the used car lot and t pasteboard door left partly open." bit later the cage was empty. T seemingly unwanted pigeon w gone.

"I did not turn the bird loose wit out proper orders," Jones assur "It was just one of those things- he found the door open and to off."

The bird may not have been und orders, but there's plenty of pap work on him in the files of supp units throughout the country. Ne time he reports to an aid station he better bring his Form 20.

★ ★ ★

ng pooch

ıt visitors at Ellington
., these days are greeted
e-in-Wonderland servicing
en airmen, wearing check-
and gold jackets over their
form the Base transient
that cares for incoming
'heir foreman, seemingly,
ioking tech sergeant wear-
lasses, a fatigue cap and a
look, who wanders around
vatching the activity. He's
ger, the alert crew's mas-
here with M/Sgt. M. W.
and S/Sgt. Clifton N.
:ouple of his boys.

ith MATS; several hun-
are on alumnae status,
hospitals). She's seen a
evac patients. She was
the Lackland AFB hos-
after entering the Air
llowing graduation from
AFB flight nurse's school
d to Lackland as chief
ıe air evac ward. She
months after graduation
:r before her name came
ıg duty.

; a year ago—since then
ıave taken her the equiv-
ɔuple of times around the
of it over the flat farm-
middle west. She rides
:uit that connects MATS
ntal trunk line out of
with dozens of military
ıs hospitals in the mid-
'al times a week she goes
long flights that start in
ɔrning and may take her
nio, St. Paul, Chicago, or
h maybe half a dozen
:ween. At least once a
ıy can plan on RONing
:r many stopping points,
ɔme the next day with
l of passengers picked up
stops" along the way.

* * *

LT. Murphy's day starts two hours before scheduled take-off when she reports to the base hospital's transportation section to pick up a list of patients for the day's trip and collect their medical records. Then she makes the rounds of the wards, looking up each patient. At the male ambulatory and litter wards, she introduces herself to her passenger-patients, inquires about their condition, asks whether or not they've ever flown before. She tells them what time take-off is, how long the flight will take, what the weather looks like. If a patient has any qualms about the flight before her visit, they'll be settled before she leaves.

She goes through the same routine again at the female wards, when she has distaff patients scheduled for her flight. If a woman or child is scheduled, she'll make the ambulance trip from hospital to plane with them. The same goes for the SI (seriously ill) category.

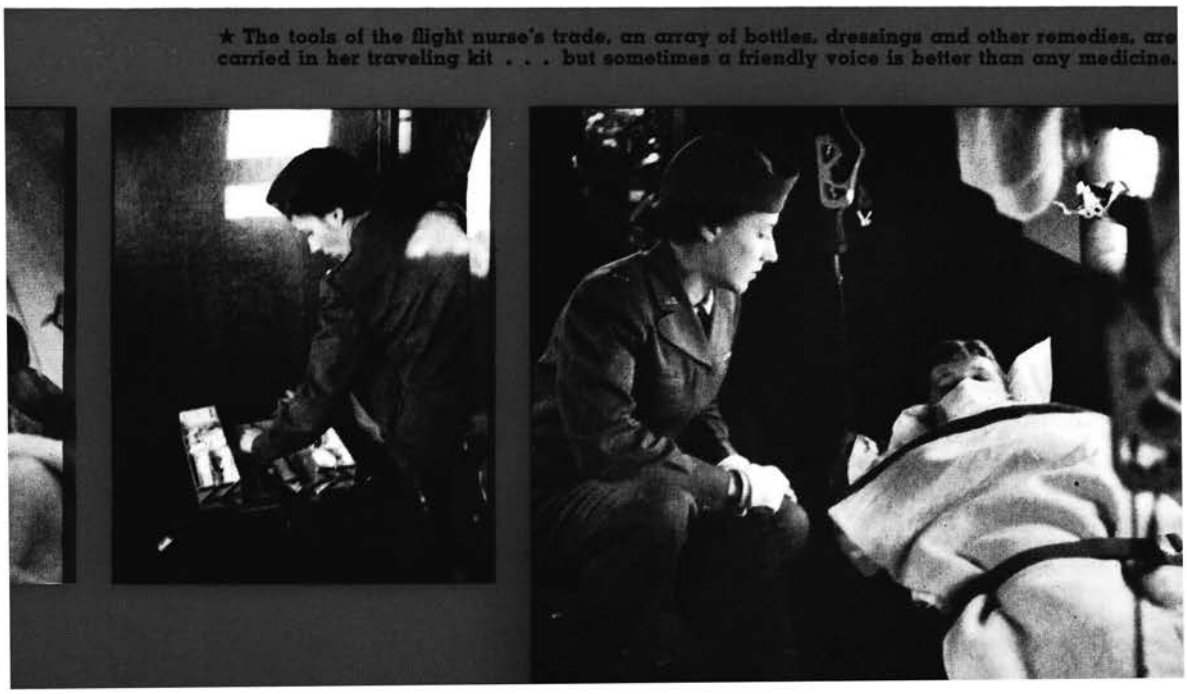
When there are NP patients on her list, the nurse checks to see that sedatives have been administered and that restraints in the form of leather wrist and ankle straps are placed on them—a routine precaution designed to safeguard both the patient an< others on the plane.

"A lot of nurses worry about NI patients," Lt. Murphy says. "W recognize mental problems as a sick ness, but the symptoms and reac tions are different than the standar< physical illness for the most part Actually, I've never had any troubl< with them. I talk to them straigh from the shoulder, just as I woul< any other patient. Sometimes th< sedative (normally sodium amytal) will wear off during the flight. Ther they get restless.

"A couple of weeks ago I had a boy who wanted to get up and move around, and I knew we'd have tc give him another shot to settle him Another NP in the litter above started talking to him, trying to calm him down. My medical tech and the co-pilot had to help too, but he was OK after the shot."

* * *

WHEN the ambulance pulls up to the hospital plane, Lt. Murphy goes through a pre-flight much the same as the pilot and the co-pilot of the plane. She directs the placement of litters according to the type of patients. Since the heating system in the C-47's cabin blows air from back to front, TB patients,



★ The tools of the flight nurse's trade, an array of bottles, dressings and other remedies, are carried in her traveling kit . . . but sometimes a friendly voice is better than any medicine.

is of seeing misery," she
d don't let anybody tell
are hard—when I get
o it, then it will be high
this business."

enough that the flight
ofessionally capable. She
a thorough-going human
appreciate the problems
ıman beings.

ırses like their jobs. None
ant to go back to ward
›spital when the 18-month
They become a combi-
flyer, doctor, and nurse
tour. To the vernacular
l and the operating room
.e jargon of the pilot and
hief. And it wears well

There's at least one real drawback to the flight nursing business though. The nurses never know what happens to their patients. For a few hours they are in her complete charge. She talks to them, treats them, reads their medical records, and adds her own comments to them. But when the patients leave the plane at their destination they vanish.

"It's like reading a couple of installments of a magazine serial and then having your subscription run out," Lt. Murphy says.

★ ★ ★

★ You have to be human and appreciate other humans. "When I get calloused to this business it will be high time I quit."

'o the doctor

ıs lifted from the ambu-
ı waiting MATS air evac
) flashbulbs lit up the
ding it for posterity. The
ıused on a sign pinned on
ɛet which had been fitted
man's bathrobe. The sign
l simply, "2,000,000th."
later, along with 37 other
ıo were put aboard the
MacDonnell was headed
l the United States, and
a hospital bed in New
his home. He was an
ıtatistic in the now com-
business of shipping sick
ɛd—evacuation by air.
ıell was the two-millionth
ient to be moved by air
ea was first evolved way
0. The Korean war saw
26,000 sick and wounded
m the boiling peninsula

ns for air evacuation are
it takes 21 times more
sonnel to transport pa-

**onnell: an impressive sta-
history of air evacuation.**

tients on surface vessels than by air, 2) medical officers are rarely required in air evac because of the short duration of flights, 3) speed (air is ten times faster than surface hospital ships), flexibility and frequency (26 to 32 patients make up a full plane load, compared to 300 in hospital boat, and planes may be dispatched in any direction over land and water at any time.)

There are other reasons, too, important reasons. Like cutting embarkation and debarkation hospital beds by 50%. Elimination of delays in getting patients to specialized treatment centers. In other words, air evac takes the patient to the doctor.

Probably the most important reason for air evac's existence, at least in the minds of wounded personnel, is the knowledge that they are never more than 60 hours from the United States. Flight nurses report a marked improvement in a lot of sick and wounded patients as the planes get nearer to the United States.

Atlantic and Pacific Divisions of MATS handle the job of shipping patients to the United States. From California's Travis AFB, and Massachusetts' Westover AFB, MATS Continental Division takes over. Feeder units stationed at several bases throughout the country service the main coast-to-coast trunk line.

The mainstay of this aerial ambulance system is the flight nurse described on these pages. All of these women are Air Force nurses. And they get a good grounding in the peculiarities of flying and the problems that will confront them during a compact six-week course at Gunter AFB, Ala. All are thoroughly screened for stiff mental and physical qualifications before they report to the school.

At Gunter they learn what effects flight has on the human system, how to ditch and survive in ocean, jungle, desert, and the Arctic, and how to prepare for flight and in-flight nursing.

At course's end they get their flight nurses' wings, and eventually a tour of duty with one of MATS air evac units.

★ ★ ★

llion miles of open sea to cover.

or by signal light.

the deck, just like the Navy.

l flashy

kheed's latest jet resembles a flashy sport model. Yet to be ac- ›y the Air Force, the two-place trainer has been designed for ssignments, including advanced pilot training. The 600 mph 's innovations include a parabrake 'chute to slow the plane on a raised rear seat to give the instructor better visibility and a ıtch on his student, speed and climb equal to many combat jets, ial wing devices to permit stalling or temporary loss of flight in The prototype is powered by a J33-A-16A engine, giving it 30% ust than earlier jet training plane power plants. As yet, the trainer has not been named.

plenty of power

The most powerful 18-cylinder engine ever developed rates 3,700 horsepower. Curtiss-Wright's turbo compound aircraft engine powers the Douglas DC-7, Lockheed Super Constellation, plus a number of military aircraft. Each cylinder of the turbo compound engine produces approximately twice the power of the average automobile engine.

some hangar

Housing problems for today's giant aircraft present difficult and expensive undertakings. A new hangar built to accommodate four B-52s has an unobstructed doorway 780 feet long and 65 feet high. Total construction costs for the new hangar: $5 million.

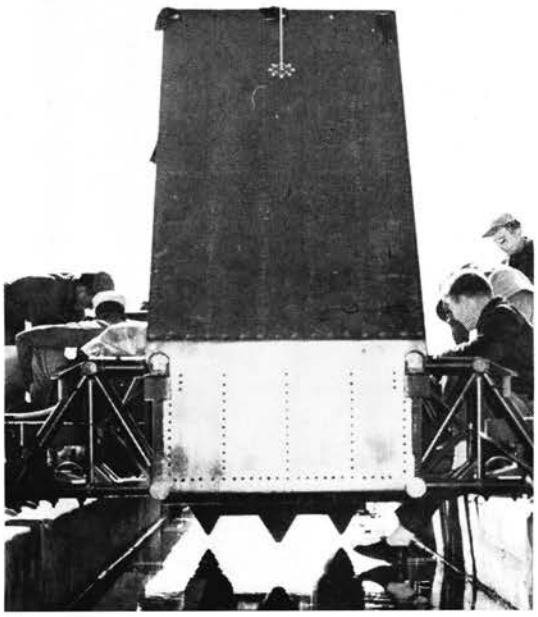
flying refrigerator

A water cooling system is incorporated in the design of the supersonic Douglas X-3 research airplane. Difficulty in cooling the X-3 arises when a speed of Mach 2 is reached and the temperature rise is more

t mach l

★ BRAKING SYSTEM of the speed-sled is a trough 5 feet wide and 18 inches deep that extends the full length of the 3,500-foot railroad track. Small plastic dams are inserted to inclose the water for the desired braking distance. Silhouetted beneath the sled are brake scoops to pick up water.

★ ROCKET POWER is used to propel the world's fastest land passenger vehicle. The powerhouse consists of 12 rockets, each providing 4,500 pounds of thrust. This photo was taken before a low speed test run in which only 6 rockets were used. Carriages slide along metal slippers that grip rails of the 3,500-foot track.



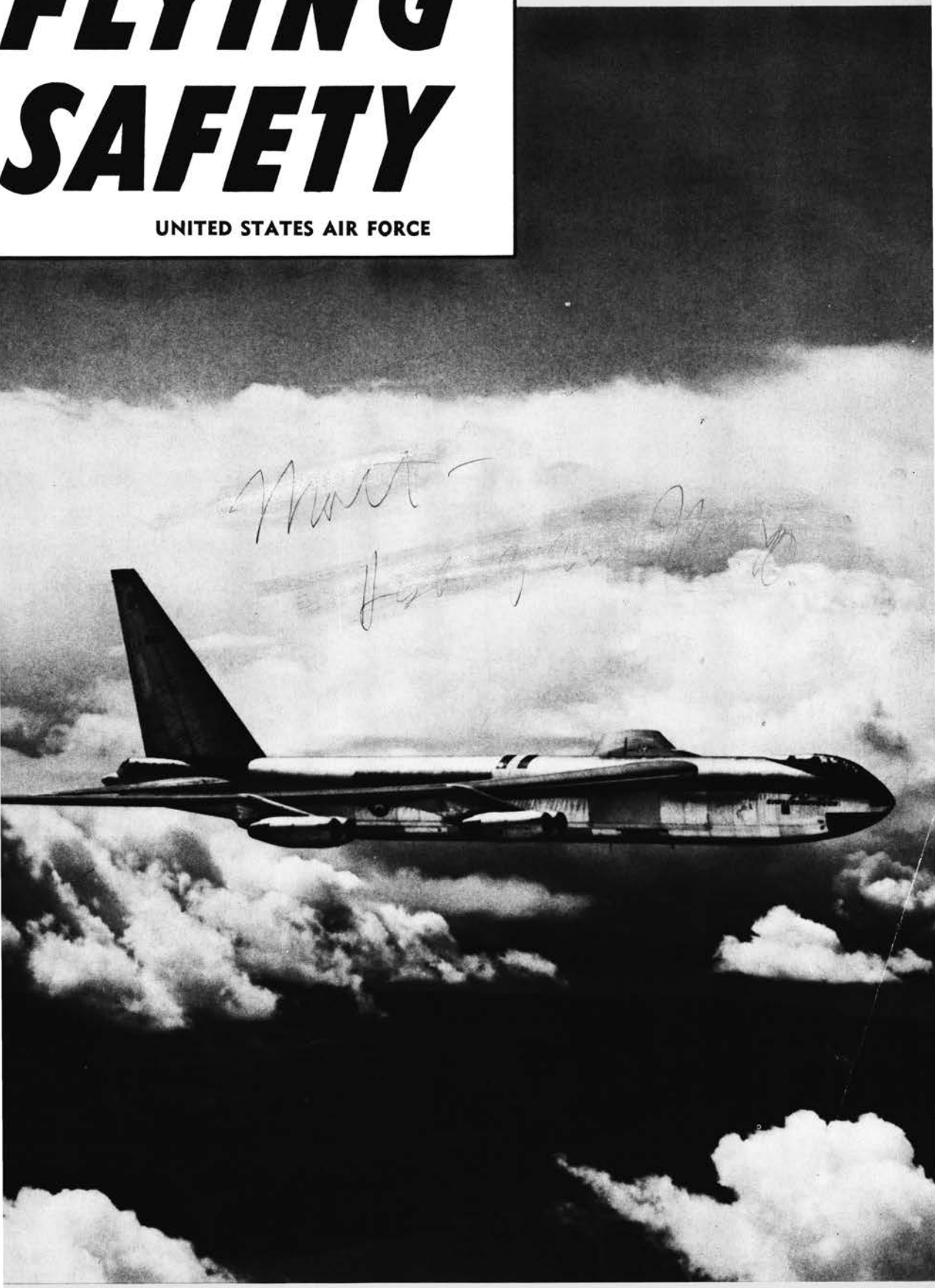
out of the blue

Spring and a new sports car: to A/3C Shirley Sa batus these are the ingredients of the good lif Airman Sabbatus, a 19-year-old teletype operat who hails from Portland, Maine, was introduced AIR TRAINING readers last month when she was pi tured greeting a new day in the "Closed Bay" stor

FLYING SAFETY

UNITED STATES AIR FORCE

JANUARY 195



In This Issue

- Flying a Mountain Wave
- Looking Over the T-29D

ARTC CONFERENCE

aff officers and representa-
of all divisions of Air Train-
ommand met recently with
y Inspector General and key
in the Directorate of Flight
esearch to evaluate flight
oblems. In his welcoming
Maj. Gen. V. E. Bertrandias,
nspector General, empha-
ever-increasing difficulties
ng human capabilities to
advancement. He stated
ugh the accident rate has
ıced from 29 per 100,000
rs in 1952 to 24 per 100,000
the first nine months of
lowest rate in Air Force
ıo opportunity should be
improve the trend. General
ıs stressed that it is within
n factors, in maintenance
air, that lives and defense
n be saved.

iled breakdown of USAF
by aircraft type, command,
ıations and other criteria
ined by Brig. Gen. R. J.
Director of Flight Safety
He elaborated on the loss
r Force in terms of crews
's and pointed out the spe-
ɔlem areas that offer the
ɔportunity for safety effort.
em were takeoffs and land-
sition training and varia-
onfiguration in relation to
acteristics.

n. G. O. Barcus, Vice Com-
ATRC, keynoted the con-
ıen he stated that the ulti-
AF goal is to eliminate
sible accident in order to
o reduce the cost of train-
ıt loss of efficiency.

Air Force Base was chosen
ree-day conference because
orate of Flight Safety Re-
fice of The Inspector Gen-
F, has prime responsibility
t accident investigation and
ɔsitory for all aircraft acci-
ds.

ıjor purpose of this sym-
ıs to:

liarize ATRC representa-
tives with the facilities and assistance available through the Office of The Inspector General at Norton AFB.

2. Further the general knowledge of individual Flight Safety officers assigned to the Air Training Command.

3. Standardize Flight Safety officers' procedures in the conduct of their duties.

4. Present specific flight safety problems and, in panel discussions, recommend corrective action.

5. Discuss with the aircraft manufacturers the characteristics of their equipment in terms of the ARTC safety program.

Particularly interesting to the conferees were the discussions conducted by test pilots of the aircraft industry. The design and manufacture of aircraft and the training of people to fly them are the most fundamental areas for study in the entire field of flight safety development. It is therefore imperative that test results, flying techniques and training methods be reviewed mutually and the results pointed toward complete accident prevention.

Lockheed, North American and Republic were represented by Tony LaVier, Joe Lynch, and Jack Bade and Carl Bellinger, respectively.

Tony LaVier briefly traced the history of jet aircraft and expressed his appreciation of the difficulties encountered in transition from reciprocal to jet flight. Highlights of his talk included Lockheed's pioneering in jet flight production. In the ensuing discussion he provided experienced advice on spin characteristics in various configurations, fuel control, maintenance requirements and recommended approach patterns.

Speaking of the F-86D and F-86F, Joe Lynch of North American described design and construction developments necessary for high speed stability. He made specific reference to low altitude flying characteristics and re-emphasized the general tendency of inexperienced pilots to overcontrol all jet aircraft.

All industry test pilots emphasized the attention which must be given to proper landing approach patterns.

The Republic representatives, Jack Bade and Carl Bellinger, spoke in detail of the F-84F and F-84G, pinpointing specific handling characteristics, theoretical and proven capabilities, and idiosyncracies. Pitch tendency, aileron reaction, stall warnings and flight limitations, "artificial" feel of boost systems . . . the personality as well as the characteristics of aircraft were introduced by these test pilots who live with them under every conceivable circumstance.

Following the background talks the members, in panel groups, studied the specific problem areas and from their recommendations will come changes in the use of check lists, revised programs of transition training, greater utilization of training schedules, increased use of safety education material and changes in flying doctrine, particularly as it concerns spin recovery and landing approach techniques. *All pointed to your greater safety.* ●

You are the one who has
r attitude toward your job.
ware that flying today is a
nanding profession, that it
requires every bit of skill
ıtration at your command,
is unforgiving of careless-
ıistakes. But does your wife
ıt? In very plain words,
know that your attitude
light may mean the differ-
een a long career and a
ort one?

isk of belaboring the point,
g to tell you a little story.
t once before in FLYING
about six years ago. It isn't
ry, yet we think that sim-
s have actually happened.
e this.

on a time there was a B-25
rence Bates, Capt. USAF.
athered in at a base in Ten-
ıd he wanted to get out.

Bates stood in the door
ons and watched the flakes
ı the eight-inch layer of
dy spread over the ground
ays of intermittent snow
His gaze went from the
flight line where his B-25
l. Snow was accumulating
gs although the crew chief
nished brushing them off.
crushed his half-smoked
nd stamped back into the
fice to continue his vigil
etype machines. For two
ıis face had been a mirror
uence reports.

e plane had been cleared
ince the Captain had been
at this Tennessee field. It
ly returned to the base,
th ice, the pilot vociferous-
for having his feet back
ound. But Larry badgered
questions about the at-
ght. Any forward visibil-
shield ice up? De-icers do
What was the temperature

the pilot told him, "Look
you're thinking of clear-
gh this stuff you're nuts.
e worst weather I've ever
and I've flown in some
."

ad Captain Bates. He had
y a trip from India to
back, and no one could
eather over the Himalayas
retty lousy.

ı an ETA came in on a
ıg in from Langley Field,
Larry's home base. He listened over the squawk box to the pilot's reports over various stations along the route. "Heavy icing over Richmond. Extreme turbulence over the mountains. Snow and ice over Tri-City. De-icers only partially effective."

Larry sat and muttered. "Why did this have to happen to me? Janice told me to be sure and get home for the colonel's party tonight. What will I tell her? She'll never believe I was grounded because of weather. She knows I'm considered a very good instrument pilot." He recalled the painful ordeal he went through last time he was a day late getting home. This time it would be worse.

When the C-54 landed and the pilot walked into operations, Larry was waiting for him. The pilot's reports were not quite as bad as he had expected. He could make it home! He had de-icing equipment and there was no reason why the operations officer shouldn't clear him.

The operations officer, who had heard Larry's tale of woe too many times already, looked dubiously at the clearance. "Do you really feel that you can make it?"

The Captain assured him that the B-25 could get to Langley easily, no sweat. So the operations officer signed the clearance. With his copilot and crew-chief in tow, Larry raced out to the airplane.

After receiving several advisory messages from Flight Service, he was cleared for takeoff. At 600 feet they were in the clouds. Ice began to build up almost immediately. The Captain let it build up on the wings. When he thought it no longer safe to wait, he started the boots pulsating. The ice cracked and flew off. He smiled to himself and let it build up again.

This time, however, it collected much faster, almost as soon as the boots were turned off. Soon he could no longer see through the windshield, and airspeed started decreasing. He checked the pitot heater quickly. It was on. He turned on the prop de-icers and the airspeed started building up. The copilot, unimpressed, glanced around at the crew chief.

Over the foothills, turbulence set in. Icing conditions were getting worse, and the de-icing boots would no longer clear the wings. Although the Captain was now pulling 40 inches manifold pressure and using 2300 rpm, the airspeed was decreasing steadily.

As the airspeed went down to 150 mph, the copilot took up all the slack in his chute harness. Turbulence made it almost impossible to keep the plane upright. The gyro instruments had spilled twice. Airspeed was down to 130, then 120, 110, full power and rpm's. A quick picture of Janice, dressed and waiting, flashed through the Captain's mind as the told the crew, "Prepare to bail out."

That was all the crew chief needed. He dumped the hatch and out he went. The altimeter read 5500 feet as the copilot left the plane. Almost as soon as his parachute opened, his feet touched the ground.

A few hours later, a rescue party found the B-25 lying in a snow-covered meadow, Captain Bates still in the cockpit. Fortunately the B-25 struck on a gentle upslope and although the plane was almost completely demolished, the pilot survived.

If this were a true story, it would have gone down on the statistical reports as "Cause Factor: Weather." But the real cause was that attitude we were talking about — "get-home-itis."

The Captain's wife would never have believed the crash was the result of anything but ice and snow. Why should she? She was interested in her husband's career. She saw that he ate the right foods, had a comfortable home, got enough rest. Probably she assumed a lot of the household duties she would have expected her husband to take care of, had he worked at a more conventional occupation. She didn't think it was too much to expect him to be home in time for just one special occasion. But it was.

We don't think "get-home-itis" has reached epidemic proportions. And we think Air Force wives are pretty intelligent gals who know the importance of your job. But if the "get-home-itis" attitude prevails around your house, fold this issue of FLYING SAFETY open to these pages and put it on the coffee table.

Remember, you may not be as lucky as our fictitious Captain Bates.

Don't make one flight for home your last flight — for anywhere. ●

A veteran of 17 years with Trans World Airlines, Capt. Robert S. Buck first soloed in a homemade glider in 1929. The following year he switched to power airplanes, and from 1930-37 tried his hand at racing, instructing and barnstorming. He became a TWA captain in 1940. During the war he flew for ATC, piloted a B-17 on a global precipitation static research project and poked into thunderstorms in a P-61. Since 1947 he has again been flying as captain on TWA international routes.

Capt. Buck believes that the greatest danger to a pilot is complacency.

ı little ship for a flight from
to Scranton, Pa., to see my
Mother's Day. I wanted
re in the worst way and
ıg into weather that good
ld have told me to keep out
ıd up doing about 40 min-
e primary flight group in
Brother, that wasn't in
ɔartment.

ere also a few times I
had more gasoline when
ation went zero zero, so
real fussy about gasoline

ere were a few thrills in
rms. But I've learned and
ced that if you slow her
ıtain attitude and airspeed,
with altitude, you'll finally
ıt the other side in one
the serious trouble I've
ıd thunderstorms has been
ıg them too fast. Naturally
stay out of thunderstorms
s possible.

ough this daydreaming I
ıdering what one thing I
out that was the greatest
'as it engine failure? Ice?
ɔrms? Or what? And it
me, rather abruptly, that
t danger had always been
hat most all the tangible
had were brought on by
f in one form or another.
ıer type troubles—engine
:., proper knowledge of the
; to do turned them into
tine incidents.

Why Goof Off?

ems that if I goof off, there
ıuble, and if I don't, there
ı why goof off? None of
ver done it on purpose.
do we goof off at all? The
t crops up is complacency.
smug and complacent, we
verge of trouble.

e various types of compla-
different places in which
ɔ. A simple kind is when
e radio compass to a sta-
ıst about on the frequency
edle points ahead briskly.
'hat's it!", but never both-
fy it. The other end of the
hen we don't thoroughly
rgency procedures. We
ıow them, or the basic in-
and feel that when an
occurs, we can out-think
course, we can't out-think
appening. We can move
we can think, and in a
; emergency we may move too fast and do the wrong thing. On the other hand, if we know the book by heart, we still may move too fast but we'll probably do the right thing instinctively.

We can get complacent in the air from fatigue, and must guard against it. If we are tired or need oxygen, we may get complacent about identifying the station we tuned in or just take too many things for granted.

The other type of complacency, such as not bothering to know procedures well enough, is difficult to comprehend. We all have some of it to a certain degree, and it's a battle to keep it under control.

The first sign of complacency came after my solo, and I went through the first cocky stage thinking, "I'm a pretty hot pilot." Then, of course, something scared me and I quit being so red hot. In that same feeling, or something like it, comes advanced complacency.

Personally, when I get to feeling a little smug about how I know all the answers, a red flare goes up saying: "Take care, brother, you're about to trip over something!"

And so this session of daydreaming seems to bring out that the greatest danger is myself in a complacent mood. And speaking of complacency —"Engineer, how much gasoline have we left? Navigator, where are we? What's our ETA and can both of you prove it?" ●

dy position in the seat can
ined.
r vital factor in many emer-
the problem of fear. Fear
ibility in any emergency.
even when fear is present,
s can and must be evalu-
at positive remedial action
ken.
ories of panic are many.
a man's "D" ring was
ver his parachute harness
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hod of pulling the "D" ring
ork. Had he recognized the
his trouble, unhooked the
and then pulled, his bailout
e been successful.
ast here is part of the story
t who ejected near K-2,
ring August 1953.
ection, his helmet was twist-
l on his head so that he
e and had difficulty getting
belt unfastened. Although
t he pushed the seat away
et, when he pulled the "D"
hing happened. Then he
e seat away again and the
opened. All this was done
ause of the twisted position
net. Finally he got the hel-
d saw that the 'chute was
d also had several rips in
more, the seat was caught
oud lines, spinning in the
l causing his canopy to get
ely smaller. Searching for
cut the shroud lines and release the seat, he found two of his knives gone, and one unavailable. It was the fourth and last knife which saved the day. Just prior to landing he finally got the seat loose. In landing, his head hit a rock, but no injury resulted since he had kept his helmet between his knees and put it back on at the last moment !

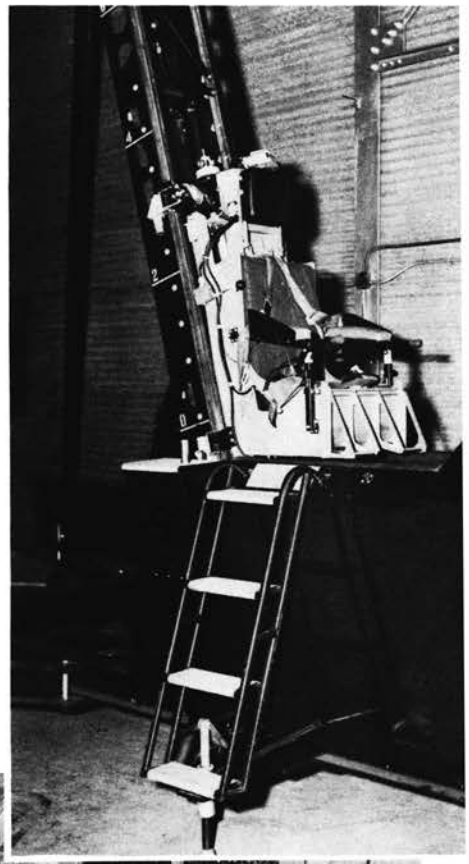
Incidentally, this officer attended the mobile ejection seat training course the day prior to his emergency.

Ejection seat indoctrination is but one phase of survival and emergency escape training.

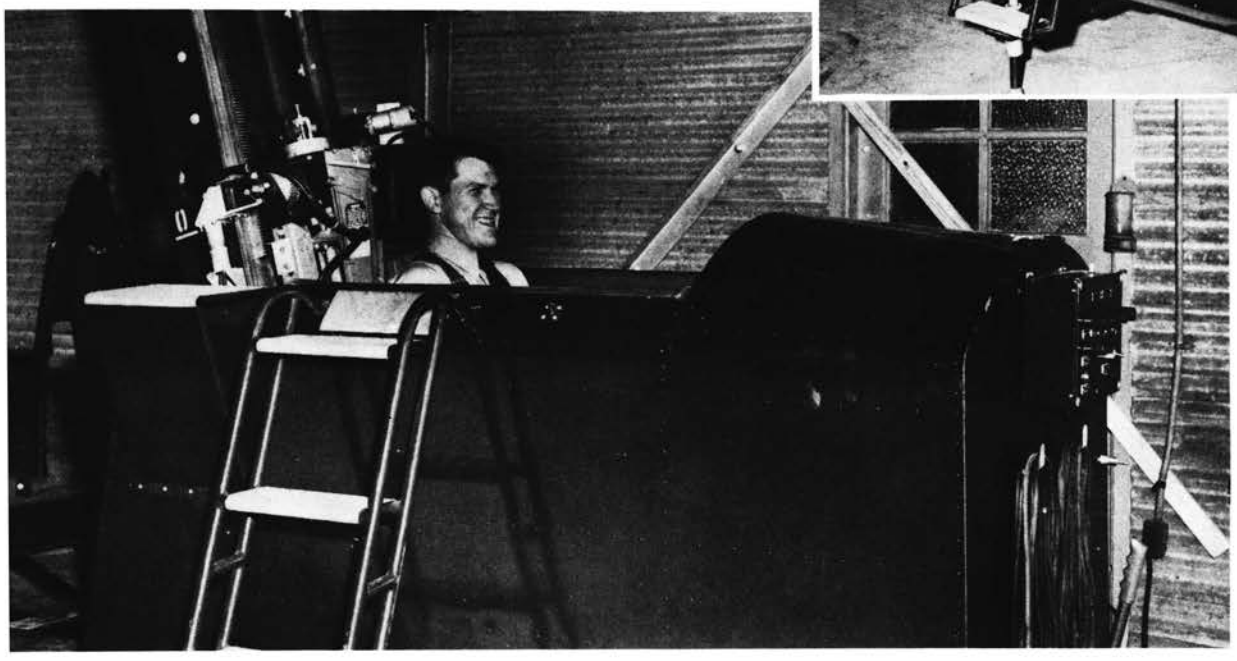
Following is the account of an emergency escape from an F-80C which indicates complete and thorough training of the pilot by his organization.

"I leaned forward, fired the canopy and placed my feet in the stirrups. As I leaned back I raised the armrests, and when my head touched the headrest I pulled the trigger. The entire operation seemed quite easy, automatic, and was accomplished very rapidly in a smooth uninterrupted motion. I would estimate that it took less than three seconds from my decision to eject until I cleared the aircraft. I had the feeling that I had done everything before. After clearing the aircraft I couldn't orient my position relative to the horizontal trajectory, but this didn't affect my releasing the seat and pulling the ripcord almost immediately.

"I attribute the success and ease with which I ejected and survived in the water afterwards in great part to the extensive and excellent survival training carried on in my squadron. All members of the squadron have recently been through an ejection seat tower ride and associated lectures. Also, within the last month we witnessed a demonstration of water survival at the beach which included actual use of dinghies, 'Mae Wests,' marker dye, flares, etc., and three



Right, seat in safetied, loading position.



Bottom, seat in firing position.

WELL DONE!

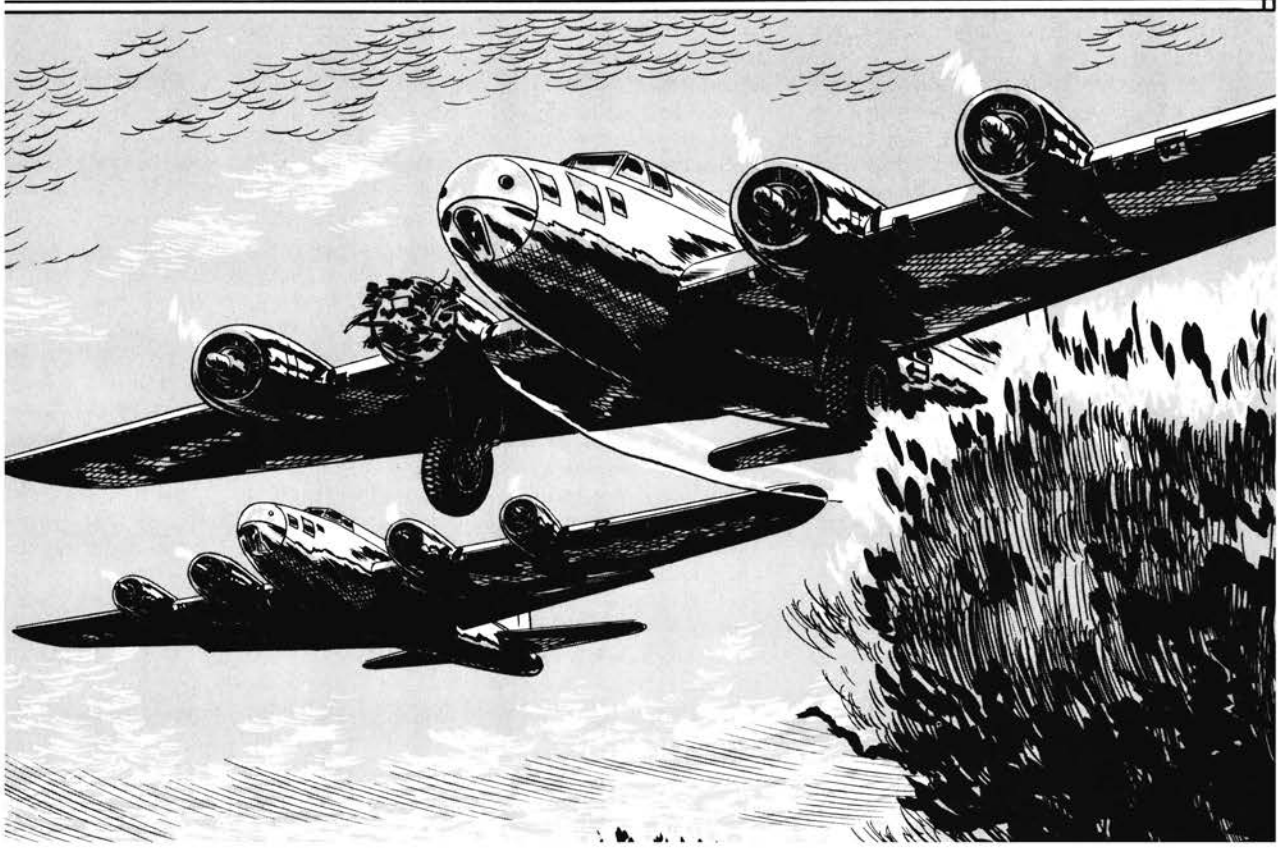
Captain Charles H. Proctor **Captain Kermit E. Spears**

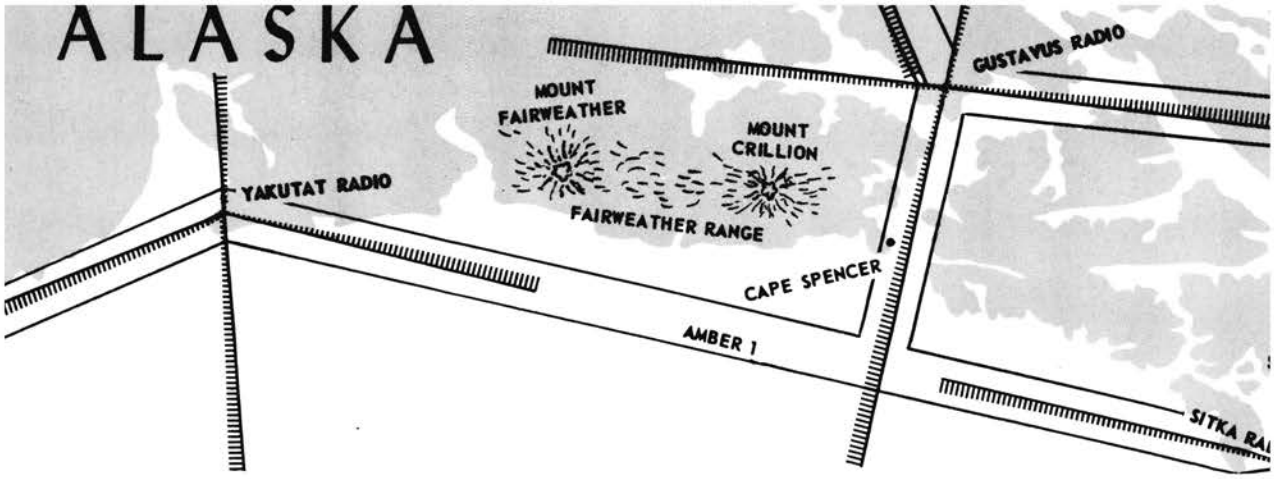
By making nine "saves" over a period of two years, Captains Proctor and Spears have prevented a loss to the USAF of over two million dollars in drone aircraft and equipment. Proctor and Spears recovered these shot-up, damaged or malfunctioning drones on the Salt Flats area in New Mexico.

They elected to utilize the Salt Flats area for the recovery to preclude endangering lives and property in the vicinity of Holloman AFB, home station of the drone unit. Especially noteworthy is the fact that all recoveries were accomplished by remote control from a director B-17 flying formation with the nullo (unmanned) drones.

This technique in making the recoveries was developed by necessity as each situation arose, since training in landing drone aircraft is not received by remote control pilots. The way these pilots handled each emergency reflects favorably on their skill and practice in all phases of drone operation.

To Captains Proctor and Spears for their fine work in preventing loss of lives and property and in saving needed defense dollars, Well Done.





he could see Middleton Is-
ascertained that a right
wo to three miles per min-
a fact, and that a heading
f 40-degrees was necessary
at Middleton.

lays later another navigator
ed a similar wind in the
proximate corridor. Then
a couple of weeks of nor-
g, and again it happened.
I was flying with a student
te check to and from Ta-
the trip down, which was
l, I showed him the area
and cautioned him to be
careful. It paid off. On our
ip, we encountered a wind
0°/112 knots and again
40-degree correction. This
our last encounter with our
id, but that comes later.

lying with the squadron op-
officer, still another navi-
ght a similar wind and cor-
0 degrees to Middleton

imately two months later a
n no navigator aboard, was
from Tacoma via the
ute (Amber 1). He crossed
over Sitka and proceeded
ape Spencer. A short time
tka the beam leg was lost
tant "N" signal was heard.
d left 15 degrees, then an
10 degrees, but the beam
encountered as he had an-
The beam was still not en-
as he approached the NE-
f the Gustavus beam, so as
measure he turned left 90
nd flew until the beam leg
ed. This took 17 minutes on
heading and shows that the
right of course after the
ections was approximately
miles. (Cape Spencer was
reported position for the
Pacific C-54 which van-

Then our theory — which was checking out so nicely — exploded. On a return trip from Tacoma a student navigator flying a route check with me encountered a wind of 130 knots, but this time from 064 degrees. Our jet stream theory was out. What now?

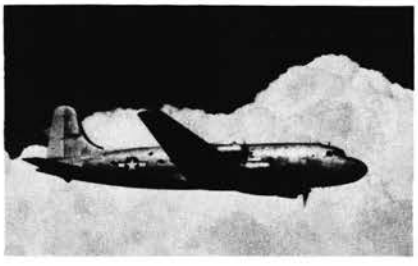
I gathered all the information I could get from the navigators who had experienced it and proceeded to the weather office. The weather office had heard a few of our tales about the winds and had done a bit of research on his own.

Through the cooperative efforts of the 54th and the weather office we found that in the vicinity of Yakutat and Yakataga there is a persistent low pressure area, which at times develops winds in excess of 100 knots that influence the route between Anchorage and Seattle. A review of the weather maps and sequences on each date when the wind was encountered showed a deepening of the low pressure condition in this area. Armed with information, we devised a new route that would take us farther out over the water, where we would miss the low pressure area and the accompanying strong wind. As a result, a new SOP has been established.

If existing weather necessitates the use of Military Airways en route from Tacoma to Elmendorf and radio aids are lost at any time after passing the Sitka beam leg, an automatic change of heading 45 degrees to the seaward is taken and maintained until reliable Loran coverage ensures completion of the mission. This is done so that if the strong wind is present, the course to Middleton Island will be made good. If not, a course will be established toward the Homer Range, where Loran can be used to advantage. If the reciprocal strong wind is encountered, a course approximating Kodiak will be made good, and Loran can again be used to advantage. But in any case the 45-degree correction will keep the aircraft out of the area of excessively high mountains.

This SOP has been used to advantage. One of our C-54s lost all radio aids shortly after passing the Sitka beam leg and headed for Anchorage. Because of prior experience in this area by both pilot and navigator, the automatic 45-degree seaward correction was taken and Middleton Island was seen through a break in the clouds about five miles west of course. So the wind was there once more.

The 54th Navigator is not unaccustomed to winds in excess of 100 knots at 7000 to 9000 feet. These winds are quite prevalent in the Aleutians where the bulk of our flying is done. In most cases, dependent upon the pressure areas with which they are associated, their speeds rapidly increase, and their directions change from 100 to 180 degrees. These winds, however, have been reasonable and predictable. Therefore, it certainly jolted a few of us to find a completely alien wind of such magnitude, with no visible sign and no possibility of prediction. However, "our wind" was there — we found it — we recognized it — and I believe I can safely say that we exercised good judgment in overcoming it. Needless to say, we are cautious of it. We respect it, and we feel exceedingly lucky on trips where we don't find it. ●



The emergency procedures
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ical Order, it is wise to duck
isoning canopies from all
39's and B-45's—and in any
here motion of the fuselage
the canopy sideways.

the Omni-Range in an -T-18 Link Trainer

ni-range indoctrination de-
een developed at Pepperrell
Base in an effort to give
ts a basic familiarization
iew type range instruments.
n AN-T-18 type Link Train-
ADF system was reversed,
control dial installed on the
trument panel in the train-
serves as the course select-
ilot dials his desired course
and the Instrument Trainer Instructor gets the indications on his receiver dial at the desk.

To accomplish this reversal of the ADF instruments, the transmitter teletorque in the base unit was disconnected, and the instruments were switched in the desk and the trainer. Then the teletorques on these instruments were reversed, so that the teletorque in the trainer which is normally a receiver is now a transmitter. The desk teletorque is changed from a transmitter to a receiver.

The "To-From" indication was solved by installing two lights (similar to the "Z" marker light), beside the course selector in the trainer. These are connected to the 6 V transformer in the fuselage, then to a switch on the operator's desk through two blank collector rings at the trainer base.

No alteration was needed for the vertical needle doubles for this localizer-vertical needle. The ILS vertical needle doubles for this purpose.

The RMI (Radio Magnetic Indicator) has not been duplicated by this base training section as yet, so to find the magnetic bearing to the station, a pilot turns his selected course dial until the deviation needle centers, and the "To" light is on. When this occurs, his magnetic bearing to the station is indicated on the selected course dial.

As the pilot dials his selected course, and changes his position on the map—by flying the trainer, the instructor at the desk follows on the SCS-51 dial and the "To-From" switches.

Alert shack-hanger speeds scrambles.

Prior to setting up this system, there was no opportunity at this base for pilots to get any practical experience with VOR. The Link Section can now, in a one-hour period, give a pilot a good idea of the operation plus some actual practice with a set. Basic familiarization is accomplished by having the trainer "in the straps."

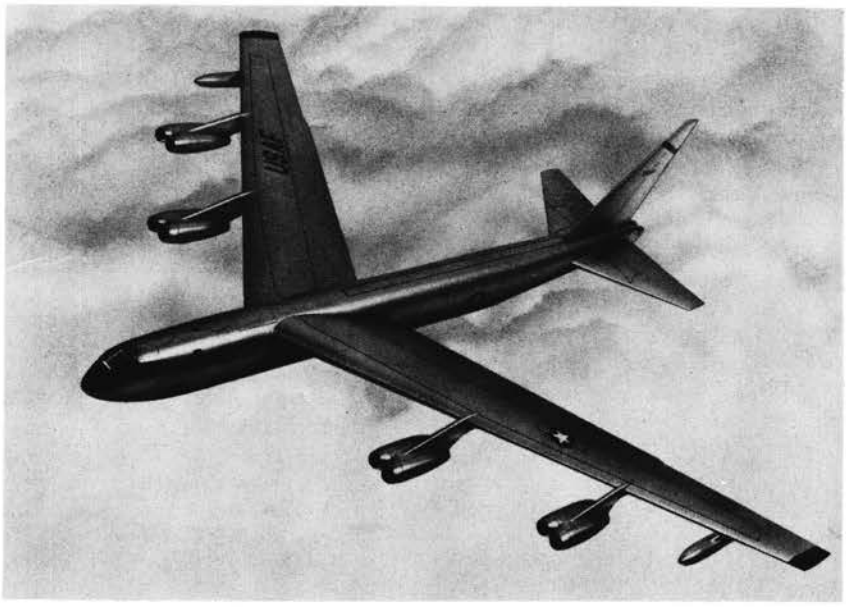
This cuts down the time necessary to check pilots out in the omni procedure. Also, in the past, pilots tended to shun the AN-T-18 type trainer in favor of the later model C-8, while now they show a marked interest in the older trainer, resulting in an increase in utilization.

The project officer, Major Walter C. Cederlund, Base Plans and Training Officer, who has worked with the Link Training Section on this development, finds that, compared to lectures and literature, he now has a much more effective system of getting VOR across to the pilots.

NEW B-52

d opposite is a model of the
A Stratofortress, now in pro-
or the United States Air

del shows the new nose and
partment design, with side-
ats for the pilot and co-
two prototype B-52s now
ve a tandem cockpit ar-
t.
duction model will be pow-
ight Pratt & Whitney J-57
ngines which are mounted
harply raked-forward pods
ler the swept-back wing.
fuel tanks are located un-
wingtip.
52s will be delivered to the
rategic Air Command to
ore than seven" combat
eavy, long-range jet bomb-
ir Force has announced.



afety Magazine
on the flight char-
s and safety angles
addition to our
owing Air Force.

. . . T-29D—Cleaner and faster.

The test crew from Edwards AFB claims the instrumentation of the cockpit is good.

perated with the bypass
ressure position.

vent of complete hydraulic
emergency system using
re from a bottle releases
g gear up latches and op-
main landing gear brakes.

er two hydraulic systems
lternator-generator system
wers the hydraulic drive
the right generator and
ernator) and the cabin
ydraulic system. Pressure
f these hydraulic systems
d by pumps driven by the
ie.

g, de-icing and defrosting
e comparable to those on
rcial model. Wing and tail
ges are anti-iced by heated
by ram pressure to enter
anger muffs installed on
entor tubes. Windshields
-vision windows incorpor-
glass for electrothermal
Prop de-icing is accom-
A. C. powered heating
the leading edges of the
blades. A timing unit al-
routes operating current
ly to one prop and then
r.

ermocouple-type detection
otect the nacelle areas aft
gine shrouds and forward
wheel well aft bulkheads,
ea of the reserve oil tank
cabin floor. Fire warning
located above the engine
panel.

hot extinguishing system
d in the left wing fillet.
n the cockpit enable the
stop all flammable liquid
fire area before discharg-
e extinguisher.

Armed with all these facts concerning the new airplane, we sought out the flight crew who were conducting the acceptance tests. They had set up temporary headquarters in a spare corner of one of Convair's office buildings, where they were busy "reducing data" gathered on the last flight. We found Captain William M. Macruder, pilot for the test flights, engrossed in a slide rule and stacks of notes. From the Flight Test Operations Laboratory at Edwards AFB, Captain Macruder is an engineering graduate of the University of California and has been in the flight test business as an engineer and a pilot for five years. He has taken part in the testing of the H-5 and H-19, and the C-124, C-125, F-86E and B-52.

Co-pilot for these tests was Captain Bailey "Skip" Strain, Flight Test Engineering Laboratory, Edwards AFB. Captain Strain has a master's degree in aeronautical engineering and prior to this assignment was with the Air Force's guided missile program.

The third member of the test crew was the flight engineer, Elden Snowder. A civilian from the Flight Test Engineering Laboratory at Edwards, he also is an aeronautical engineering graduate.

The crew were in agreement that the new trainer is a fine airplane from the pilot's point of view. "The T-29D climbs well. Short field landing and takeoff performance is good. You should be able to get into a 1500-foot strip with no trouble at all, and take off in 2000 feet at maximum weight (43,575 pounds). Single engine performance is excellent. The instrumentation of the cockpit is good. All of the controls are identifiable by feel. There's no shimmy in the nosewheel steering. The landing gear retracts fast — like a fighter. All the emergency procedures seem sound. This is definitely a two-man airplane, of course. The pilot would have a hard time reaching the landing gear handle from the left seat.

"Naturally, there are a few things we don't like. Elevator forces on takeoff and landing are pretty high.

Hot Potato— MATS STYLE

MATS Comes Up With a New Spark for Old Flying Safety Meetings.

G for new ideas to spark
ying Safety program? All
en we hear the old cry,
I use for material in my
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- But it can be done!

as come up with a new
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ilot Judgment Quick De-
cise," and we feel it may
plained by direct quotes
nt copy of their pamphlet.

nphlet has been prepared
ussion method of instruc-
moves more slowly than
ture type. The discussion
certain advantages.

s personalized instruction.
the group members are participants and do not merely listen. They must be on the alert for the moment the leader will call upon them. It is through the cooperation of the group members that an acceptable judgment (conclusion) is reached. During flight, teamwork is essential, and when the same people are led to a "meeting of the minds" by discussion, it is certain that better flying teams will result.

The group leader for this discussion should be the Squadron Commanding Officer, the Operations Officer or the Flight Safety Officer.

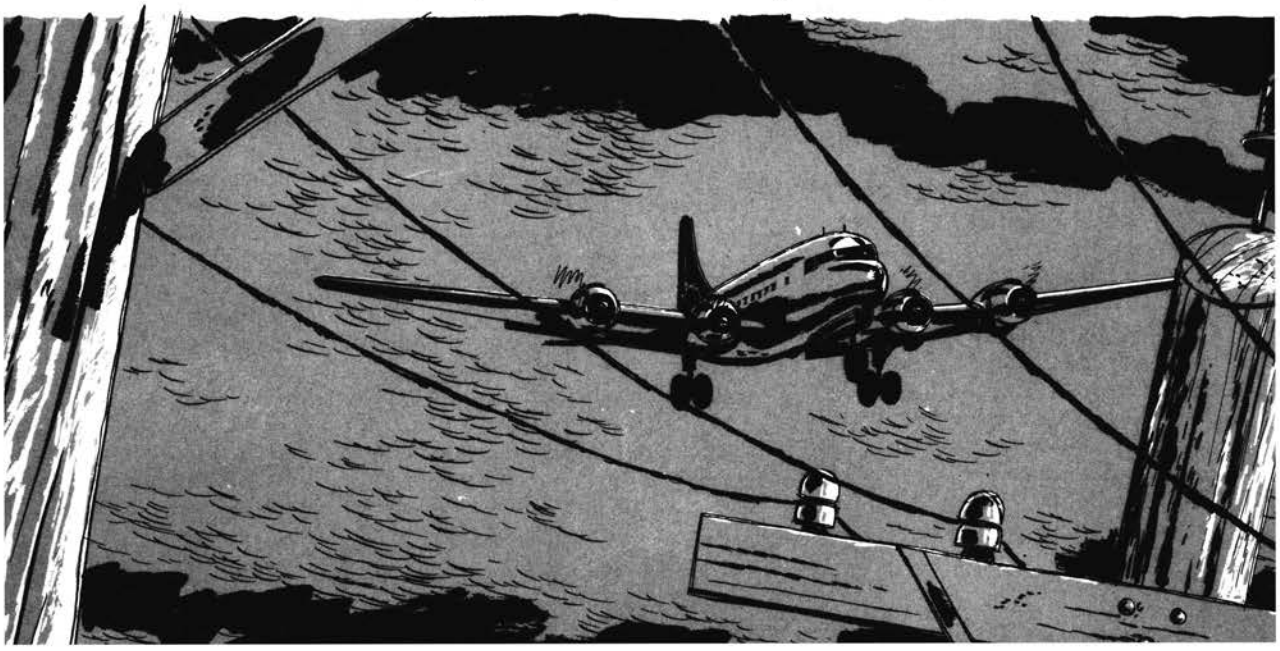
When the Commanding Officer conducts the meeting or actively participates in the meeting, he will have an excellent opportunity to analyze his pilots by their decisions. His presence will emphasize the importance attached to the program.

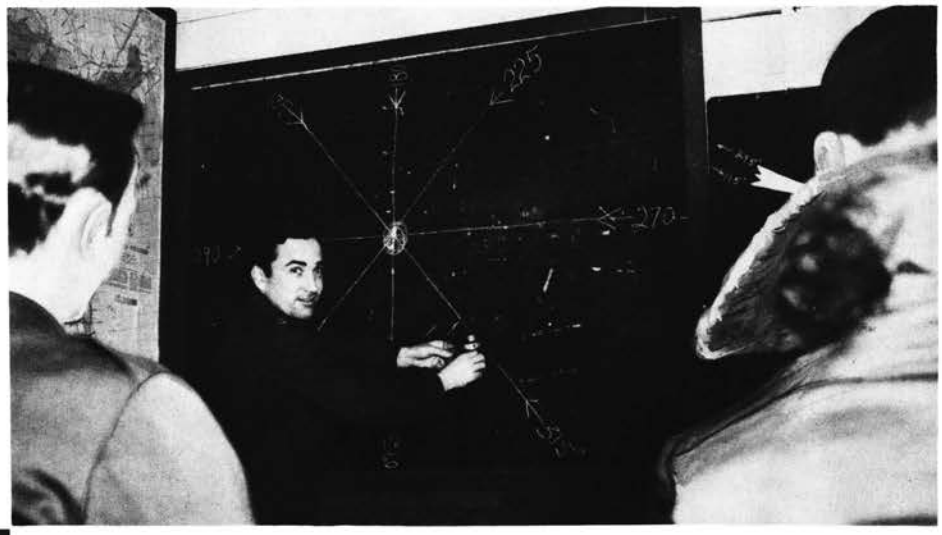
It will be the discussion leader's responsibility to confine the discourse to related facts and judgments. The success of this form of idea interchange will depend upon the leader, and, as compensation, his leadership will be improved.

Since the first fatal accident of Lt. Selfridge, 17 September 1908, while piloting his Wright Flying Machine, human error has been accounting for more than half of the Air Force accidents. Under the causes for human error, the largest and most costly single factor for the many accidents is the pilot's inability to make proper judgments (decisions). In our time of increased aircraft size and complexity, when *one* pilot is sometimes responsible for the safety of more than 100 lives, it becomes apparent that the transport pilot's judgment must be superior.

The information contained in the following exercise was extracted from the report of a C-54 accident which took place at a western Air Force Base; however, it could pertain to any type aircraft. The accident involves some of those judgment deficiencies which are common during Ground Controlled Approaches.

"The aircraft struck the telephone pole 2700 feet before reaching . . . the runway."





ipants must be alert to sion for they may be on at any minute to a direct question.

●

ls greatly aid this type ation. Right and below, ets into the act as group d a member of the nce make a point.

nere maintenance lighting t, and in another instance, y boundary lighting was ne final maneuver to align ft was so violent that it cost ft a wingtip.

Force runway has green king the beginning, and the oundary lights are uniform- not to exceed 200 feet, lo- ctly across from each other. way cannot readily be iden- GCA minimums, you are

st altitude the IP remem- ing on the altimeter was The pilot at the controls ed seeing 600 feet. When positive runway identification could not be made, and a dark object loomed up ahead, the IP started to apply maximum power. The aircraft then struck an unknown object. Immediately the manifold pressure on No. 4 engine went to approximately 60 inches, throttle control was lost, and the cylinder head temperature started to drop.

7. Question: What would you do now?

Answer: When at minimum safe altitude, and control of the aircraft had been established, feather No. 4 propeller.

The IP feathered No. 4 propeller and continued his climb to 9000 feet. During the climb the aircraft began to buffet severely. Ten degrees of flaps were lowered and the climb was continued. At 9000 feet he leveled off, maintained 140 IAS, proceeded to point of departure, and landed.

8. Question: What could be attempted to reduce the buffeting?

Answer: Slow the aircraft. Lower flaps, if necessary. When the flaps are lowered it establishes a higher position for the empennage and the flaps effect a downwash of the airstream.

If the turbulent air is originating within the area of the wing, the flaps assist in removing the empennage from the flow of turbulent air.

Investigation after landing revealed that a two-foot section of telephone pole was imbedded in the leading edge of the wing between No. 3 and No. 4 engines. There was no damage evident to No. 3 and No. 4 propellers, even though it seemed necessary for the pole to have passed between the two props.

NOTE: The aircraft struck the telephone pole 2700 feet before reaching the landing end of the runway, 117 feet to the right of the center line, and 56 feet above the elevation of the runway.

Conclusion

It was concluded that the instructor pilot, knowing the weather conditions and the minimum letdown limitations at his home station, descended below these minimums where the aircraft struck a telephone pole causing major damage.

It was also concluded that the IP did not exercise proper judgment in allowing the student to make GCA runs under the existing weather conditions.

Here we have but one example of how the "Pilot Judgment Quick Decision Exercise" works. We feel sure, however, that after reading this article, you will envision immediately applying these principles of group discussion and it doesn't matter whether your organization flies C-124's or L-5's, the same realistic approach will pay rich dividends.

We feel that the factor of paramount importance centers around the very real "personal touch" of all discussion participants. Every pilot in the group will have the feeling that he will be called on next to answer a question. He's got to have his response prepared long before the question is asked and consequently will be on his toes throughout the entire exercise ready to answer.

Why don't you try this same approach at the next flying safety meeting? Bet you'll be surprised at the response. ●

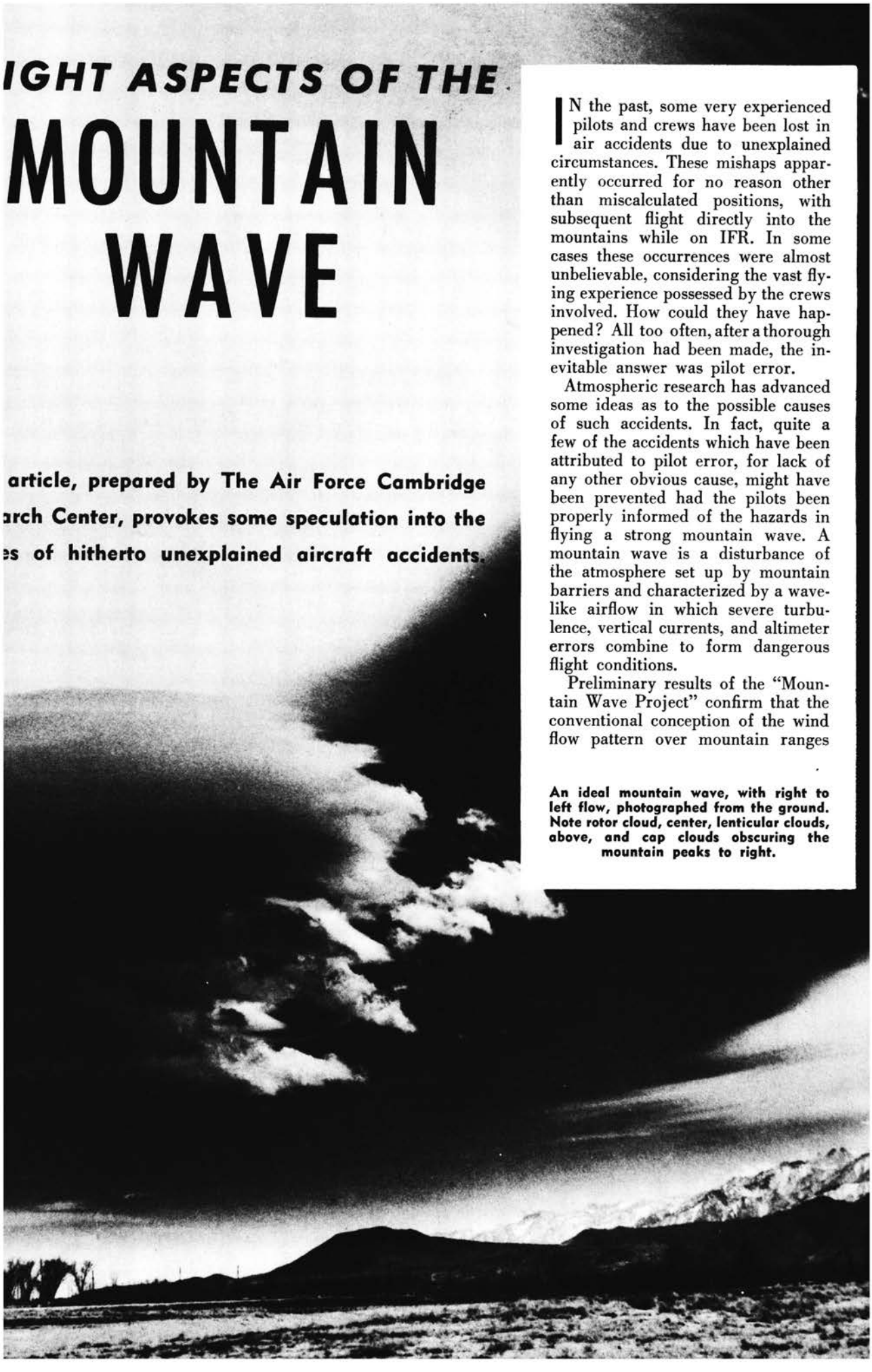
IGHT ASPECTS OF THE MOUNTAIN WAVE

article, prepared by The Air Force Cambridge arch Center, provokes some speculation into the es of hitherto unexplained aircraft accidents.

IN the past, some very experienced pilots and crews have been lost in air accidents due to unexplained circumstances. These mishaps apparently occurred for no reason other than miscalculated positions, with subsequent flight directly into the mountains while on IFR. In some cases these occurrences were almost unbelievable, considering the vast flying experience possessed by the crews involved. How could they have happened? All too often, after a thorough investigation had been made, the inevitable answer was pilot error.

Atmospheric research has advanced some ideas as to the possible causes of such accidents. In fact, quite a few of the accidents which have been attributed to pilot error, for lack of any other obvious cause, might have been prevented had the pilots been properly informed of the hazards in flying a strong mountain wave. A mountain wave is a disturbance of the atmosphere set up by mountain barriers and characterized by a wave-like airflow in which severe turbulence, vertical currents, and altimeter errors combine to form dangerous flight conditions.

Preliminary results of the "Mountain Wave Project" confirm that the conventional conception of the wind flow pattern over mountain ranges



An ideal mountain wave, with right to left flow, photographed from the ground. Note rotor cloud, center, lenticular clouds, above, and cap clouds obscuring the mountain peaks to right.

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trument flight. Heavy gusts

A project sailplane soaring over a mountain wave cloud formation.

make all the instruments dance. The speed drops down, then shoots up, the rpms are changing rapidly and the engine is howling. Several times you hang in your belt without the slightest idea of attitude. You have not encountered anything like this before. You recall a thunderstorm flight which scared you to death but the turbulence was nowhere near this bad.

Suddenly you drop out of the cloud base and the view startles you: everything seems to have changed. X-Mountain looks down on you like a big barrier, the clouds sweeping down its slopes in front of you. You are about ready to turn back when your plane is lifted with enormous power. In heavy vertical gusts your rate of climb jumps to 1000 fpm, later to 2000 fpm.

The leading edge of the cumulus line is now just above you. To avoid being pulled back into the roll cloud you push the nose down. Apparently you now have a good groundspeed and the plane is climbing fast in front of the cloud line which looks like a long railroad train. Suddenly the gusts die out. The air becomes smooth as glass. But your rate of climb is now 2500 fpm. You are stunned by the fact that such extreme degrees of smoothness and turbulence can coexist so closely in the atmosphere.

Looking back after a few minutes you notice that you are already higher than the top of the cumulus line. That should be enough, finally, to cross X-Mountain and the cap cloud. You are now flying at a safe level. Your altitude is 3000 over X-Mountain and probably 2000 feet over the cap cloud. There is no roll cloud line ahead now and you have reason to believe that you are out of trouble.

The foot of X-Mountain lies just below you. The trailing edge of the cap cloud is only one mile ahead. The cloud mass pouring down the mountain slope and dissipating is a fascinating spectacle. The upwind edge of the high lenticular cloud is directly overhead, maybe between 30,000 and 40,000 feet.

The plane makes good headway now but the updraft is slowly tapering off and you have to use more power to keep altitude and groundspeed.

High as you are above the low-level clouds you feel almost—but not quite—safe. This completely smooth air has proved treacherous before and you are not sure what it has in store for you this time. The crestline of the mountain is not yet passed and groundspeed seems to drop again. After another minute the low clouds look nearer. There has been no indication of what your altimeter and rate of climb now reveal: You are descending again at 1000 fpm, and full throttle does not help. You feel if you can go another mile upwind you should be through.

But once more there is this unfortunate combination of a jetlike headwind and a strong downdraft. You have been running through several consecutive up and downdraft areas.

This is indeed the pattern of an atmospheric wave. In another minute you will know if you can pass X-

stationary roll cloud formed of partially obscured peaks.

the rotor cloud are starting to the lowest lenticular clouds.

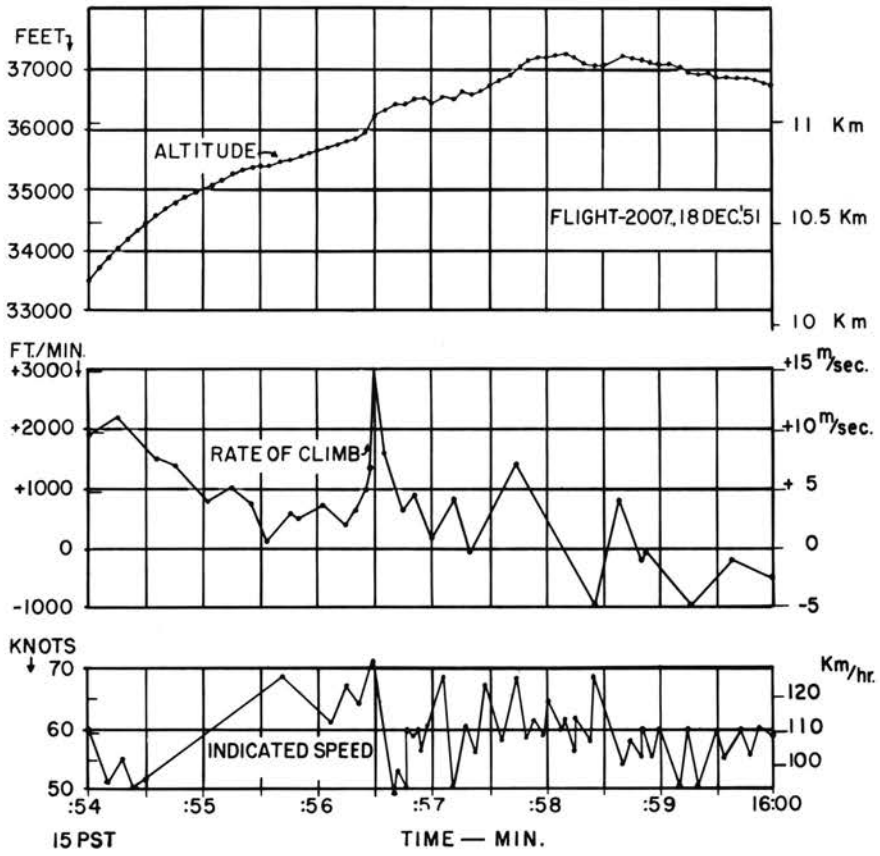

Fig. 2. High level turbulence encountered between 36,000 and 37,000 feet by one of the project gliders in the same wave which is depicted on page 26.

r radar, Raydist and cine-. Time-lapse cameras took ictures of the associated ctures from the ground to t the data taken by the s. Meteorological stations lished on both sides of the range from the valley floor levation of 9000 feet.

were preferred to powered balloons in this project be-ieir small sinking rate, low ieuverability, and accuracy ion. They can remain aloft hours traversing the wave raft areas to gain altitude o their low speeds, can be ivestigate the structure of ulence which higher-speed, al aircraft try to avoid.

flow and Clouds

. is a cross-section depict-onditions generally asso-a typical mountain wave, eorologists often refer to in phenomenon.

ure on page 21 is an ac-graph of such a wave. As n Figure 1, the mountain he left extends to about MSL and the wind flow is from left to right. In the flight described earlier in this report, our pilot was flying from right to left and the diagram illustrates the wave-like motion of the flow and the different cloud types he encountered.

The cap cloud in the lower left corner of Figure 1 hugs the tops of the mountains and flows down the leeward side with the appearance of a waterfall. Since it hides the mountains and is connected with the strong downdraft area on the leeside of the peaks, the cap cloud is dangerous.

Looking from the valley floor toward the mountain this cloud mass sometimes gives the appearance of a cloud wall, which is responsible for the name "foehnwall," frequently used for this cloud type.

The downdrafts can be as strong as 500 fpm. As our pilot discovered, one must have more than the minimum required clearance to traverse such powerful down currents.

Some distance downwind of the cap cloud (lower center of Figure 1) the air shoots up again almost vertically, forming the rotor or roll cloud. At times its base is below the mountain peaks and its top reaches considerably above the peaks, sometimes to twice the height of the highest peaks and occasionally to over 30,000 feet.

The rotor cloud may well extend to a height where it merges with the lenticular clouds to be described in the next paragraph. While often appearing harmless, the rotor cloud is dangerously turbulent with updrafts of up to 5000 fpm on its leading edge, and equivalent downdrafts on its leeward edge. There is a constant boiling motion in and below this cloud.

In overall shape and location, it is effectively a stationary cloud constantly forming on the windward side and dissipating to the lee. There are instances where the roll clouds build up to such a height that precipitation and even thunderstorms form.

Frequently a number of consecutive roll cloud lines extend parallel to the mountain range, each marking a wave crest. The initial roll cloud may be present anywhere from a position immediately to the lee of the mountain peaks to a distance 10 miles downwind. In the latter case one might naturally assume that the lift zone ahead of the rotor would be very broad and gradually taper off.

nditions are favorable for
ɔn of a mountain wave, but
ɔf moisture in the atmos-
events the formation of
is cloudless or "dry" wave
it can approach the waves
discussed in turbulence.
dangerous even to pilots
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instrument flight. The
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has occurred under these

ain Wave Formation

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ɔockets of stagnated air in
It then jumps up into the
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of the rotor cloud, as well
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the existence of the strat-
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er.

RULES FOR FLYING THE WAVE

★ If possible, fly around the area when wave conditions are indicated. If this is not feasible, fly at a level which is at least 50 per cent higher than the height of a mountain range.

★ Do not fly high speed aircraft into the wave; particularly, do not fly downwind. Structural damage may result.

★ Avoid the rotor (roll) cloud.

★ Avoid the cap cloud (foehn-wall) area with its strong downdrafts.

★ Avoid high lenticular clouds if the edges are very ragged and irregular, particularly if flying high.

★ If flying against the wind, updraft areas, especially the one upwind of the rotor clouds, may be used as an aid in gaining the altitude necessary to pass through the downdraft areas and cross the mountain range.

★ Do not place too much confidence in pressure altimeter reading near the mountain peaks.

★ Avoid penetrating a strong mountain wave on instrument flight.

Meteorological Conditions

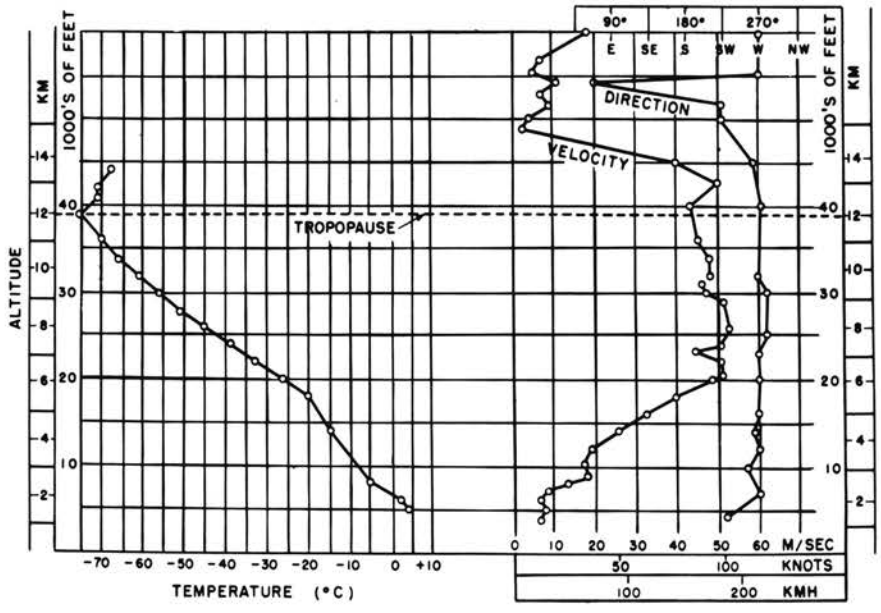
As previously stated, a favorable condition for the formation of a wave is for the wind at the mountain-top level to flow perpendicular to the mountain range. Actually, the wind direction can vary somewhat (50° being the maximum deviation from the perpendicular) and still cause a wave, but the most intensive waves occur with a strong, perpendicular flow. The stronger the flow, the more severe are the effects to be expected on the leeward side.

There is a minimum of waves in summer and a maximum in winter. During the latter season, for example, over a range like the Sierra Nevada, waves can be expected during one out of four days with two or three strong waves per month included.

In the western United States where these waves have been frequently observed, it has been noticed that the strongest ones develop when there is a cold front approaching the mountains from the northwest and a trough aloft approaching from the west. This produces a strong westerly flow over the mountain ranges which have a north-south orientation.

In accordance with the two-layer model of Figure 1 there is generally a stable layer or temperature inversion present on the windward side of the range up to an altitude slightly above the peaks. A pre-frontal area usually includes this condition. The top of this stable layer is just above the cap cloud and dips to its lowest level at a point directly over the downwind foot of the mountain. In

Fig. 3. On the day these charts were plotted a project sailplane soared to a world altitude record of 44,400 feet, with a rate-of-climb which was still over 1000 fpm.



our custom, we're
off this new year
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rget all about our
ons. That's just
nature. But, it's
think of all sorts
of ideas and ideals even if they do spin out of the pattern in short order.

We'd like to suggest one resolution that you'll want to keep forever, even after all the rest fall away, and make this a permanent one. . . .

PLAN YOUR FLIGHT • FLY YOUR PLAN • FLY SAFELY

U.S. AIR FORCE • INSPECTOR GENERAL

AIRCRAFT ACCIDENT AND MAINTENANCE REVIEW

Vol. IX, No. 1 January 1954

ENT OF THE AIR FORCE • THE INSPECTOR GENERAL, USAF

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U.S. AIR FORCE • INSPECTOR GENERAL
AIRCRAFT ACCIDENT AND MAINTENANCE
REVIEW

. 1 January 1954

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TAFF: *Editor:* Major Richard A. Harding; *Managing Editor:* im; *Contributing Editor:* Virginia C. Asmus; *Art Editor:* D. V. roduction Staff: A/1C James D. Laffoon, A/1C Paul E. Robison; *Circulation Manager:* T/Sgt G. J. Deen

ie printing of this publication has been approved by e Director of the Bureau of the Budget, 13 August 1953.

Review Preview

ON BRAKES. . .Our feature article this month represents an attempt on our part to bring you some added information on fighter aircraft brake troubles. We took our material from a special aircraft brake study prepared by Mr. Arthur Kush of the Directorate of Readiness and Materiel Inspection, OTIG, USAF. The approach is admittedly somewhat of a departure from the usual "do" and "don't" vein, but we can't blame Mr. Kush for that. He prepared the study for an entirely different audience, and we think he did a bang-up job. So much so, in fact, that we thought you'd find the background details generally informative and helpful. If you have a spare minute, send us your reaction.

TORQUE WRENCHES. . .Our old chum Lou Snutt sort of got himself in the middle here a couple of months ago. It seems that Lou was the instigator of a lot of argument about what you could and could not do with a torque wrench. To set Lou straight (and ourselves, as well), we asked Proto Tool in Los Angeles if they'd supply us with the ungarbled word regarding these wrenches. You'll find the result on page 14 of this issue. Our thanks to Mr. K. L. Connor for coming up with what we believe is a darned fine bit of business.

SCHOOL DAYS. . .Nothing does us more good (payday excepted) than to have our readers contact us about an interesting approach to a problem that has been tried and proven. That is essentially the case with Mr. Bartley Tillotson, who is Base Fire Chief at Ellsworth AFB. In the October REVIEW we ran a short piece suggesting that it might be worthwhile for bases to alert key civilian agencies about the problems that can occur in rescuing personnel from crashed aircraft. Mr. Tillotson agreed with us 100 per cent and then went one step beyond that by telling us how they implemented just such a plan at Ellsworth. See our center spread for this month.

COVER. . .Not much need for comment here, except to say that one each Don Kelleher has come through again.

t fighter rcraft

and the piston moves clamping the disk be- two pucks. When pres- lifted from the brake ie piston (being spring returns to a predeter- ing-disk clearance.

)ual Disk Brakes

lual disk brake consists elf-adjusting two piece assembly (a center car- two ring-shaped disks). sing consists of two castings: the cylinder and the anvil. The two are joined together to J-shaped throat, through ie brake disks rotate. te disks are keyed to h the wheel and to move on the wheel drive keys. e cylinder housing con- ee pistons, which are from the inboard side ousing. When hydraulic is applied to the brake the outboard lining is ainst the first disk, which the lining in the center l forces it and the linings the second disk. The isk is forced in turn ie anvil linings, causing action. Each of the eceives equal braking

on, hydraulic fluid leaked use of failure to safety screw, and brake linings because the piston would ict. The probable cause atter failure was sludge ity and dirt in the system.

-33 Failures Told

later T-33s use the dual e brake. Two assem- P/N 9540281 and P/N are used interchange- ring the period covered study - 21 URs were re- the braking system of lane. Of the 21, failure carrier assembly center l for twelve writeups. screpancies were puck lures, four; brake housing , one; self-adjusting pin, iston assembly, two. analysis of the carrier showed that the centers g installed backwards, he guide pucks are not roperly on the disks. correctly installed, the ick rides on the disk ie anvil side of the brake of the disk nearest the ide. Another item, that self-adjusting pins, had om overtorquing, with and broken threads as a result. (See torque wrench article on page 14 of this issue.)

The F-94A and B series use the same brake as the T-33. Here is a breakdown of the failure factors on this airplane for the period covered by the study.

Of the 14 URs submitted, three were puck failure, five were piston assembly failure, one was brake housing failure, three were guide assembly failure, and one each were charged to the self-adjusting mechanism and to the disk.

F-84 Problems

The F-84E and G series, using the dual disk brake, showed up with 21 URs on the brake system. Here again brake housing failure led the list with seven writeups. Puck failure and cylinder failure ran close seconds with four each.

An analysis of the failures showed that pucks are rotating on the retainers, and that dirt and gravel are entering the brake assembly. Brake housing castings are cracking and warping, and brake housing cylinders are being gouged and worn out of round where contacted by the pucks. This wear seems to be primarily due to sand and gravel which act as abrasives.

Other discrepancies include improper clearance when the piston fails to reposition after brake release, puck failure, overheating, and pitting and corrosion. Here again, overtorquing of the self-adjusting pin shows up, with subsequent failure of the threads.

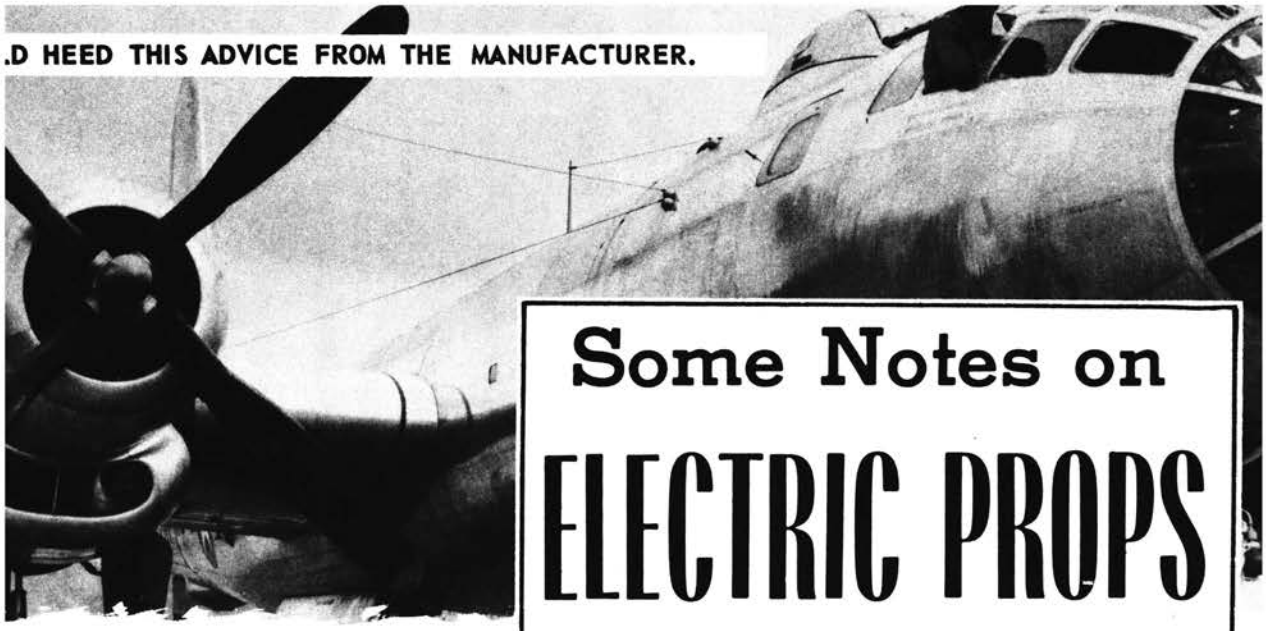
F-86D Segmented Rotor URs

The F-86 comes equipped with the segmented rotor brake. For the 21 month period covered by the study, a total of 47 URs were submitted. The high count went to excessive or uneven wear category, with 25 URs. Other weak points seemed to be rotor segments and links, 13 URs; and nine miscellaneous URs not in definite or repetitive categories. The failures of the rotor segments were attributed to overheating, cracking, as well as scoring and binding. The excessive or uneven wear of the brake lining is believed to be caused by constant riding of brakes on takeoff and landing rolls, or during fast taxiing.

Another cause of undue wear is improper friction force on the adjuster clamp. At one base, 10 brake assemblies were discovered with friction load settings

SEGMENTED ROTOR

.D HEED THIS ADVICE FROM THE MANUFACTURER.



Some Notes on ELECTRIC PROPS

ıe exception of the B-36 installation, all pitch :ircuits are conducted :h change motor through ler brush block. Because t is essential that the k is properly maintained, that all pitch change ll operate satisfactorily. s malfunctions have :om trouble in the brush : stemmed directly from : line maintenance. Curtiss propellers are :d in your activity, be :ck the following points: serve all T.O. require- rding inspection times.

ıring inspections, make slip rings, brushes and lders are clean. This circuit resistance and ıkage.

amine brushes carefully beyond the arrow mark, le wear. Check brushes novement in the guides sing them, and observ- return. If necessary, le the block assembly gh cleaning. Remember brush contact on sticky ieans poor commutation. ımine blocks for chipped :d varnish. Brush dust in cracks and cause a ck between brush rows, result in a short circuit. ppens, there is a good / of a complete loss of :ontrol in flight. Cracked :ans block replacement.

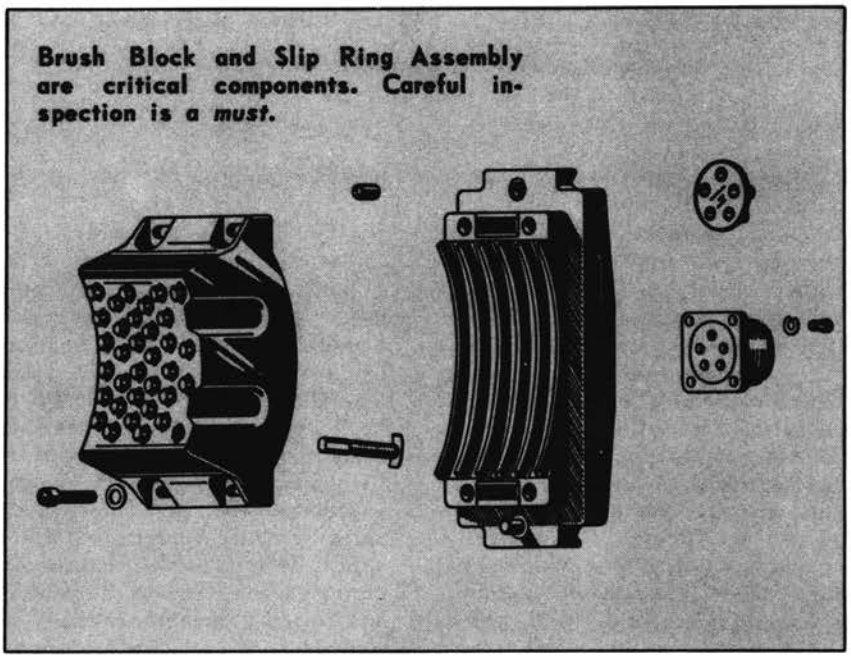
5. Examine slip ring separators for cracks. Here too, brush settles and forms a carbon path.

6. The T.O. requirements on slip ring wear permit a maximum of .20 inches depth, providing the groove is smooth. This latter qualification is very important, because any sharp edges in the metal will cut the brushes and cause abnormal wear.

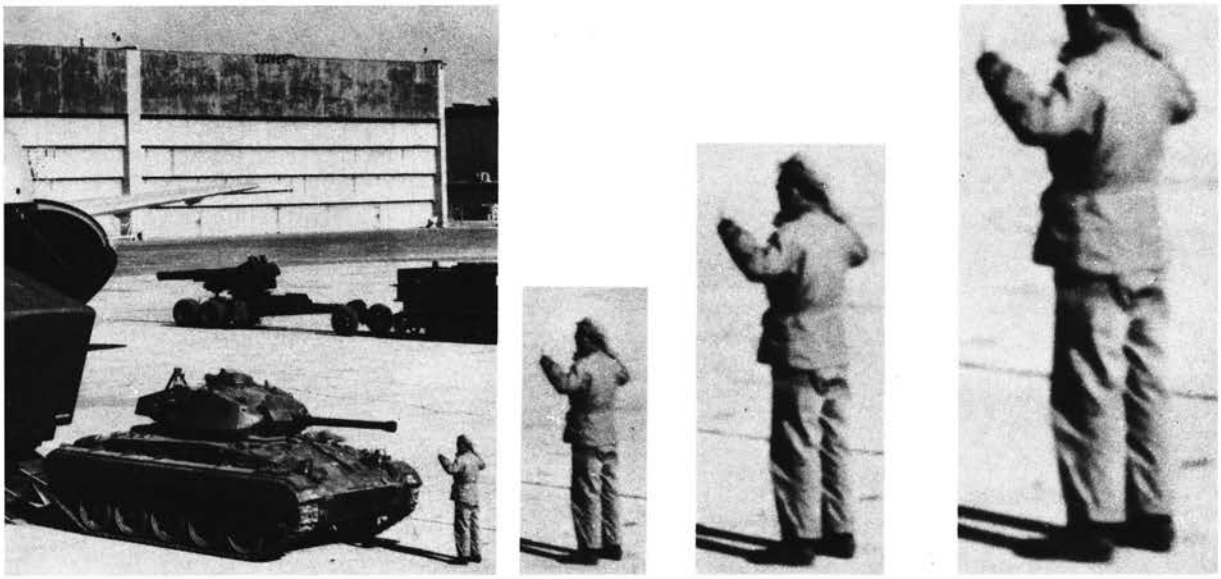
7. Do not attempt to install a brush block if the material extends completely beyond the guide. Any attempt to install a block with brushes not properly positioned in this guide will result in breakage and short circuits.

8. When you install a brush block, make certain that it is properly aligned according to the T.O. If the brushes rub on the insulators, you will get rapid side wear, poor commutation and a weakened brush. There have been instances where the brush block was axially mal-aligned with the slip ring. The result is poor brush tension, rapid wear and broken brushes, to say nothing of poor commutation. ★

$ $ $ $



Brush Block and Slip Ring Assembly are critical components. Careful inspection is a *must*.



s gun is LOADED

e electrical lead to the
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unless all circuit tests
ı completed and the CB
switch on the flight
panel is in OFF position.
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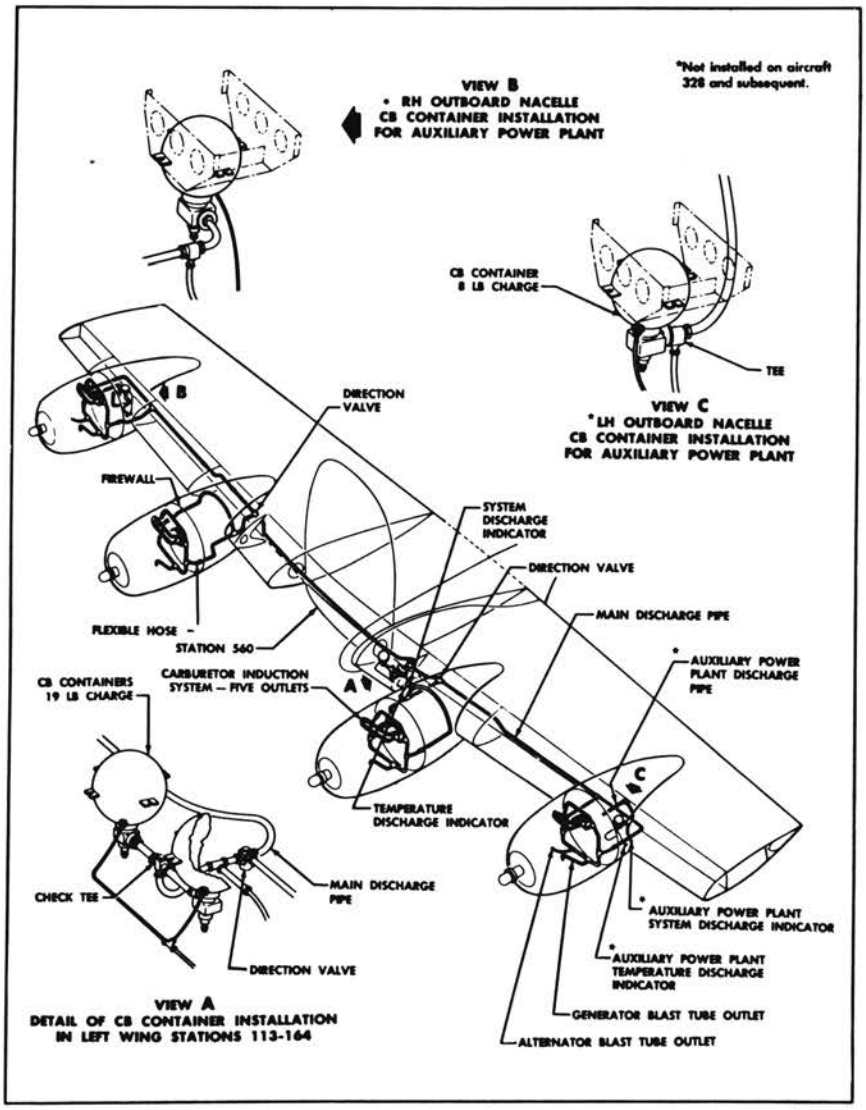
oint through the contact
and through the cartridge
(the ground) MUST be
ɔy using a suitable con-
evice. The continuity
ed must limit the test
ırrent to *less than one*
ough the cartridge.
rtridge must be installed
in the bonnet and the
terminal attached to the
sembly.
one lead of a suitable
tester to the electrical
ssembly and one lead to
l of the bonnet or to the
structure. The continuity
ɔuld indicate a through
circuit.
bove procedure will de-
satisfactory cartridge
n. If continuity is not
through the cartridge
ıd, detonation cannot
:ed; consequently, mal-
ɔf the fire extinguisher
ill result. If, when cir-
checked, a complete
ground is not made and
attempts to mate the
in the bonnet fail, the
should be replaced. ★



H SIX WILL MINIMIZE THIS DIFFICULTY. IN THE MEANTIME, CHECK THAT ACCUMULATOR.

ıout this point, the pilot aileron "kick" in the stick. He also noticed alternate flight control ımber light was burning, flicking on and off. The light control system hy- ›ressure had dropped to ich was a sign that the had failed. The pilot ely switched on the flight control system, intermittent transfer of ›etween the normal and systems still continued. re that the pilot manually n the afterburner, turned he alternate system, and ›ower to 75 per cent. hen extended his speed owever, as power was re- nd the airplane slowed e controls became rigid. lane started a 20 degree then rolled to the left in dive out of control. The ght the airplane down to et and then ejected.

the accident the pilot rviewed. He stated that he time that he lost his ystems there was no indi- f engine malfunction. It obvious that the electri- m was in working order, the dive brakes operated after the primary flight stem went out of commis- addition, the alternate ıtrol pump motor (electri- ven) was turning over at of impact.

ıse of the nature of the , the cause of the normal ıtrol failure could not be d. The hydraulic pump the system was torn ınd no malfunction or failure showed up upon n. When the hydraulic ›perating the alternate ıtrol system) was disas- deeply scored gouges on › shaft and inner pump indicated that this pump operating at the time of

eviously reported, during ight check the alternate control system cycled excessively. It required only one 360 degree motion of the control stick to exhaust the accumulator pressure completely, although normally the system is not exhausted until the flight controls are fully actuated at least three times.

A point that must be stressed in any discussion of control accumulators is that they are of piston design, and a certain air volume, as well as air pressure, is necessary for efficient operation. Air pressure alone is no indication of proper functioning.

The fact that the alternate system pump was operating, plus accumulator design characteristics made it evident that the probable cause for the failure of the alternate flight control system was insufficient air volume in the alternate accumulators.

To prove this contention, a ground test was made with another F-86D on which the alternate accumulator air volume had been reduced below the necessary minimum. The result was an identical pattern to the difficulties experienced by the pilot of the F-86D before he ejected from his airplane.

In addition, it was discovered that the alternate flight control system pump is not capable of supporting wide motion of the control stick under this condition. After the alternate system accumulator pressure has been exhausted, the output of the alternate hydraulic pump is not high enough to build up accumulator pressure and support flight control movement at the same time. The result is an intermittent locking of the controls, ending up in complete loss of aircraft control. In this particular accident the constant moving of the control stick, to counteract the change in pitch attitude when power was reduced and the dive brakes extended, exhausted the accumulator pressure because the volume of air was insufficient.

The alternate flight control system accumulators had been serviced in strict accordance with the existing T.Os. the day before the accident. The gages on the accumulators register air pressure only, and there is no provision for indicating air volume. A review of the proper T.O. showed that the only instructions given for servicing these accumulators are that the hydraulic pressure is to be relieved by actuating the controls prior to servicing. This recommended method allows the hydraulic fluid to be trapped inside the accumulator, preventing full downward piston travel, and reducing cylinder volume on the air side. Under this condition complete air injection is impossible even though the required air pressure is present. The solution to this problem is the devising of a means to insure that all hydraulic pressure is completely withdrawn from the accumulators while they are being serviced with air.

As a result of this accident and the ensuing investigation, T.O. 01-60JLC-2 and T.O. 01-60JLC-6 are being revised to include procedures that will insure that alternate flight control systems accumulators are adequately serviced and inspected for *air volume* as well as *air pressure.*

However, until these T.O. revisions are published and are in the hands of the personnel concerned, local action should be taken to complete proper inspections of the accumulators for both air pressure and air volume. A double control system failure such as this may occur only once in a thousand flights, but it could happen again, under less fortunate circumstances. ★

fuel cells are removed
raft, the internal bracing
t be removed. However,
e cell is prepared for
, the ribs are frequently
ced. Some makeshift de-
h as a board inserted in
ss hole and attached to
of the crate, is used to
he tank from collapsing.
on damages the tank inner
l results in irreparable
o the cell. *Internal braces*
cessary component of the
and must always be re-
in the tanks when repair
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of T.O. 03-10J-5 in the
and storage of these
mits weather-cracking and
o damage the inner seal.
elessness can render the
as irreparable as if it
naged by physical action.

TECHNICAL INSPECTION Notes

Each cell should be sprayed internally with a light oil when fuel is drained, in order to protect the inner seal. Storage provisions must also be adequate to protect the cell from weather extremes.

Consult T.O. 03-10J-5 and treat your reparable fuel cells as the valuable item they actually are. B-47 stocklist prices show that these cells are valued at from $1,400 to $3,000 apiece.

Careless Handling of B-8 Stick Grips

Failure of the four-way trim tab switch located in the B-8 fighter aircraft stick grip has been the subject of numerous Unsatisfactory Reports. At least some of these failures may be attributed to careless handling of the grip by personnel working in the cockpit.

The stick grip contains a delicate silver disk which can be damaged easily if the grip is struck with a solid object. Personnel working in the cockpit area should avoid hitting, kicking, or dropping tools on the B-8 stick grip while getting in or out of the cockpit.

T.O. 01-1-632 (dated 9 October 1953) outlines the necessary precautionary measures. All personnel entering the cockpit of fighter aircraft should be familiar with this Technical Order.

Keep It Clear

Even though numerous reminders have been given crews and maintenance personnel, various items (such as cushions, books, T.Os., Forms 1, and tools) are still being placed on the gun sight combining glasses in fighter aircraft. This can cause the glass to chip or crack.

Care was taken in the manufacture of the combining glass to insure an optically clear sight for better gunnery. Chips and cracks distort this sighting reference and cause an inaccurate firing pass.

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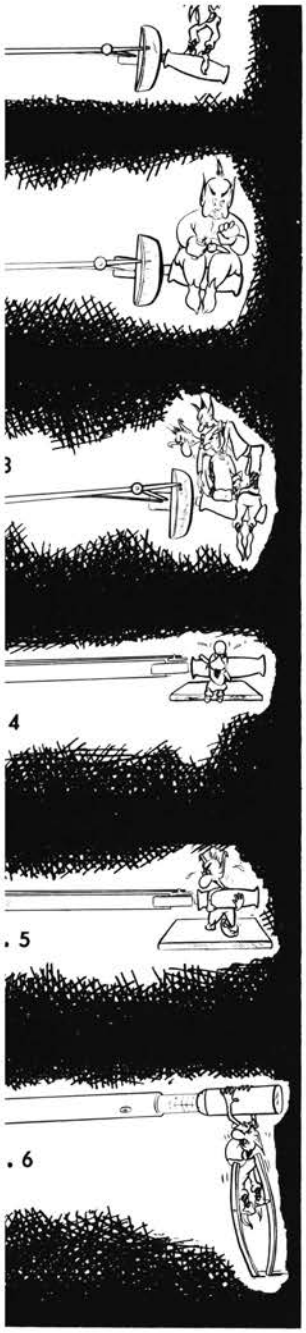
pinion that the inspec-
lubrication requirements
ngs presently set forth
on V, AN01-60JL-6 are
. If bases will comply
se instructions at speci-
rvals, this frequent in-
of bearings should result
tection of latent defects
prevent the advancement
conditions.

Dangerous Selenium Fumes

Improper handling, abuse or malfunction of selenium rectifiers can result in serious injuries or illness. The rectifiers are integral parts of the radio equipment, K-system radar equipment, landing gear circuits and anti-skid relay circuits. Many of the rectifiers are inside the pressurized compartments.

When selenium rectifiers fail, selenium dioxide fumes are usually liberated. These fumes are poisonous and may cause lung damage. Selenium powder from a burned out rectifier will cause burns on the skin similar to those caused by caustic soda. The selenium may then be absorbed from the burns into the blood stream and thereafter produce damage to the liver and other organs.

If a unit containing selenium rectifiers becomes defective, immediate measures should be taken to disperse the selenium dioxide fumes before starting investigation or repair of the defective unit. And there is one other important reminder that has a definite bearing upon the situation. The compartment containing the rectifiers should be thoroughly ventilated and the rectifiers allowed to cool before removing them from the airplane. ★



rque Wrenches

T.O. that covers the job he is doing. When que value is reached, :h automatically releases precluding any tendency que the job.

length of the handle of ting type wrench is not , because it has no the torque being applied. ench operates on the principle of overcoming the load of a specially calibrated spring by means of a linkage mechanism. The linkage always remains the same. Because this linkage is constant, you can see that the overall length or position of the hand on the wrench handle has no effect on the torque applied. Regardless of the pressure applied on the handle or the length of an extension hooked onto the handle, when the pre-set torque point is reached, the mechanism releases at the proper torque value.

Now, let's look at the effect of adapters or extensions when used on the square drive end of a torque wrench.

First, we must consider the various principles of the two types of torque wrenches – beam and limiting. If an adapter or extension is used on the drive end of the beam wrench, the effective length of the wrench is changed (See Figure 3). In that case, certain computations must be made based upon the original formula, "Distance Times Weight Equals Torque."

If an adapter of the type shown in Figure 4 is used, the effective length is not changed and no computation is necessary. But remember this simple rule – if you put a shop-made extension on the handle end of a beam type wrench, you are bound to change its reading and its accuracy. It's bad shop practice and nine times out of ten, is a needless one!

In the adjustable limiting type torque wrench, any *adapter* that changes the effective length of the wrench must be computed as follows: Measure the adapter from the centerline of the square drive to the centerline of the socket. Multiply this figure by the constant factor that the manufacturer supplies you for computing adapters (See Figure 5). If a handle extension is used on the limiting type wrench, no extra computing is necessary because the extension does not change the effective length.

However, bear this in mind. If you are using the proper size torque wrench, you should never need to put an extension on the handle to get the proper torque value. If you have to stick a length of galvanized pipe over the end of the wrench to get a reading, your wrench is too light for the job. If the wrench is the correct size, you can easily reach the desired torque reading by using your hand alone. You gain nothing by overtorquing, and you may cause an accident at some later date.

Although torque wrenches are made to stand up under severe use, remember they are still precision tools. They should never be used as hammers nor as crowbars. They should be inspected periodically, and care should be taken in their cleaning. Never scratch or mark the beam of a beam type wrench, as any marking on this beam will change its tension and will give incorrect readings. As a double check, whenever a torque wrench is inadvertently dropped, it should be recalibrated and thoroughly inspected.

The importance of using a torque wrench for practically every nut, bolt or fastener application cannot be overemphasized. Without it, it is very possible to overstress a nut, bolt or fastener. To illustrate this point, let us compare a bolt with a rubber band. A rubber band will stretch just so far and then break. This breaking point is known as the elastic limit. This same condition is found in a bolt. When a bolt is tightened to its elastic limit, it breaks or loses its holding strength.

In addition, overtorquing can distort light assemblies to the point of malfunction. For instance, a spark plug can easily be overtorqued so much that the points may be changed as much as two or three thousandths over or under the proper setting. The result is malfunction and a misfiring plug.

Get the torque habit, and remember, "Torque Tight and Torque Right." ★

$ $ $ $

ANOTHER EXAMPLE OF HOW THE AIR FORCE AND THE LOCAL AUTHORITIES CAN COOPERATE IN SOLVING A MUTUAL PROBLEM.

ool Days

"school day" included demonstrations, actual fires, flight demonstra- d exhibition of various USAF aircraft.

program began with: and demonstrations on dure for removing injured ed men from different ilitary aircraft. Detailed scue procedures were for the B-25, C-45, F-51, B-36.

:chool then moved on to iutions to be taken in e fighting. The guests received instruction on bombs, guns, demolition charges, flares and jet seat charges. Members of Ellsworth's fire department explained crash fire fighting operations, including positioning of trucks, fire fighting formation, procedures when fire is near gasoline and oil tanks, oxygen and magnesium fire techniques, and extinguishing crash fires with pumpers. A brief lecture on security measures at crash scenes was also included.

Small booklets (inexpensively reproduced by office machines) were distributed to each guest attending the Fire Chiefs' School. Each booklet contains crash rescue diagrams of five types of USAF aircraft – the F-84, C-47, C-45, B-25 and B-36. These simple line drawings show the location of crewmembers and passengers, fuel tank capacity and location, position of batteries and armament, and points of normal and forcible entry.

Outdoor functions were implemented by classroom lecture and open discussion.

These diagrams are similar to the crash rescue charts we described in previous issues of the REVIEW and which we recommended be reproduced locally for the use of Air Force crash and fire personnel. (Air Training Command is now preparing such charts for each type of USAF aircraft, together with a handbook on the subject of aircraft crash rescue. Locally produced charts will fill an interim need until the ATRC charts are ready for distribution.)

When the base fire chief at Ellsworth sent along an account of the First Annual Fire Chiefs' School, he inclosed copies of letters received from some of the civilian agencies who had been represented at the school. These letters were unanimous in their praise for the course. As one guest of the school said, "The one lesson brought out clearly, and very well demonstrated by the fire crew, was that team work, training and planned movements make it possible to attack aircraft fire at its heart without endangering men and equipment; and that it is possible to control such fires with equipment which most (civilian) fire departments have in their stations."

A program such as Ellsworth's naturally requires a great deal of time and careful planning. But its worth is obvious. The civilian agencies have the personnel and equipment to effect crash rescue and fire control. And often they are able to reach the scene of an aircraft accident before the military. They are willing to cooperate not only as a service but also because a fire started by a crash may spread through forest which is under their jurisdiction. Perhaps the success of Ellsworth Air Force Base's "school day" will encourage other bases to arrange a similar program. ★

on sense tells us that dur-
:k we won't, or shouldn't,
ted to just "lower the
hout a hood, or take the
a "straight and level"
ıtry and not even attempt
tdown or a GCA.
ldn't be permitted" was
because it's no secret
ccasionally does happen.
:st conscience shouldn't
: logging of PH or PW
ctually having been at
ls under the hood or in
Think it over.
1941 and 1942, regula-
ıitted instrument checks
en in a Link Trainer.
re several pilots who
heir instrument ratings
r doing a satisfactory
and beam problem.
s also permitted any
held a current card,
of how it was obtained,
another pilot and issue
rument rating.
t's face it. Times have
Just because we did it
etter, got away with it
o sign that we should
ıway with it or anything
ches it today.
ımber of lives lost and
ecked because of faulty
flying during that
; evidence enough that
p-to-date effective in-
and training system
sary.
nen, the program has
lished. 60-2 is adequate,
the pilot who logs just
ıum number of hours
ıusly flys every minute
"actual" simulated or
conditions rehearsing
;ency procedures and
owns!
ıis kind of effort, the
be fooling himself or
; section, nor will he
bluffing the instrument
. The old timers won't
into dangerous habits
)-hour boys, who mimic
mers, will not be devel-
"warped attitudes."
ment flying will become
just safer – it will be
ıd more enjoyable.
ıll recognize the right
in instrument flying! ★

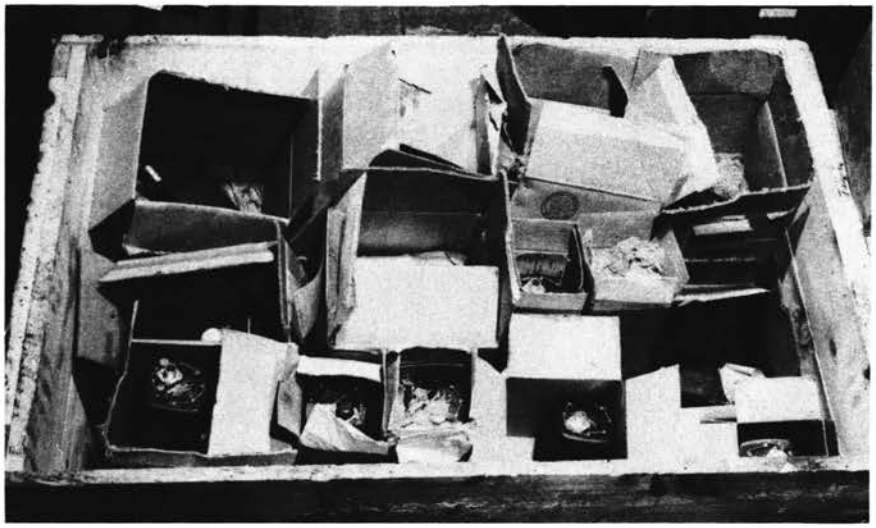
$ $ $

POOR Packaging

On the average, 10 to 12 per cent of all the supposedly reparable instruments received by depots are excessively damaged. Poor packaging and rough handling are primarily responsible.

Even if the instruments are not a total loss, such carelessness increases the cost of repair three to four times.

Perhaps these photographs (actually taken on the spot) will give you some idea of what NOT to do. ★



ORROSION

hod of Computing ctional Area Reduction Caps and Wing Skins 8(DC-6) Airplanes

ross-sectional area re- computed in the follow-

rdwise measuring bands n width are layed out corroded wing surface manner that they can ated at a later date. isting skin thickness are taken along the ally corroded or chafed band, after removal osion. The readings are a chart based on the in thickness gage.

e amount of material om the spar cap cross ong the same measuring nputed.

wing skin reductions mount of material re- the spar caps are then

total cross-sectional tion is then checked structural limitations

ual inspection, locate f deepest corrosion or let chafing. Past ex- indicates the most a to be adjacent to the edge of the nacelle

recommended that the llets be removed to measuring bands, and bands be layed out in nner that they can be at a later date if ent is required.

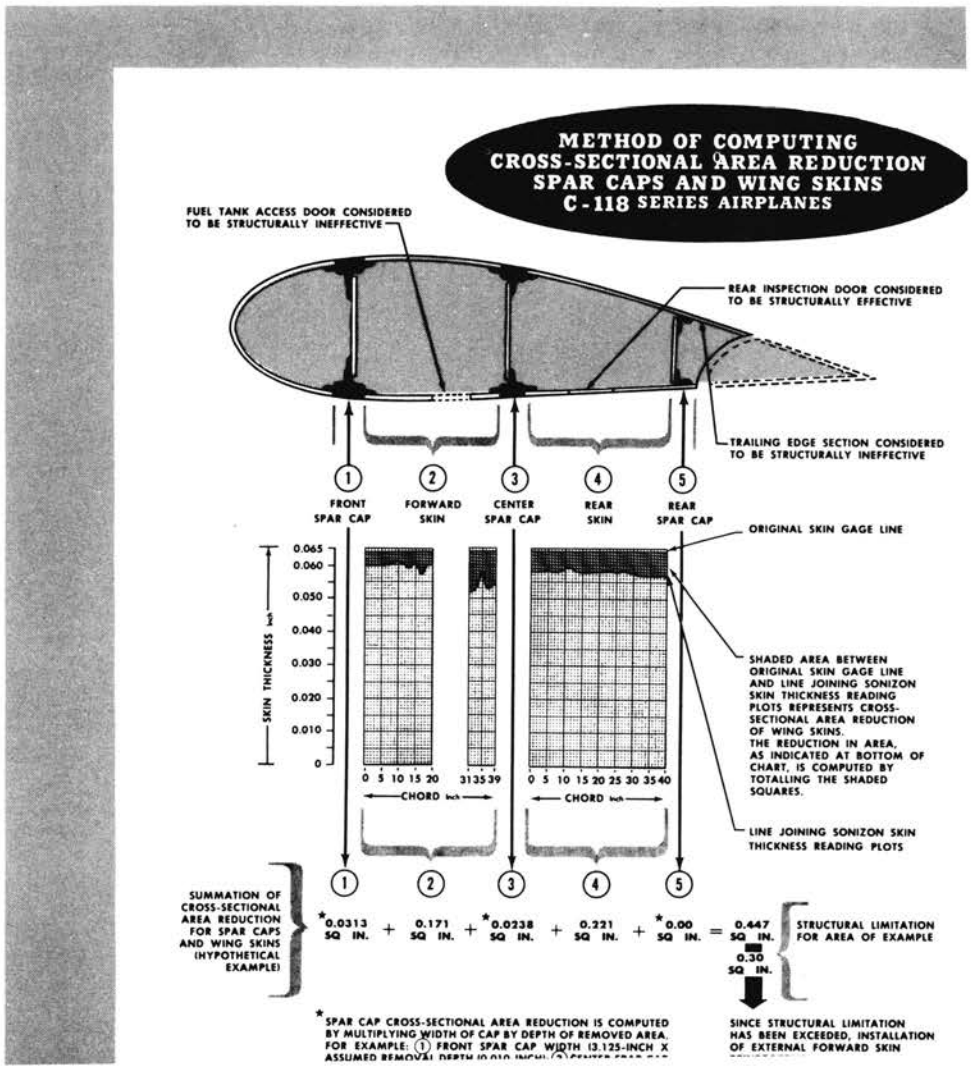
a grease pencil, mark ordwise lines on the ng surface at 1½-inch tervals.

If it is impossible, by visual inspection, to determine the chordwise band which would have the greatest cross-sectional area reduction due to corrosion or chafing, probe and plot several bands and select the one on which the readings are the most critical.

Computing Wing Skin Area Reduction

After the 1½-inch measuring band that is located in the area of deepest corrosion or nacelle fillet chafing has been selected, make a chart similar to the one used in the example. It will be noted that the horizontal base line of the chart indicates the measurement along the chordwise dimension (in inches) at the region involved, and the vertical line is based on the original skin gage.

After complete removal of corrosion on the wing skin, with the aid of a Magnaflux Sonizon unit or equivalent device, take existing skin thickness readings at approximately 3-inch intervals chordwise along the selected 1½-inch measuring band. Plot the skin thickness readings obtained by this means on the chart. The shaded area between the existing skin thickness line and the original skin gage line represents the cross-sectional area reduction for the wing skins. The reduction in skin cross-sectional area may be computed by determining the area between the original skin thickness and the remaining skin thickness lines on the chart.



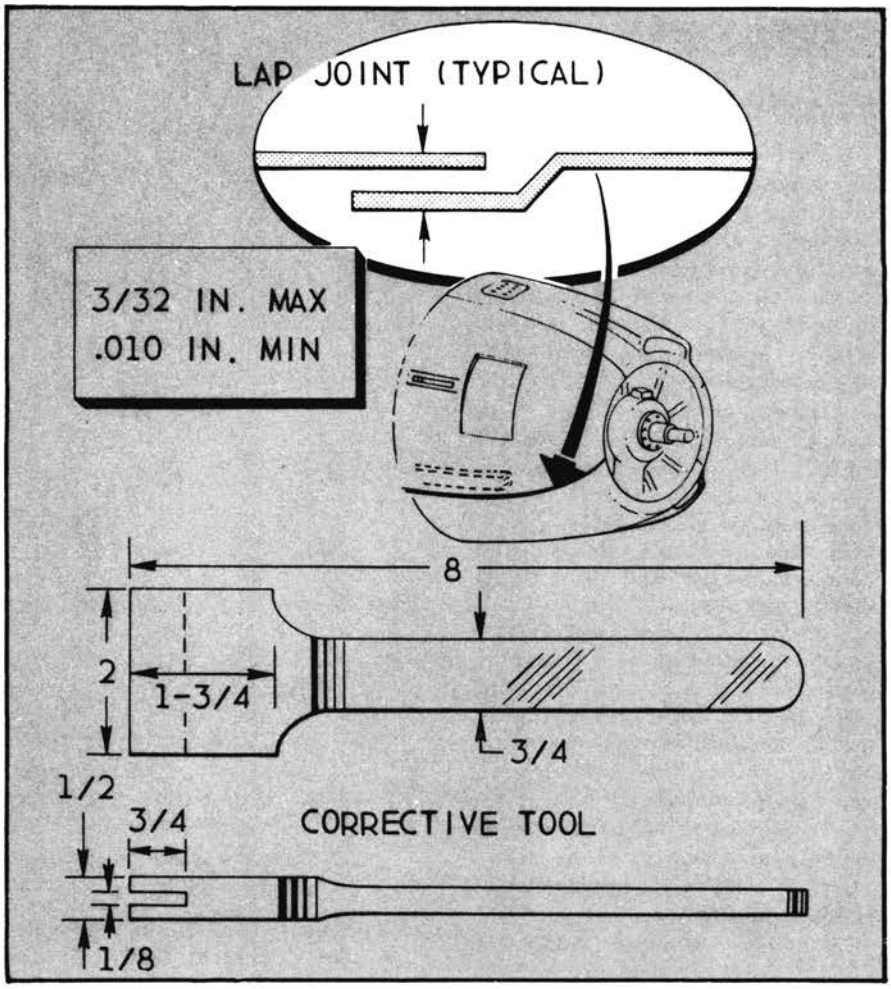
T-28

ling Damage

ıction clearance in the
s between the sections of
l cowling is being lost
aintenance in the field.
ary chafing damage to
ing surface is resulting
e various sections are

recommended that all lap
the cowling be checked
ınimum required clearance
in the illustration. The
are located on the sides
cowling wherever the
intersect.

illustrated corrective
be fabricated in the field
to the dimensions shown.
end of the tool is fitted
edge of one of the lap-
aces and sufficient force
d to the handle to re-
the joint clearance. ★



Vibration ?

files is a recent report
a T-33A. The elevators
ned by the ignitor plug
the number 14 combus-
ıber. Luckily, the pilot
to free his controls and
rmal landing.
edly, there is the pos-
at this connection could
ed loose from vibration,
it is considered very
This is particularly true
per torque was applied.
if further investigation indicates that the possibility does exist, a T.O. will be published requiring lockwiring.

Here is a far more plausible explanation of what happened. A mechanic could well have removed this lead and propped it under the nearby tubing while inspecting the ignitor plug. He then failed to re-attach the lead. Thus, vibration would cause the lead to work loose from its position under the tube and jam the elevator controls.

SOUP SCOOP

B-29 crew members have occasionally been utilizing the voltage regulators and the turbo amplifiers as heating units to warm their food during flight. This practice is not recommended since it constitutes both a fire and flight hazard.

The placement of food containers on the tops of amplifiers and voltage regulators will cause the units to retain heat. These units have a maximum safe operating temperature; consequently, heat buildup should be avoided.

Another danger to consider when using this equipment as a food warmer is that in the event of spillage, container contents could seep through to the electrical base contacts, and thus short out any or all of the components in that area. In the case of the turbo control amplifier, such a malfunction could affect the safe operation of the airplane.

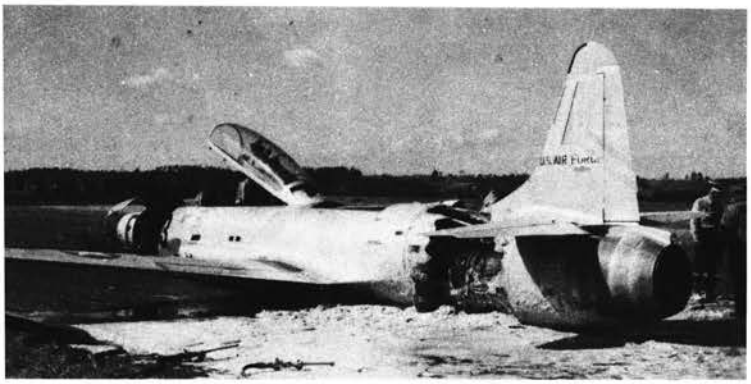
Food warmers are installed in the airplane for the sole purpose of preparing "HOT" food; therefore, do not use the tops of the voltage regulators or the turbo amplifiers for hot plates.

Another malpractice to avoid is the use of these units as coat hangers or racks. The insulating properties of a wool coat are excellent and may cause the units to overheat.

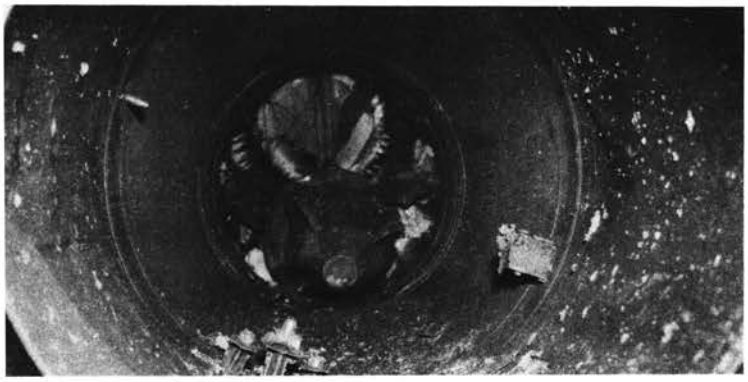
ITERS

l, Everywhere ● A few
;o, an F-94B departed a
ern airfield on a VFR
as No. 3 aircraft in a
our. The mission was an
camera gunnery train-

ximately an hour after
while on initial approach
ng, the engine of the
ircraft flamed out. The
ntinued the approach,
or a wheels-up landing,
e on base leg initiated
tt.



Mismanagement of the fuel system caused a flameout.



Damage is clearly visible through the tailpipe.

er procedures led to an
ful attempt and as
nd airspeed were both
ng rapidly, the pilot
ed on a crash-landing.
aft touched down in a
a adjacent to a taxiway
ed for some 2200 feet.
structural damage from
lown and landing slide
vely minor, substantial damage to the aft section resulted from a fire in the vicinity of the turbine wheel.

As the dust settled, the two occupants succeeded in opening the canopy by normal means and both evacuated the plane uninjured. The crash crew soon had the fire under control.

Examination of the wreckage revealed that major damage was sustained in the immediate vicinity of the turbine wheel. Fire, which started during the attempted air-start and continued until extinguished by crash-fire personnel, had been of sufficient intensity to overheat and burn the outer portions of the turbine wheel buckets and to burn through the exhaust cone, tailpipe, and fuselage.

An operational ground-check of all components of the fuel system revealed that malfunction was not a factor in this accident.

Analysis of the pilot's procedures for this flight indicate conclusively that prescribed pilot-radar observer preflight and in-flight checklists were not employed. The pilot was not aware of the totalizer or fuel tank liquidometer readings, or whether the fuselage tank low-level warning light was on prior to or after the flameout. He was also unaware of the position of the fuel tank booster pump switches throughout the flight.

Fuel mismanagement has accounted for a considerable number of aircraft losses and this accident fits right in that category.

One SOP for the organization concerned requires all booster pump switches to be on during formation flights. The requirement to gang load the fuel switches during such flights is to preclude fuel starvation when the pilot's attention is constantly diverted from the cockpit area.

The pilot stated that his normal fuel management procedures were to shut off the leading edge fuel tank booster pump switches after reaching 5000 feet following a takeoff until that fuel is needed for the flight. This procedure is approved in T.O. 01-75FAB-1, and provides a more positive indication to the pilot that approximately 150 gallons remain after all other fuel has been used. Normal fuel tank sequence with booster pumps gang loaded is tiptanks, leading edge tanks, main wing tanks and fuselage tank. Evaluation of quantities of fuel remaining in each of the aircraft of this particular flight indicated that at the time of the flameout, the amount of fuel remaining was equal to or slightly greater than that available in the leading edge tanks.

These factors indicate the flameout occurred when the fuselage tank was allowed to run dry. Had the pilot followed organizational SOP in gang loading during formation tactics, we wouldn't have found it necessary to write this brief.

To add fuel to the flames (in this case no pun intended) the pilot gang loaded the switches following the flameout. This energized the leading edge booster pump and refilled the fuselage tank. Then, as the throttle had not been stopcocked, an excessive amount of fuel accumulated in the

ntenance

ABERS

9P

Vacuum System ● A
was returning from a
l navigation mission
of failure of Number One
The aircraft crashed and
ibout seven miles from
e.
:tion of the maintenance
nd previous flight forms
craft revealed an exces-
ber of failures or mal-
of the vacuum flight
ts for the past five
The most frequently re-
fects were "needle and
erative" or "artificial
ioperative."
ost cases these dis-
s were corrected by
the vacuum pressure or
the instrument. A total
turn and bank indicators
installed. There was no
Unsatisfactory Reports
on these instruments as
by Technical Order 00-

requency of instrument
n indicates a possibility
acuum flight instrument
ts not operating properly
of the accident.
restigation of the KB-29
ht instruments vacuum
vealed that the warning
s not satisfactory. An
t was conducted by
the air intake at the
sembly with various
uch as a rag, a mech-
, a navigation map, and
checklist. It was found
ch case the vacuum was
y strong to hold the
curely, blocking the air
d reducing the airflow
ght instruments. In this
he vacuum gage, located
light engineer's panel
ild indicate a drop in
l pressure.
acuum system warning
ated on the pilot's in-

B-26

Damp Clamp ● A B-26 was about 20 feet from touchdown when observers on the ground saw flames suddenly whip around the left engine nacelle. A few seconds after touchdown, the pilot heard what he described as a "loud poof" and saw the entire left nacelle (from the cowl flaps aft) enveloped in flames. As the plane rolled down the runway, the fire trailed aft, burning the left side of the fuselage, the stabilizers, rudder and elevator.

Rolling to a stop, the pilot cut the mixture, and the navigator pulled the emergency canopy release. The crew of three crawled out of the cockpit onto the right wing and jumped to the ground. A favorable wind confined the fire to the left side of the plane, but before the flames were extinguished the left wing and nacelle had been destroyed.

This crew had just completed two bombing and gunnery sorties, during which the plane had performed satisfactorily. This was the first flight (except for a 30-minute test hop) following a major inspection completed the morning of the accident. (After the inspection, the main fuel tanks had been removed for compliance with T.O. 01-40AJ-143.)

While examining the B-26 after the accident, investigators found the left main fuel hose connecting the booster pump to the fuel selector valve was disconnected from the valve port. Fuel from the left main tank could flow unrestricted in the nacelle. Residue from the fire extinguisher foam was found in the hose fitting on the fuel selector valve, showing that the hose was disconnected from the selector valve at the time the fire was being extinguished. The clamp on the disconnected fuel hose was loose and could be rotated on the hose. There was no indentation on the hose to indicate that the clamp had been tightened to the proper 15 inch-pounds.

Molten metal on the runway near the point of landing indicated that the fire occurred just before touchdown. With the fuel booster pump on, the fuel apparently had been sprayed through the loose connection and ignited by electrical means or engine exhaust.

Careless maintenance probably led to this loose fuel hose. A loose hose means escaping fuel. Escaping fuel leads to fire. Fire means trouble. This crew was lucky. ★

Fire trailed aft from the left engine, destroying the nacelle and wing.

strument panel, indicated a loss of vacuum only and would not indicate a decrease in the airflow required to operate the vacuum instruments. As a result, the decreased airflow caused by a restriction in the air intake or the filter could not be detected by the pilot and would require constant observation on the part of the flight engineer to note a gradual change in the differential pressure.

The position of the adjustable hood on the warning light was checked on eight KB-29s. Two were in the closed or dim position, and four were in various positions between open and dim. With the warning light in its present relative position, low on the pilot's instrument panel and behind the control wheel, it is doubtful if the warning light could be seen by the pilot with the adjustable hood in the closed or dim position.

The vacuum system warning light illuminates only when there is a failure of the vacuum system. Therefore, there is no requirement for an adjustable hood on the warning light. ★

trol Jam ● An instruct-
nd a student took off on
two-ship formation train-
. The IP was riding in
rd cockpit of the T-28
tudent in the aft seat.
IP's wing was a second
two students aboard.
the two airplanes arrived
neuver area a period of
ensued, terminating in
ip Lufberry, a World
hter maneuver that can
scribed to the uninitiated
ce in the fullest meaning
ord. The two airplanes
in this tight Lufberry, or
scending all the while
itude of 2000 feet. At
ude the IP momentarily
off and retracted his
umber Two broke off,
ader continued down in
diving turn, rolled out
arly vertical dive, and
e ground. The airplane
ted; injuries to the IP
it were fatal.
ling to the witnesses
little or no attempt by
use pitch control, i.e.,
control. A hypothetical
tion of circumstances
l to show that the main
IP did not attempt to
as that he could not do
e elevator control was
ble.
ituation could be caused
of two conditions. . .
he control system itself,
ign objects jamming the
Because there were no

survivors and because of the condition of the wreckage, any conclusions must be only probabilities. However, there is much to be learned from this accident.

In the first place, the placement and the construction of the canvas baggage compartment of the T-28 airplane is such that articles stowed in this compartment could conceivably be thrown into the aft section of the fuselage during violent maneuvers or unusual positions of the airplane. Through fair wear and tear (including steam cleaning) this canvas compartment shrinks.

Sometimes a light blow from the inside of the compartment will loosen the entire system of snaps and the hatch will swing free. Therefore, one lesson to be learned is that everything should be removed from this compartment when planning aerobatic flight. The amplified pre-flight check list should certainly include inspection of the baggage compartment and the aft interior of the fuselage.

The second lesson to be learned is that the elevator trim tab hinge on the T-28 should be inspected for fit and snugness. If not properly safetied, it can slip inboard and jam against the vertical stabilizer fairing.

The third lesson involves the accepted fact that there is only one way to rig this airplane and that is the right way. On the T-28 T.O. 01-60FGA-2 tells how to use rigging pins for proper alignment. At one USAF base, inspection of

He couldn't pull out – no elevator contr

20 T-28 airplanes showed 16 of them to be out of rig. The rigging pins could not be inserted in three of these aircraft and on two of the same 20 aircraft wrench marks on the control system push-pull rod indicated improper techniques of rigging adjustment.

The overall conclusion is that there can be no margin for error. Maintenance personnel must be familiar with, and *follow* T.O. instructions. Crew chiefs and pilots must take nothing for granted. . . they must in turn make doubly sure by using the complete check list. Supervisory personnel and commanders must make the triple-check . . . they must be certain that procedures are complete and correct. . . and USED!

Two of the subjects we have discussed here (the elevator trim tab hinge and loose articles in the rear fuselage) have been covered recently in Technical Orders. Refer to Safety of Flight Supplement 1T-28A-1D, dated 27 November 1953. ★

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er. He left the job of
the No. 2 fuel line to
nozzle to be completed
an.

e later there appeared
scene the airman who
assigned the day before
he engine. He had seen
enance being accom-
d assumed that all of
en completed. No one
him to continue his
up, but he proceeded

the automatic starting
the fire guard signalled

to cut the engine. The fire guard then ran to the front of the aircraft and informed the airman that fuel was pouring from the underside of the airplane. The airman shut off the engine, noted that the fire warning light was on and abandoned the aircraft.

The fuel pouring out on the ramp flowed downhill toward the APU and ignited. The flames fired the fuel in the bottom of the fuselage and around the engine. Considerable damage also was inflicted on the APU. The fire was extinguished by maintenance personnel.

Investigation revealed that neither the original discrepancy of "high fuel pressure" nor the red cross for "fuel line disconnected" was entered in the AF Form 1, as required by T.O. 00-20A-1, part III, par 4c.

The board recommended that T.O. 00-20A-1 be strictly adhered to when a part is removed or disconnected, thus rendering an aircraft unsafe for flight. They further suggested that this incident be brought to the attention of all maintenance personnel to emphasize the necessity of following established procedures. ★

tarter Generator Assembly. F-84 starter URs reached a peak of 21 during the month nber 1953. Some of these failures can be to improper starting procedures. Here are he most prevalent:

olonged operation of the starter generator arting.

t allowing sufficient time for cooling be- empted starts.

tempting starts when current and voltage ow.

of the above conditions will cause the to become overheated. When this happens, ition (between the windings of the armature ield) breaks down, causing a short circuit. cases, this overheating only weakens the material. When that happens, the starter will fail, but at a later date.

oting a start with too low a voltage and sults in low rpm, with the subsequent burn- brushes and melting of the commutator.

ed shaft failures also should be given ion. They can be caused by the following: aring from a sudden impact, such as over- ithin the electrical system or applying too ent at the time of start.

tigue failure, which is due to tortional which may be set up by system inter- t should be noted that very few shaft fail- caused from flaws in the shaft material.) e check for the required current and volt- ags before attempting a start may be one ps that will help to minimize starter gen- ures.

F-33

Tank Installation. As a result of numerous volving 165 gallon tip tanks and attachment esearch was conducted by Headquarters an effort to avert further occurrences. In of improving the over-all tip tank program increasing flight range, improving tank s and standardizing aircraft configuration) was made to retrofit with the 230 gallon tip tank. Conversion to this type installa- d resolve many problems peculiar to the underslung tip tank.

ingly, using activities should convert to line installation at the earliest possible so by complying with Lockheed Service Bulletins S/B 110 and S/B 118, which have been overstamped T.O. 01-75F-42. The formal T.O. covering this installation is now being prepared by Lockheed, but the publication date is unknown at this time.

In the meantime, maintenance personnel responsible for the 165 gallon underslung installation must be aware of the critical sway brace torque values outlined in the applicable -2 handbook. Overtorquing imposes excessive loads on bomb shackles during high "G" maneuvers.

CARGO

C-119F

1. Main Landing Gear Wheel Hub Chafing Brake Mounting Bolt Heads. Difficulty has been experienced with the main landing gear wheel hubs chafing the heads of the brake mounting bolts. This condition was corrected (in production) on aircraft serial no. 51-2683 and subsequent. It was done by removing the washer from the head of the bolt and installing two washers under the nut.

It is suggested that all C-119 aircraft prior to serial no. 51-2683 be checked for the above condition at the next wheel inspection. Future brake installations should be made with both washers under the nut, as per T.O. 01-115CCA-4 and T.O. 01-115CCB-4.

KC-97

1. Fuel Selector Valve. Reports indicate that considerable difficulty is encountered with fuel selector valves, located in the flap well of KC-97 aircraft. This is the result of exhaust gases being deflected into the flap well. When mixed with moisture these gases become very corrosive.

Corrosion starts in the cannon plug and connector, rendering the fuel selector inoperative.

C-54

1. Antenna AT-4/ARN-1 used on C-54 Aircraft. Considerable difficulty is being experienced with the antenna AT-4/ARN-1 used on C-54 aircraft. The porcelain insulator, installed between the dipoles, cracks very easily and the ceramic in the socket breaks. This is undoubtedly due to the location of the antenna near the baggage compartment door.

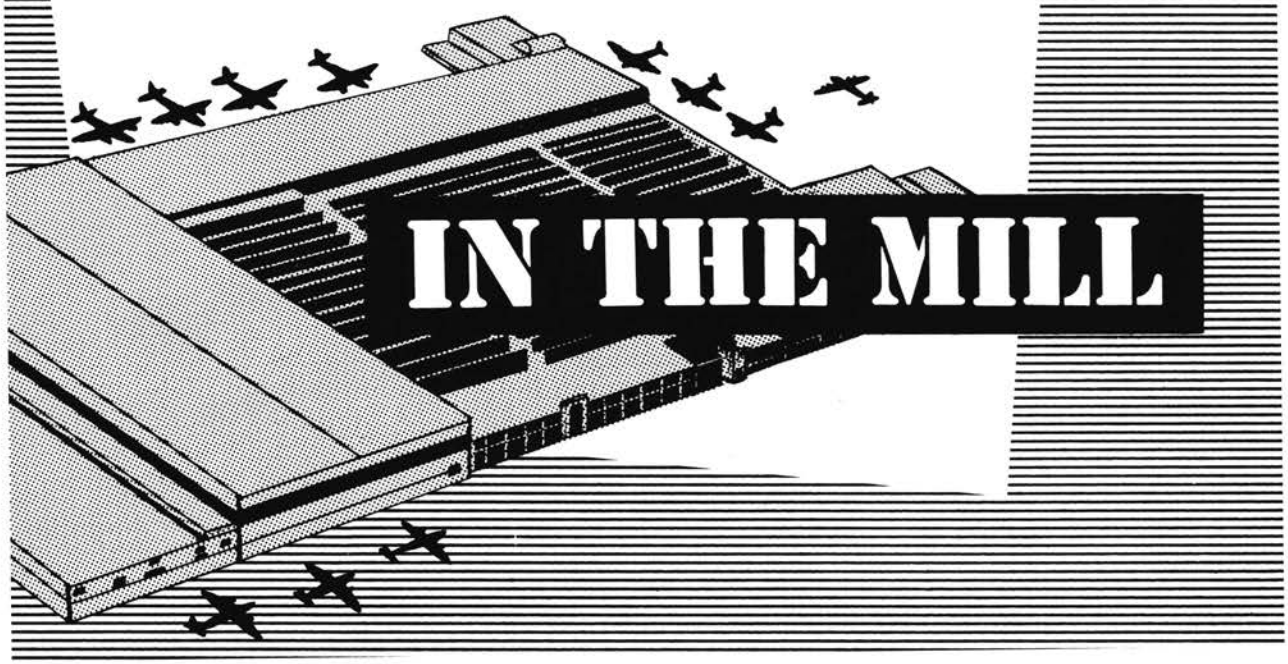
SBAMA advises that C-54 type aircraft are scheduled to receive an electronics modification

By Way of Clarification

One of the biggest headaches in the magazine publishing business involves turning something over to the printer on one day and then, about two days later, having someone come up to your desk with the rather disconcerting proclamation that the whole approach to the problem has been changed. We became entangled with just such a situation in the December REVIEW.

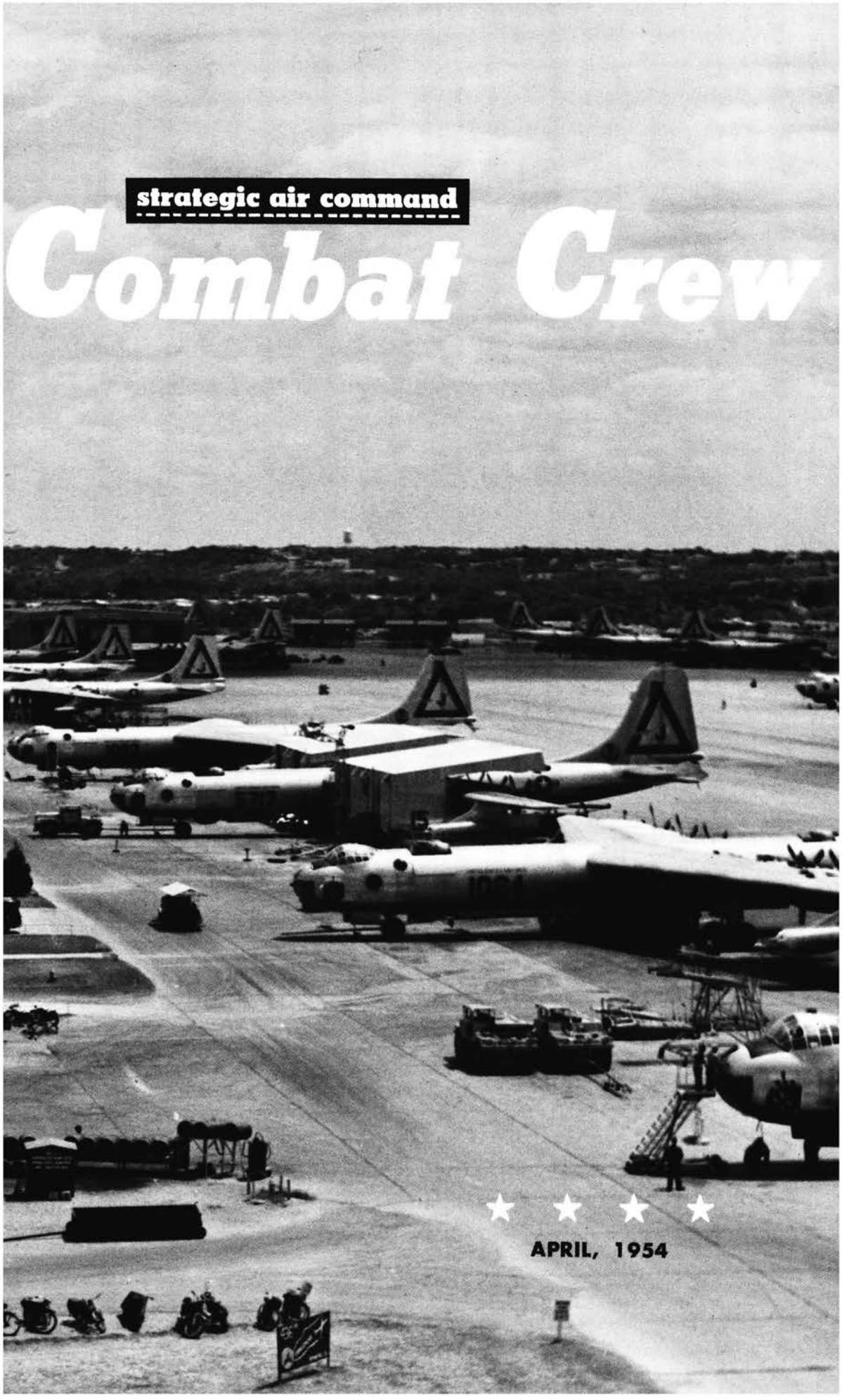
On page 30, we told you of a new spin lens motor for E-4 and E-5 fire control units. According to the information available to us when we went to press, the new motor was approved for installation during production, but a retrofit program was turned down because of cost considerations.

Well, let's change that story. We have since learned from Warner Robins AMA that, because of the numerous URs on the motor, the purchace of modification kits for retrofit has been approved. This modification will be authorized in accordance with Technical Order 11-70AB-213. Watch for it, and remember that this policy change came about only because using organizations took full advantage of the UR system. It can work, if you'll only give it half a chance. ★



strategic air command

Combat Crew



★ ★ ★ ★

APRIL, 1954

Gen. Curtis E. LeMay, SAC commander, presents the Safe Aircraft Campaign For '53 flying safety trophy to Maj. Gen. Frank A. Armstrong Jr., 2nd A.F. cmdr., as Maj. Gen. Archie J. Old Jr., director of operations, and Col. C. J. Cochrane, chief of SAC's Flying Safety Division, look on. Lake Charles was accident free from September 1952 through December 1953.

ever, there are many reasons for encounter- this over-temperature condition. A variety ninor equipment malfunctions, improper ıtenance procedures and ground and air ating procedures can produce this condi- It is not a black mark on anyone's record ıve an occasional "hot start" but it may be ıite cross over somebody if the damage is repaired. However, repeated "hot starts" ver-temperature operations are a definite :ation of incorrect procedures or faulty pment which should be corrected immedi- .

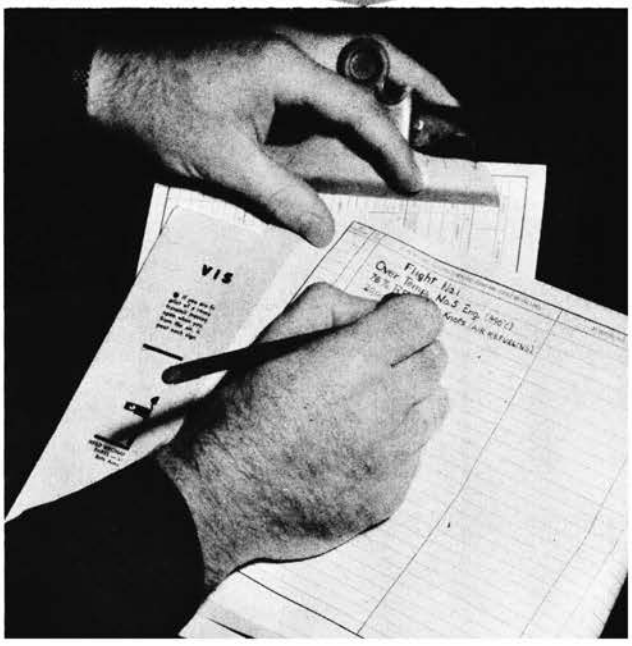
ıe condition which results in over-temper- e operation is compressor stall at altitude. nally, when the engine stalls on the ground, ver-temperature condition does not neces- y occur. This is not true at altitude, as enced by reports from units equipped with Stratojet. Under engine operating conditions ıuntered during B-47 air refueling, compres- talls can occur when the throttle is advanc- oo rapidly. Compressor stalls are accom- ed by high and, in some cases, excessive s. It is difficult for the flight crew to catch pressor stalls during certain operations e the pilot is unable to monitor his engine uments closely, as he must keep a close :h on the tanker and the refueling operation. ıuse of these difficulties and the possibility gh EGTs going undetected during this type ɔeration, it is vitally important that all ob- ed cases of high EGTs in the over-tempera- operation range be accurately recorded the SOP religiously adhered to. When a returns from an air refueling mission, the chief should ask if he noticed anything that ıt indicate that he had experienced com- sor stall or over-temperature conditions.

order to prevent compressor stall and its mpanying over-temperature, it is recom- ded that the stall-prevention switch be ed in the "ON" position during all air re- ng operations regardless of altitude. This edure is presently authorized by SAC Mes- DM4DMTN 7-8-8712, dated 9 Feb 1954, will soon be issued as a safety of flight ɔlement to the dash-one handbook. This will ɔlement existing instructions concerning the -prevention switch which state that it will ıse only below 10,000 feet and when nd temperatures are below 60°F. Using the :h above 10,000 feet is in no way detrimen- ɔ the engine and the only effect will be a ıt reduction in maximum available RPM. e this max power setting is not normally ired during air refueling operations, it is ırent that no handicap is experienced in g the switch as indicated, and a very de- e safety measure is gained in preventing age by over-temperature.

ɪmember, 715°C. EGT for 20 seconds is also ıot start." Log all "hot starts" and other -temperature operations. It may save an ne and airplane, and the lives of a flight .

COMPRESSOR STALL is frequently experienced duri air refueling and can result in a critical over-tempe ture condition.

WRITE IT UP—If the situation is worth reporting, the whole story briefly and accurately. Over-tempe ture write-ups should include tail pipe temp., RI duration of condition and airspeed, and altitu when applicable.



. a strange feeling in the pit of my stomach. ıs hard to believe this was actually hap- ıg to me. It was the sort of thing that ys happens to the other guy and I felt something would occur to change the tion.

e second engineer went into No. 2 bomb to cut ropes holding the B-10 ground ɜr unit to the bomb racks. After a short and considerable trouble, he reported ɔpes cut, and was back in the photo com- nent. I wondered what was wrong with ɜalvo system because there was no light ating loss of the B-10. Then I realized the thing was hung on station No. 2 which ıo electrical release system. The engineer ɔed into the bomb bay again and manually the shackle release arm open with a ɾ driver. The B-10 fell against the racks. id the same thing on the other side and ally dropped out.

during this time everything that could ulled loose had been thrown overboard. elt sure we would be able to put a stop .e slowly unwinding altimeter. We now given up all hope of being able to start ets on the right wing and the consensus inion was that to start one and two would add to the unbalanced power condition make it more difficult to maintain a head-

ɜanwhile, distress signals had been sent ıt first indication of trouble and VHF con- made with other aircraft in the area. We 650 nautical miles from Prestwick, 600 Shannon. We altered course to Shannon held it until advised weather at Prestwick d be better for landing. Our position was ɡ determined from Loran fixes and I assur- e crew that rescue craft would know exactly e to look for us if we had to bail since ion reports were being sent every few tes.

e crew demonstrated perfect discipline displayed not the slightest indication of or panic. We all felt that any minute now vould level off and continue to Prestwick. sure enough, we did start to level out.

e altimeter needle slowed down almost to ɔp. This was around 6000 feet and we felt —even though we were still settling a —by the time we reached 5000 feet it d be nothing but straight and level the ɔf the way. Our rate of descent had been ɜthing like a thousand feet a minute and ed off after lightening to 700-800 feet a ıte. Just when things began to look better, eft scanner called: "No. 1 torching!" and ɜe we had time to give that much considera- he reported: "No. 2 on fire!" Three short

MAJOR PARKES . . . "The chances of saving your life in an emergency depend largely on the care you take of your personal equipment and your knowledge of how to use it properly."

rings of the alarm bell shocked the crew back to reality. The alarm was acknowledged from all compartments.

As nose section compartment commander, I immediately ordered the primary navigator, radar operator and third pilot to proceed to the photo section for bailout. The weather gunner and I assisted other crewmen in attaching their one-man dinghies and checking R-1 suits, Mae Wests and parachutes. We now had one and a half engines and our rate of descent rose to 1000 feet per minute. The bail-out signal —one long ring of the alarm bell—was given.

As soon as we were sure all crew members in the photo and rear compartments had enough time to bail, the A.C. planned to kill No. 3 engine, feather the propeller and attempt to position the blades so we wouldn't hit them as we jumped out the left forward escape hatch.

The second pilot was the next to bail. The radio operator locked his key down, shook my hand and wished me luck. As our second engineer was about to go, I turned toward him. We were standing just aft of bulkhead No. 3 in the radio compartment looking forward when all hell broke loose.

We had struck the water nosing straight-in with one terrific crash. Upon impact, the fuselage broke at the trusses, just forward of the wing's leading edge.

Everything seemed to tear loose from the radio compartment and came crashing down on top of me. I was thrown down the passageway into the navigation section with my head lodged

y lanyard to the "D" ring on my Mae

now the sea had become angry. High, -capped waves were whipped up by ; winds and a driving rain was falling. :eiling appeared to be about 200 feet. s cold,miserable and lonely. Having had experience with sea searches in the I didn't feel the prospect of being picked as very encouraging. I was almost certain ildn't last the night and, just as I was ng it must be early evening, I heard I thought was an airplane. I searched ky with my one good eye, strained my and was almost at the point of giving up I spotted the most beautiful B-29 that graced the heavens.

came out of the overcast to my left, d and disappeared into the overcast to ght. Had they seen me? It was then I ienced my greatest feeling of depression. ight if they had seen me, they would dipped their wings, changed prop pitch, a flare or done something to give me ance.

as so mesmerized with the sight of an me, I hadn't thought to put out the sea er from the Mae West, and now I had lost ily chance. But in a few minutes they were This time, a little lower and in a tight gh circle to stay under the overcast. Soon were two aircraft, then an SA-16 that down low, flew over me and dropped ke bomb.

uld now see that two of the B-29s had ats hung under them. As one of the was dropped, I saw another survivor e first time. Soon the other lifeboat was ed. As I began making my way toward saw a survivor close by. The boat was ed about 300 yards from me but it took ver an hour to work my way to it. With- addles and in high seas it was impossible ke much headway in a one-man dinghy. aining directional control was especially ilt.

THE POINT of giving up. I spotted the most ful B-29 that ever graced the heavens. Had they seen me?"

When I finally reached the boat I was completely exhausted. The skin from the inner sides of both arms had been worn off on the sides of the dinghy, but what a relief to get into the safety of that wonderful boat.

Sgt. Harold E. Parker, a gunner, had been in the boat for some time. He had released the stabilizing gear and parachute and was attempting to start the engine. Unfortunately the battery was dead and our efforts with the hand crank were of no avail. We saw another survivor making his way toward us. We waved and shouted to him and redoubled our efforts to start the engine. The next time we looked, he had disappeared. We were both pretty seasick now.

The little URC-4 radio worked like a charm. We talked to a C-54 that informed us a surface vessel was on its way. We continued to search the sea for the other survivor but saw no trace of him.

After giving up hope of being able to start the engine, we changed into dry clothes, opened up one of the food packages and settled down to await the ship and search for other survivors. It was growing dark now and visibility was limited. Suddenly, the rescue ship Manchester Pioneer loomed upon us. For an awful moment we thought it would plow right into us, but the crew and captain saw us in time and their skillful maneuvering avoided a collision.

One of the British seamen tied a line around our waists and soon had us aboard. We immediately informed the crew another survivor was in the area and within an hour they pulled S/Sgt. Charles DeHaven, assistant ground crew chief, from the water to safety.

The captain and crew of the Manchester Pioneer treated us like kings from then until they deposited us safely, 10 days later, on the dock at Montreal.

We were four survivors from a crew of 23. Two had bailed and two had crashed into the ocean with the aircraft. None of us had planned on or even remotely expected to ditch. We were sure we had plenty of altitude to bail. Staff Sergeant DeHaven, first man to bail from the rear, pulled his ripcord as soon as he left the B-36, and floated down in comparative safety. Sergeant Parker, third man to bail from the rear, counted to two and pulled his ripcord. His chute opened just before he hit the water. Sgt. Roy Spear, second photographer, was in the process of trying to dislodge the six-man rafts from the upper forward turret bay in order to throw them overboard. When he had given up the job as impossible and was proceeding back through the hatchway to the photo compartment, the aircraft struck the water and he was thrown back against the turrets and guns and out into the sea. He suffered facial and scalp lacerations and several broken vertebrae.

In checking barometer readings on the Manchester Pioneer, which had passed through the immediate crash area and backtracked to the location for the search, it was found that

)OM DOES A PILOT engaged in a ground ɔation save an airplane in flight. In this ɜnce, Capt. Raymond H. Trapnell of · AFB's 508th Strategic Fighter Wing ɲed quick thinking, correct analysis and how in coaching an inexperienced pilot ɾ an emergency to avert an accident and nembership in SAC Flying Safety Divis-leads Up Flying club. This is the first time ership in SAC's safe flying fraternity has ɜwarded to a pilot for superior handling emergency while not in direct control of ·craft.

ɔrming the duties of mobile control of-he observed an F-84 transition student ɛ a normal takeoff. During climbout, the erjet rolled into a steep right bank. Over ɔbile unit radio, Captain Trapnell heard lot report his controls were locked and ɪat he intended to bail out. At this time ·craft was at an altitude of 800 feet over y, Ga.

ɔgnizing the danger of low altitude bail-ɪd the possibility of the plane crashing ɪe city, he reasoned the trouble was in leron boost system and immediately instructed the pilot not to bail out but to continue the climb and disengage aileron boost. The pilot replied that he had disengaged the aileron boost, but the F-84 remained hard to control although he was climbing as instructed. Captain Trapnell then instructed him to drop his tip tanks because the right tank might possibly have broken its forward bracket and shifted into a nose down position. The student pilot jettisoned his tips and reported he had attained a safer (8000-foot) altitude but was still unable to control the ailerons.

Captain Trapnell advised him to recheck the aileron boost disengaging handle. The pilot's recheck revealed a disengagement had not been effected.

When completely disengaged, normal control was possible. Since the pilot was shaken by his experience and in no condition to land immediately, Captain Trapnell advised him to fly locally, making only gentle banks. He then dispatched an airborne I.P. to join the pilot for the purpose of ascertaining that the aircraft was not damaged externally and observe as the F-84 was brought in to a safe landing utilizing a straight-in approach.

Raymond H. Trapnell

ing ground feature and return to your map
effort to pinpoint yourself is asking for
le. A bend in a stream, for instance, may
y one of a dozen bends as shown on the
Only by keeping a constant check on
ıg terrain, and coupling this with knowl-
of what is to come, can you succeed in
ıg accurate pinpoints. In addition, by
ng ahead you are able to spot trouble
— such as box canyons—and inform the
in time to negotiate them safely.

ɜr level terrain, the navigation problem
ɪses because of the lack of outstanding
ɑl features. This is somewhat offset by
ɪct that a heading closer to that desired
ɔe maintained. Most useful are rivers
ɑkes, terrain depressions and, hopefully,
ɪnd there an outstanding hill. The problem
nes acute in desolate areas, such as the
ican southwest. Working over such ter-
a clearly defined dry stream bed is as
ɔrting as having Pikes Peak for a guide-

ɪin, you must know when to expect such
points and be in a position to spot them
they flash past.

ɔund speed and course, computed be-
ı checkpoints, may not be technically ac-
ɜ at low level because of the deviations
ɪding, airspeed and altitude, but it will be
eable and provide reasonably accurate
as long as the flight continues over
r terrain.

pful in the "flying the deck" navigation
ɜm is an ability to estimate wind direction
'elocity. In the mountains, winds varying
.y with changing contours often may be
ɜd because of that variability. Over flat
and water, a usable wind can be de-
ıed by estimation from blowing smoke,
trees, position of cattle (they invariably
with their hindquarters into the wind)
itecaps. By drawing in the estimated wind
ɔur computer, a workable drift correction
ground speed can be determined for use
mputing course and ETA to your next
point.

second basic aid to navigation at low
celestial shots, may or may not be avail-
o you. Contour flying means that a cloud
ɑt any level blots out the celestial bodies.
ıes, too, the turbulence will be so severe
make shooting a celestial body impos-

mally, terrain level navigation in the
tains precludes the use of any celestial
because of the almost constant variations
itude, airspeed and heading. Over flat
and ocean areas, however, celestial is
cable.

The first time you attempt sun shots, with the solar disk going up and down in your sextant like a yo-yo and your head picking up welts from banging into the astrodome ring, you'll no doubt be inclined to proclaim the writer a congenital liar.

But perseverance will surprise you. A set of three sun lines usually will produce a workable MPP. Averaging the three HOs, then plotting to the mid-time of the shots, is one method that has been used with satisfactory results. Using the single average makes use of all three shots, whereas if plotted individually the navigator may decide to discard one or two of his readings and place complete faith in those remaining. In discarding one or more shots, the chance of error is increased, since in turbulent air it is difficult to say that one sight was more accurate than any other.

Night celestial is less of a problem because of the normal decrease in turbulence after dark and because night flying usually requires some increase in altitude in following the dictates of safety.

Your fix triangles may be larger than at normal altitude, but don't hesitate to use the fix. It probably will be as accurate as those taken at smoother flying levels.

Low level navigation is not quite a cinch. But with practice and strict attention to the job, it becomes no more difficult than directing your aircraft safely at any altitude.

FINDING A CHECKPOINT is difficult when flying over desolate areas such as the American southwest. At times, a clearly defined dry stream bed is as comforting as having Pikes' Peak for a guide post.

'ou have full knowledge of all items on ecklist? What their purposes are? How arious components be operated under ency conditions? Such items as gear, brakes, propellers, hydraulic systems, and flight instruments usually have an ite means for operation when the main becomes inoperative.

'ou know at what speed during the take- you are committed to continue even one engine becomes inoperative?

it is the best climbout, minimum control all speed with one engine out considering eight on board?

it is the best flap and gear management lure to follow under this condition (one out)?

o what speed could the takeoff be aban- and still stop within the limits of the y?

dents and accidents occur during land- ven though all components of the aircraft e normally. Many times these are attri- to pilot error. As a result, oftentimes ause" of the error, which could be used reventative cure for future reference, does ceive adequate attention.

urally, we all agree one of the most tant items during landing is speed control. ou familiar with the recommended ap- and boundary crossing airspeeds for ircraft?

wledge of landing roll distances will when deciding to continue or abandon pproach. On some heavy aircraft, an touchdown speed of 10 MPH will result nost doubling the distance required to ne aircraft. This type information is about ly reference a pilot has as a criteria for g on wet and icy runways. Even then it y a guess (approximate).

th perception at night is quite variable. methods used in airline operations to adverse effects when executing instru- approaches during darkness are: 1) lower nding lights when an approach is first started, then turn them off until needed; en windshield ice is present or a pos- y, keep the alcohol running across the hield, if this system is the most effective, within 100 feet of minimum altitude, then off. Also allow outside air to blow across side of the windshield. This will allow ent time for the alcohol to clear off the hield and still not cause a fog effect. Allowing alcohol to run across the windshield, and using windshield wipers during the landing, makes the operation much more difficult.

Many overshoots occur on wet or icy runways when the aircraft is lightly loaded. It is possible one contributing factor is an insufficient braking coefficient resulting from lift effect of the flaps during the landing roll. For example, a DC-4 at maximum landing weight receives about 20 per cent lift effect during the landing roll down to a speed of around 60 MPH. Naturally, this lift effect increases as the weight decreases. One way of shortening the landing roll in tricycle gear equipment is to retract the flaps immediately after the nosewheel has touched down, maintaining back pressure on the yoke and applying brakes simultaneously. This procedure will put the full weight of the aircraft on the main gear, giving maximum braking action. In some cases, this will reduce the landing roll by as much as 50 per cent.

It is said, attempting a go-round in an airplane at maximum landing weight, with one engine inoperative and permitting the aircraft to remain in the landing configuration, is a suicidal maneuver. Actually, the important points of any go-around are power, flap and gear management. Proper application of these will permit satisfactory speed control. Do you know them?

Approach lights, beneficial as they are, sometimes defeat the purpose for which they are designed. We can make seven different instrument approaches on one route and see a different approach light system each time. Know what type lights serve the instrument runway. This will enable your eyesight to accept the runway outline with the least difficulty.

The above material has only scratched the surface; however it is hoped this will help show "where to begin."

Both airline and military pilots now have an excellent method available for helping each other to better familiarize themselves with the many facets of their profession by sharing their experiences. Through incident reporting, it is possible to increase one's knowledge substantially. This method has replaced the "hangar flying" sessions that served a similar purpose in the days of less complex aircraft, and if properly utilized is a most effective flying safety tool.

Finally, as a goal, always try to fly the perfect trip, making no mistakes and conduct the entire operation consistent with established procedures.

ARY CREW OF THE MONTH— (L to r) Kneeling: M/Sgt. Calvin Amburger, CFC; M/Sgt. Carl J. Lewis, TG; ohn R. Simons, RG; S/Sgt. Arthur Mominee, RO; M/Sgt. Warren H. Martin, E. Standing: Lt. Col. Stanley R. AC; 1/Lt. Gordon D. Clay, P; Maj. Donald A. Siewert, 1st VO and Lt. Col. Frank Crandall, 2nd VO.

of the Month

apt. Frank B. Green of Bergstrom's 12th SFW was named Feb- pilot of the month for superior handling of a recent in-flight ency. While participating in an air refueling mission his F-84 enced failure in the receptacle mechanism causing fuel to siphon emendous rate from the wing receiving connection. Further hook- mporarily halted siphoning until release from the boom was ac- ished. With no suitable emergency landing field nearby and iles separating him from his base, Captain Green advised the pilot of his situation and requested a tow back to base. The our and fifteen minute flight home on the end of the tanker boom nade with one tip tank three-fourths full and the wing tank on me side completely filled. Captain Green skillfully maneuvered istable fighter the 230 miles on the end of the refueling boom ver Bergstrom. Upon release from the tanker, at 6000 feet, fuel he Thunderjet's tanks began to pour from the receptacle. While ting the landing pattern, siphoning fuel saturated the runway. Captain Green felt he "had the runway made," he placed his e in idle cutoff. His skill in remaining over an hour at end of om with a heavy, unstable fighter and good judgment in think- nead of his aircraft earned him the pilot of the month honors.

tenance Man of the Month

fine example of the flight chiefs who keep SAC aircraft flying , M/Sgt. T. A. McGinnis of Pinecastle AFB's 321st Bomb Wing named February maintenance man of the month. Confronted reorganizing his squadron, at a future date, into three combat- organizations, Sergeant McGinnis suggested dividing the squad- to three sections, each comparable to a combat squadron and ting independently with complete air crew, postflight crew and d support equipment crew. His planning was designed to con- manpower, establish better control and supervision and eliminate inute confusion in the ultimate changeover. In February, two , combined for service test, were placed under his supervision. result, morning delays and aborts were reduced 50 per cent. nued operation of this section will provide invaluable experience cilitate changeover when combat-type squadrons are activated. ant McGinnis' ingenuity in improvising equipment to insure and efficient maintenance, initiative and outstanding perform- as a flight chief merited his selection.

isual scan assumptions already discussed, ruising speed for B-50 type aircraft, and a contrast value for the aircraft in sun- which has been determined experiment- These assumptions, together with a clear sphere, result in a maximum predicted ıce at which a B-50 can be seen from -on as being eight nautical miles.

mpletion of the necessary arithmetic to mine the probability of detection in the of a single observer, scanning under con-

other three were on a reciprocal course 500 feet below and spaced about ten minutes or 45 nautical miles apart. Observation by various members of the crews, such as scanners, indicated that the actual course of the airplane flying at the higher altitude was within 150 yards of the courses of the other three aircraft at 25,500 feet.

The aircraft commanders, radar operators and navigators of all four aircraft had been thoroughly briefed on the mission. The pilots

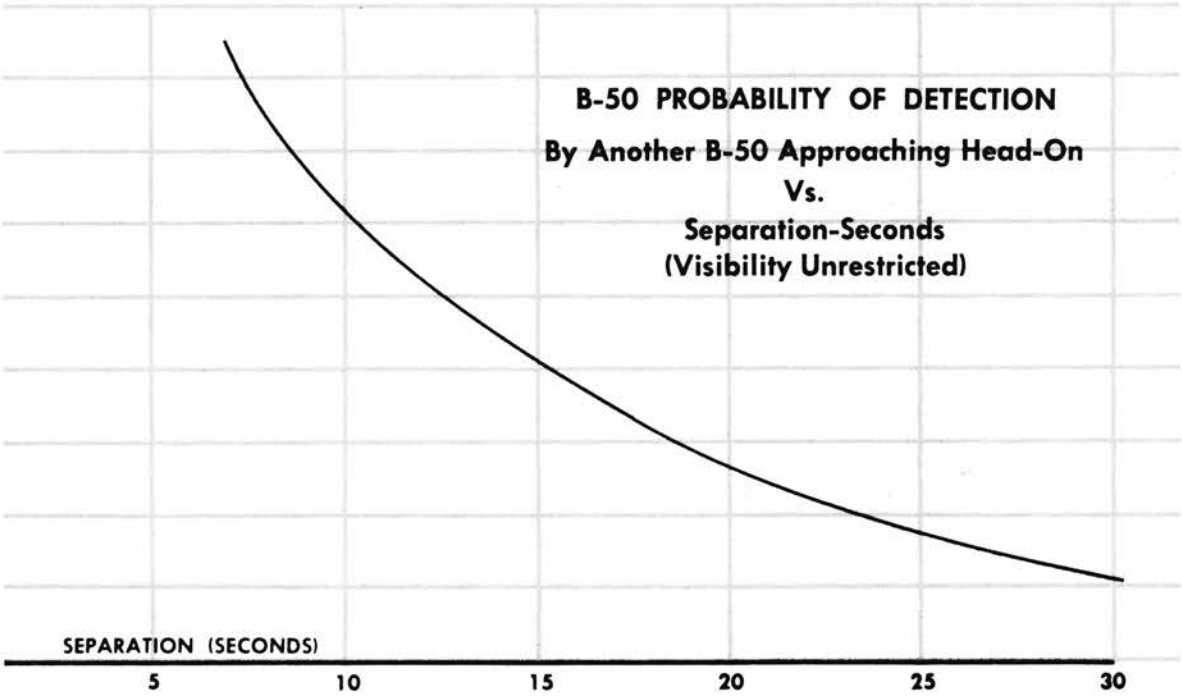


Fig. 1

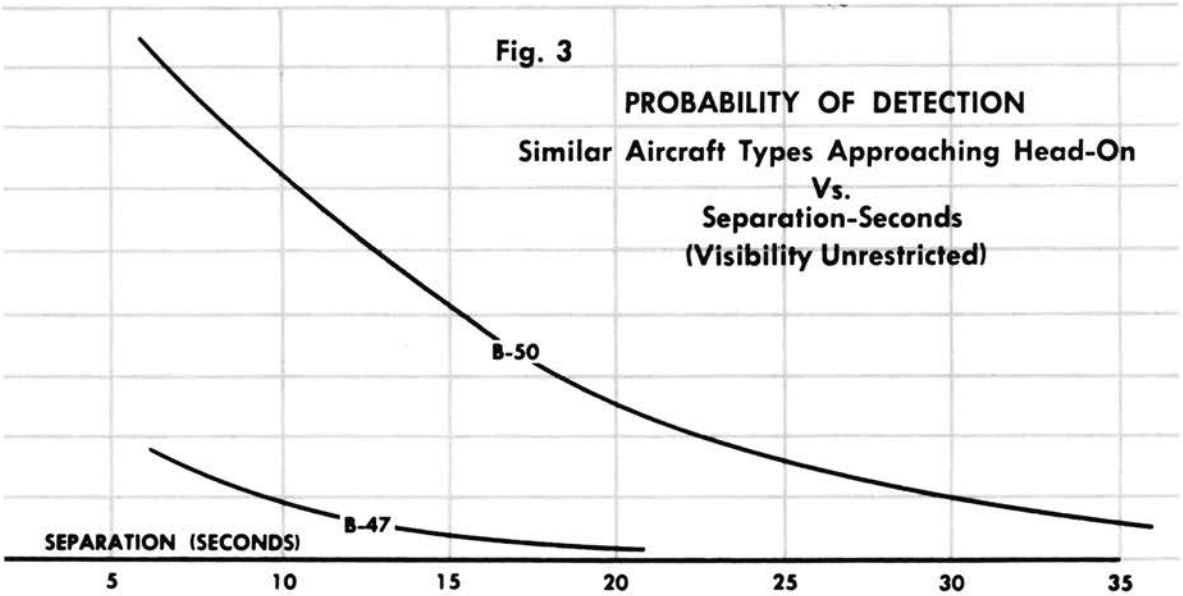
ıs described above, leads to the curve ed in Fig. 1. Probability of detection is n as a function of the time in seconds to collision of two aircraft assumed to be oaching head-on. Experience in the track- f aircraft by ground radar has indicated approximately five seconds is required n aircraft to depart from a straight and flight path after emergency application controls by the pilot. At least five addi- seconds would be required for pilot ion time since a decision must be made the proper action to take in order to the collision. Thus, reading the chart at econds would indicate that for one ob- r there is only a 60 per cent probability tection in time for corrective action to be . When more than one observer is avail- the probability of detection would be r.

ır B-50 type aircraft participated in the conducted by the 43rd Bomb Wing. One rfort was stationed at 26,000 feet; the

and bombardiers, however, were not briefed on the purpose of the mission but were cautioned to be alert for other aircraft. The navigators recorded all such sightings, along with exact time each was made.

The pilot of the single aircraft at 26,000 feet did not see the first of the other three aircraft, whereas the bombardier did sight it eight seconds prior to passing. The passing of the second aircraft was not observed by any crew member.The third aircraft was detected 24 seconds prior to passing by a third pilot standing back of the bombardier and 20 seconds prior to passing by the bombardier. It was reported that there was a flash reflection from the sun to aid in these sightings, and that the pilot of the aircraft did not make a sighting.

The pilot of the first aircraft at 25,500 feet did not observe the airplane flying at 26,000 feet, but the bombardier did report a sighting five seconds prior to passing. Likewise, the sightings for the second aircraft were at seven and five seconds, respectively, and for the third aircraft at three and eight seconds.



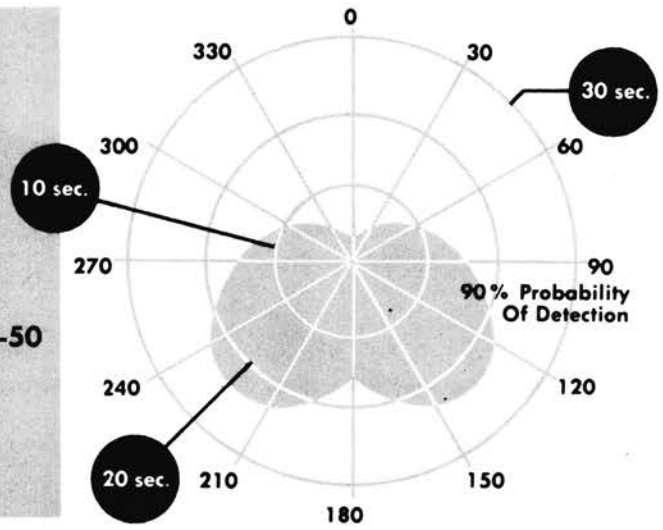
60 per cent effective in the prevention
id-on B-50 accidents, it should be essen-
100 per cent effective in the prevention of
ons in which aircraft approach each other
an angle such as 135 degrees. Likewise,
it appears that visual search from a B-47
ictically useless so far as head-on col-
; are concerned, it will nevertheless con-
to be extremely important for B-47 crews
visually alert in order to prevent other
of mid-air collisions.

ailed analysis of all aspects of this prob-
ndicates that the improbability of two
nes actually occupying the same air
at the same time has, in the past, prob-
been more responsible for the low number
d-air collision type accidents than has
ffectiveness of scan and search by air
personnel.

Recommendations resulting from this study are: that prevention of mid-air collisions can most effectively be accomplished by more effective air traffic control, so that two or more aircraft will not be assigned the same airspace; and by the intensification of individual crew member search procedures, especially by B-47 pilots in high traffic density regions where collisions on other than head-on courses are likely to occur. Morever, B-47 crews in particular should be indoctrinated concerning the limitations on visual search effectiveness imposed by higher speeds with correspondingly rapid rates of closure.

Until more effective air traffic control measures are instituted, it is further recommended that pilots frequently check altimeter settings to assure that they are maintaining proper altitude separation as assigned under existing air traffic control procedures.

TH EFFECT ON VISUAL-RANGE B-50



io Officer Ambler picked up the dis-
ignals at 0720 on 5th August but no po-
was given. On hearing Portishead at 0800
ceived a position which, when plotted
ptain Downing, showed the Manchester
er to be approximately 94 miles from the
ed aircraft. She altered course and Mr.
r listened for any other ships which
be nearer the crash scene, but heard
working.

uming from this that the Manchester
er was the ship most likely to be of as-
ce, Caption Downing ordered "full ahead"
ds the position given, and at 1100 hours
nbler broadcast a message giving his ship
ing about 55 miles west of the position
and proceeding with all possible speed.
then on, the Manchester Shipper was the
lling station.

hour later, an aircraft appeared from
w cloud and flew overhead obviously
oting to guide the ship. Mr. Ambler
led the plane by Aldis lamp and the
esponded by giving a very definite signal
ling his aircraft to indicate that the Man-
r Shipper should follow his course.

fact that the ship was now in touch
a guiding aircraft was reported by radio
weather ship Weather Recorder on Sta-
YI and to Valencia Radio. The Manchester
er then altered course to that indicated
e aircraft. Meantime, the Danish motor
Uruguay, the Swedish Monica Smith,
he French trawler Magdalena, having
the Manchester Shipper's signals to
nd EJK, asked for a QTG signal from Mr.
er so that they could home on the posi-
y D/F. The Weather Recorder asked, at
ame time, for any further news of the
e work and the Manchester Shipper's
ls in reply enabled the three other vessels
e D/F bearings.

sooner had this been completed than a
flashing an Aldis lamp, flew close to the
Captain Downing called Mr. Ambler to
ridge to see if he could make anything
f the signals. The plane was sending a
of long flashes, evidently in an attempt
to attract attention. Mr. Ambler returned to the radio room, called the Weather Recorder, which is equipped with R/T for communication with aircraft, and asked her to get in touch with the B-29 and find out if the Manchester Shipper were on the right course and nearing the scene of the crash. If so, would the B-29 drop flares to indicate the exact position?

Back came the reply "What color flares would be suitable?" Mr. Ambler answered that flares of any color would be valuable, and left the radio room for the bridge to tell Captain Downing that flares would be dropped. With every available pair of eyes on board now keeping a keen lookout for any sign of floating wreckage or other trace of the disaster in the poor visibility existing, all messages had to be taken to the bridge by Mr. Ambler.

As he was telling Captain Downing that flares would be dropped, two planes flew over the ship and dropped flares ahead and a little to starboard. The Manchester Shipper altered course to 121 degrees. Shortly thereafter the first wreckage was seen. At this time visibility was about five miles and the sea calm but with a long rolling swell.

There was no sign of life.

Captain Downing ordered the motor lifeboat to be readied knowing that it would be in first-class order, as the engineers had overhauled the engine throughly while the ship was in port in Montreal. Mr. Ambler reported to 4YI and EJK that the lifeboat was waterborne and ready to leave the ship as soon as anything further was seen. He also checked the radar and observed a target about four miles distant. Nothing was as yet visible from the bridge, but, in a few moments, the mist lifted a little and exposed the ill-fated B-36 lying on the surface. Its nose was completely torn away and those on the Manchester Shipper's bridge could see instruments inside the machine. Near the wrecked aircraft was a yellow Air-Sea Rescue lifeboat, dropped by one of the aircraft overhead.

As soon as the wreckage had been sighted, the Manchester Shipper's motor lifeboat, with Mr. P. N. Field, the chief officer, in charge, left the ship and headed for the boat dropped by the rescue plane, although there was no sign

for your info

OU KNOW?

t each RBS site has direct telephone nications with the nearest air route traf- trol station. The facility is used as an air traffic control. Upon request, RBS ill relay information from aircraft to the stations and vice versa.

ranges have been extended to encom- e area within a 60-nautical mile radius BS site.

raft making flights at 20,000 feet MSL ve should avoid, when practicable, fly- hin 60 nautical miles of cities in which es are located when RBS runs are not d. In instances where it is not practic- deviate by 60 nautical miles, aircraft contact the RBS site and furnish their titude and intended track through the ige area. In turn, the RBS site will relay rmation to all aircraft using the range.

Forth Worth (Tex.) RBS site ceased ons at Fort Worth and moved to San , Tex. 30 March. Operations at San are scheduled to begin 15 April.

fusion appears to exist as to proper sition names for the various pilot posi- AC headquarters recognizes the follow- t position nomenclature: (a) Heavy air- -36), aircraft commander, pilot and co- b) Medium aircraft (B-47, B50, KC-97, etc.), aircraft commander and copilot.

Regulation 60-14, Engineers Plan (Form is being revised to include provisions ing wind to the no-wind plan. Publica- expected later this month.

nerous changes, additions and/or dele- supplements of SAC Reg 50-8 will be ed some time this month with an ef- date of 1 May 1954.

Reg 60-10 was revised during April rtained to carrying a fourth person on craft.

Reg 55-13, "Utilization of T-33 air- was rescinded in February.

nging of the 50-8 training quarter has nged the running probation quarter. it photo-flash and electronic record runs been included in the reconnaissance onary program.

3/YRB-47 copilots have been designated ary crew members.

e units are not practicing RBS target . (Reference: Incl. 5, SAC Reg. 50-4.) t or lead crews that fail evaluation must be re-scheduled within 30 days and pass reevaluation or be down graded.

*Supplement III to SAC Regulation 51-24, which establishes procedures for evaluation of B/RB-47 select and lead crews, is in the process of publication.

*If you have seven years commissioned service and 2000 hours flying time as an aircraft observer, you are eligible for the Senior Aircraft Observer rating (AFR 50-7). Applicants are required to pass a written examination and flight check. Tests, available on every SAC base, will be administered by standardization boards or OIC observer proficiency.

NOTE: The above information does not constitute official changes to policy or directives, but is presented with a view toward highlighting existing and new directives, policies, procedures, etc. In each instance, it is recommended that applicable publications be referred to for complete and detailed information.

GEN. CURTIS E. LeMAY, SAC commander, presents a United States Air Force Flight Safety Award to Brig. Gen. Thayer S. Olds, 40th A. D. cmdr., (right) in recognition of the outstanding flying safety record achieved by Turner Air Force Base personnel during the six-month period January through June 1953, as Maj. Gen. Archie J. Old Jr., SAC director of operations, looks on.

nined accurately for each leg of the it should be recomputed for each 250 :al miles along the flight path. AF Manual will answer all questions about pilot's ation procedures.

restricted areas that are on or along the led line of flight should be investigated. nformation is available in the Radio Facil- art. The highest terrain to be encountered ie cruising altitude to be maintained must tablished, allowing plenty of margin for All airports that are on or along the sed route should be checked in the ory of Airdromes section of the Radio ty Chart. This information could prove at value in case an emergency developed ute that required a hasty descent and ig. If there is any question about any of nformation, Flight Service should be con- l for a complete report.

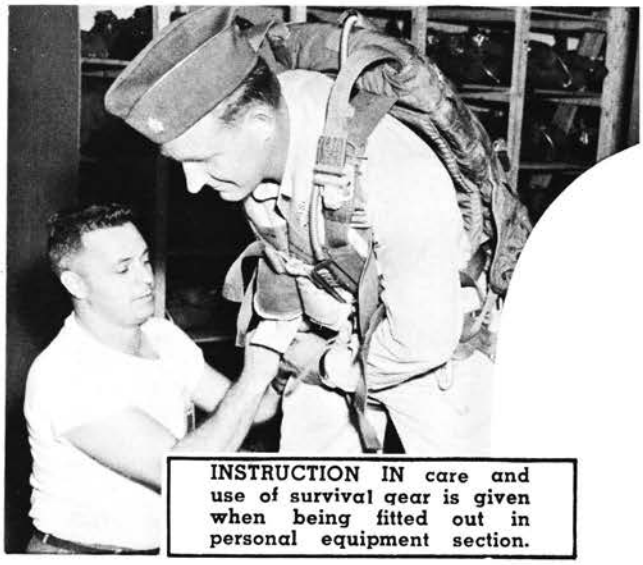
weather for a proposed flight must be :d, not just observed or checked. The latest nation available for a particular station nd in the teletype sequence reports. The ier trend along the proposed route must ecked with the forecaster. An inexcusable er of accidents occur because of in- iate weather briefings. Insist upon and complete analysis of the entire weather ion on and along the proposed route.

AF Form 175 must be accomplished ac- :ly. Enough time must be allocated to unction so that it is filled in completely :orrectly. The E-6-B computer should be to obtain an accurate true airspeed and d speed. The estimated time en route d not be a guess but a carefully computed ate. The number of omissions and mistakes ne dispatcher has to correct is indicative pilot's thoroughness.

:r the flight planning has been complet- F Form 175 filed, maps drawn, NOTAMS ed and everything seems to be in order, nd think— "Have I forgotten anything?" A flight planning checklist may be the answer if something is forgotten. A simple listing of all the items that must be accomplished will do the trick. As each item is completed, check it off. This leaves nothing to chance and serves as a double check on your memory.

Although these points may seem basic or fundamental to most pilots, they are the cause of an untold number of aircraft accidents. In fact, all the items covered in this article were obtained from actual accident reports and were listed as either a contributing factor if not the actual cause of the accident.

Efficient and thorough flight planning is indicative of—"having the mental faculties in such condition as to be able to anticipate and judge the effects of one's action." If we are able to anticipate our mistakes, as well as anticipate the effects of them, then it is most likely that they will not occur. In so doing we may prevent an accident before it happens.



INSTRUCTION IN care and use of survival gear is given when being fitted out in personal equipment section.

MISSION DETAILS, weather, navigation and other important data are covered in the final briefing prior to boarding the aircraft.

ainees to
IGERS

se I was the "conditioning phase"—the ment of the pilot to his aircraft. No at- s were made to teach fighter tactics ıciples. No guns were fired, bombs drop- r rockets fired, and there were no fighter hter or fighter vs. bomber missions flown. I had but one objective—that the pilot l completely understand his aircraft.

se I might well have been called the ance phase" because here it taught the things that were to pay off later in the enance of the enviable safety records to the 27th is accustomed. When the trainee eted Phase I, there was no question as ability to maintain absolute control of rcraft in all phases of flight—visual or nent. He knew what to do when the e failed; when generator, gear or brakes ıctioned; when any one of many possible s and malfunctions occurred. Here was ı who knew his aircraft—the first and prerequisite of a safe pilot. Here, also, product that satisfied the objectives of I.

n completion of Phase I training, the e pilot was again scheduled to fly with nber of the standardization board. The was preceded by a rigorous verbal exam- ı. In addition to normal procedures the e pilot was questioned on all emergency ons. This "third degree" was actually ajor portion of the mission. The flight it- roved (and sometimes disproved) what lready assumed—that the trainee could fly the aircraft.

ıe trainee satisfactorily completed the ardization check, he progressed to Phase he did not satisfactorily complete the he was returned to his instructor pilot ther training. Close liaison was always ained between instructor pilots and the standardization board member. Additional training was given until the trainee could satisfactorily complete a repetition of the stanardization check and become eligible to progress to Phase II.

Statistically speaking, Phase II was composed of the following: six and a half hours instrument training, 22 hours of gunnery, rocketry and bombing, nine and a half hours of navigation and cruise control, eight hours of formation, eight and a half hours of air refueling training, eight hours of night flying and ten hours of varied simulated combat missions including fighter vs. fighter, fighter vs. bomber, bomber escort, bomb damage assessment and tactical support missions.

To say that this was the summation of Phase II would be an understatement and injustice. Phase II also consisted of a lot of other things that are difficult to itemize. Some statistics could no doubt be compiled to reflect hours spent in formal briefings and de-briefings, but the majority of lessons learned by the pilot were, in the beginning, of a negative nature and resulted neither from briefing nor de-briefing, formal nor informal. He learned, for example, that targets are not necessarily "riddled" merely by keeping the pipper on the target nor do bombs necessarily connect with the point indicated by the sight. He also learned that a difference in rate of turn of two identical aircraft can only be caused by the difference in skill of the pilots. In more colloquial terms, he learned that there are a lot of things to learn.

While the mission of Phase II was to teach the trainee to operate the aircraft as a weapon, the always-present and always-primary requirement for safe flying practices were continually stressed. Trainees' firing passes were closely monitored by tow pilots and instructor pilots alike. All air-to-ground missions were under the direct control of a range control officer in a position to observe firing passes. At no time was the trainee out of the sight or control of a qualified instructor pilot. Eagerness for a good score can lead to dire results if proper safety measures are forgotten or ignored; and the 27th didn't want any "100 per cent the hard way" missions.

Due to time limitations (approximately 100 hours for Phase I and II combined) it was not anticipated that Phase II should graduate a pilot perfect in technique and wise to all of the tricks of the trade. Enough repetition was allowed to promote a considerable increase in skill and to provide a background that would qualify the trainee pilot to fit into a tactical squadron.

Although the trainee program ended only recently, it is not too early to assay results—and we of the 27th are quite pleased. The old maxim "Low experience level, high accident level" need not necessarily be true—and the 27th has a record that proves it.

the wise old bird's Quiz for combat crewmen

B-36 JET ENGINE MAINTENANCE

This month's quiz, prepared by the Air Force Personnel and Training Research Center, is designed to test the knowledge of B-36 engine mechanics. If the questions stump you, the correct answers will be found on page 24.

1. How much warm-up period is required for the J-47 engine before the throttles can be advanced to "full open"? (a) Five minutes; (b) Four minutes; (c) Three minutes; (d) Varies with the temperature of the day; (e) No warm-up period is required.

2. What is the desired tailpipe temperature range for most efficient operation? (a) Minimum 690°C., maximum 870°C.; (b) Minimum 675°C., maximum 980°C.; (c) Minimum 660°F., maximum 690°F.; (d) Minimum 660°C., maximum 690°C.; (e) Minimum 675°F., maximum 980°F.

3. Primary purpose of the cowling and fairings installed on the jet pods and engines is to: (a) House and streamline the engines; (b) Direct the flow of air to the engine; (c) Direct the flow of air around the units for efficient cooling; (d) Protect the fuel and oil lines from damage; (e) Maintain heat around the engine for more efficient operation during flight.

4. The throttles for the jet engines are operated through: (a) Manually operated cable and rod arrangement operated by the pilot; (b) Electrically-operated throttle system for each pod operated by the pilot; (c) Manually-operated cable and push-pull rod arrangement controlled by the panel engineer; (d) Electronically-operated independent system for each engine controlled by the pilot; (e) Electronically-operated independent system for each engine controlled by the panel engineer.

5. The range of travel from closed to open of the air plug doors as a unit is adjusted: (a) By setting the door actuator limit switches; (b) On the jackscrew by moving the mechanical stops; (c) No adjustment is necessary; (d) By the push rod installed on each door; (e) None of the above.

6. What is the maximum specified oil consumption allowable per hour in a J-47-19 engine? (a) 1.5 pounds per hour; (b) 2.0 pounds per hour; (c) 2.5 pounds per hour; (d) 3.0 pounds per hour; (e) 3.5 pounds per hour.

7. What must be done if exhaust gas temperatures exceed 1000°C. during ground run-up? (a) A 50-hour inspection is required; (b) A special inspection of EGT harness; (c) Removal of engine for minor repair; (d) A thorough check of all buckets in turbine; (e) Removal and replacement of EGT harness.

8. What are the acceptable noises that may be detected while engine is coasting after shutdown or during a dry run? (a) A scraping sound; (b) Harsh clicking or rattling thumping sounds; (c) Light clicking in vicinity of No. 3 or No. 4 bearings; (d) Noisy starter-generator bearings; (e) None of the above.

9. What would grayish streaks on the inside of the exhaust cone indicate? (a) Faulty combustion chamber; (b) Faulty exhaust cone; (c) A defective spray pattern of fuel nozzle; (d) Improper type of fuel used; (e) Malfunction of small slot manifold.

10. What is the reason for painting one rotor blade in each row blue? (a) Lower balance point of individual wheel; (b) It is the longest blade in the row; (c) It is the shortest blade in the row; (d) It means that the blades are made of steel; (e) To indicate if rotor has been overheated.

A P P E N D I X C

COMMANDERS COMMENTS

APPENDIX C

The comments below were supplied by Mr. Allen R. Scholin, editor, Air Training, February 22, 1954, when returning the completed questionnaire on Air Training.

COMMANDERS' COMMENT

HOW WELL DOES AIR TRAINING AID IN ACCOMPLISHING AIR TRAINING COMMAND'S MISSION?

Here are evaluations from Air Training Command Base Commanders:

NELLIS AFB, NEV.: "AIR TRAINING is well received and fully utilized at Nellis. This publication constitutes an important portion of internal information program at Nellis and assists measurably in broadening the understanding of jobs in various Air Force Specialty Codes categories and knowledge of the Air Force family."

GARY AFB, TEX.: "AIR TRAINING has materially aided the mission of this base by affording increased knowledge of this and other missions, presented in a clear, factual, intelligent style with a format patterned after commercial publications which attracts readers by choice rather than by directive. Airman morale rises proportionately to the extent of knowledge of the organization. Typical airman comment shows stimulation of thinking concerning other phases of complex Air Training Command mission. AIR TRAINING is an excellent tool of the internal information program."

CTAF, RANDOLPH AFB, TEX.: ". . . (AIR TRAINING) . . . has been a very effective instrument in keeping airmen at this headquarters abreast of what is happening at all levels of Air Training Command, both pictorially and editorially. The publication gives our new airmen a chance to learn what others in the command are doing and the part they are playing in accomplishing the training mission. I am especially happy to see the stories about other commands in the United States Air Force. I feel these articles are exttemely helpful in indictrinating airmen

about the overall United States Air Force picture. This additionally gives them an insight into how our Crew Training Air Force training mission fits into the overall United States Air Force mission."

LACKLAND AFB, TEX.: ". . . AIR TRAINING is especially useful at this base where young airmen receive their first impression of the Air Force. AIR TRAINING is valuable addition to our efforts to motivate the airman to take more interest in training as preparation for his Air Force career."

PARKS AFB, CALIF.: ". . . enthusiastic readers report they gain far better insight into Air Force life through AIR TRAINING than any other Air Force publication. The overall excellence of the magazine insures high readership among personnel. Information of vital importance to the training mission of the Air Force is presented accurately and concisely in an easily readable style. To those new to the Air Force, AIR TRAINING provides a link between the classroom and the flight line."

WILLIAMS AFB, ARIZ.: "AIR TRAINING magazine, without duplicating any other material available, aids in the orientation and enlightenment in the life and work found in Air Training Command for the many airmen assigned. It furthers this understanding and appreciation of their place on the Air Training team."

ELLINGTON AFB, TEX.: "AIR TRAINING is considered a valuable tool in our constant program of motivating the airman toward our many complicated courses."

LOWRY AFB, COLO.: " . . . AIR TRAINING adds . . . incentive to the esprit de corps program, and--by use of stories dealing with the individual bases in addition to other command bases, the various Headquarters, and the Air Force as a whole--is invaluable in increasing and maintaining the proper spirit of belonging that is desirable in all Air Force Personnel.

AMARILLO AFB, TEX.: "AIR TRAINING serves as a medium of information that more fully integrates administrative, operational and humanistic control of all members of Air Training Command."

LUKE AFB, ARIZ.: "AIR TRAINING magazine makes available to the reader the information that enables him to compare and relate Luke to all bases in the Training Command. This has given Like airmen the feeling of belonging and being an important part of the accomplishments of Air Training Command. The incentive to learn

more, and to increase skill in the job is promoted by the numerous feature articles that glamorize and give added prestige to even the most routine job."

TYNDALL AFB, FLA.: "This magazine not only serves to indoctrinate new airmen in their new life and work in the Air Force, but also serves to improve the morale of all officers and airmen. It is believed that the articles contained in AIR TRAINING are not only timely, but also very educational in that they depict typical situations arising through Air Training Command and Air Force. The magazine provides insight, in an informal manner, into all career fields. This stimulates the desire to train through on-the-job and informal training to greater degrees of proficiency in their field of work. It has been noted at this base that not only new airmen, but also the older well training airmen, avidly read this most desirable publication for new developments and better understanding of the Air Force."

KEESLER AFB, MISS.: "AIR TRAINING has positive value in assisting the base mission by giving student airmen authentic information on what the Air Force offers airmen in career fields upon completion of studies. The issues are of great benefit to student counselors for background information. Contents are directed at the airmen level where it is most needed."

MATHER AFB, CALIF.: "The magazine is well received and offers a fresh approach to training facts. The key to its success is its format and subject presentation. AIR TRAINING is a popular recreation reading magazine. This is most important since it is in this reading period that facts are more likely to be retained. AIR training is indeed the most progressive printed media in presenting palatable information material to all personnel."

TECHNICAL TRAINING AIR FORCE, GULFPORT, MISS.: ". . . (AIR TRAINING) fosters the proper spirit of 'belonging' that is desirable in all Air Training Command personnel. (It) solidifies in each student's mind the desirable and necessary 'tenacity of purpose' required for successful completion of training in his field of endeavor. It aids in clarifying the objective of this command to our trainee personnel."

WICHITA AFB, KANSAS: "The excellent opportunity AIR TRAINING affords young airmen to get an over-all picture of the Air Force justifies its continued publication by Air Training Command. The variety of subject matter gives airmen an opportunity to become acquainted

with phases of the Air Force which would be unknown otherwise and thereby cultivates a feeling of belonging among them."

LAREDO AFB, TEX.: "The wide range of subjects offered by the magazine coupled with definite eye appeal make a combination that is easily read and, for the most part, well remembered. The generous use of pictures makes the magazine appeal to the airmen, where the use of copy alone would preclude his reading the material."

The comments below were supplied by Mr. Rubin F. Monriquez, editor, TIG Brief, March 26, 1954.

COMMANDERS' COMMENT

Typical examples of the interest in TIG Brief are evidenced by the following, among many comments received in this Headquarters.

. . ."It is believed that the check list items, advance information on publications, descriptions of unusually effective procedures used to correct deficiencies and outstanding methods of accomplishing missions offered in the TIG Brief has greatly improved the efficiency and economy of this command . . ..

. . ."In addition it has been found more economical to make distribution to the lower components supervisory personnel than to reprint, or disseminate the contents verbally or through other means. . . ."

. . ."These TIG Briefs are considered a necessity and contain invaluable information for inspection personnel . . . It is believed that these briefs are a "must" for all inspectors . . . .."

. . . "TIG Brief is used extensively for briefing purposes during the Air Force Reserve inactive duty training periods. Air Reserve instructors and composite unit commanders consider this publication a superior means of keeping abreast of current directives and inspection information . . . .."

. . ."Through use of these briefs, this command has been in a position to have first hand knowledge of, and make preparations for complying with many directives long before they are received through regular distribution channels . . . ."

LETTERS OF APPRECIATION

Letters of appreciation for TIG Brief from several Air Force Generals, are on file. The latest ones received are from Major General Lynch, Brigadier General Kessler, and Brigadier General Landon.

To date, all returns dealing with our current TIG Brief survey have been favorable. Quoted below for your information are some of the comments submitted:

"It is the best complete digest of all professional information of a military nature, surely to be received by and at squadron level." (Maxwell AFB)

"It is one of the best condensed reports reaching all levels. It should be mandatory reading of all administrative personnel at all levels." (Godman AFB)

"TIG Briefs contains more up to date, valuable, and absolutely necessary information covering all the fields in which Ground Safety is concerned - DO NOT DISCONTINUE." (Tyndall AFB)

"The TIG Brief contains a wealth of knowledge for myself as well as for my entire staff. The check lists alone are of sufficient value to continue publication of this brief."

"This is one of the vary few means by which an organization at the lowest echelon of command can receive advance information upon which to plan future operations and proper administration." (16th Trp Carr Sq As'lt (L))

"TIG Brief gives an up-to-date of new and revised publications, a ready reference to outstanding deficiencies, and a guide to forthcoming directives. Plus excellent check lists." (Shaw AFB)

"Because it provides me with a competent check list to assure efficient operation - without it some functions within activities might be overlooked." (Ent AFB)

"It is a valuable tool to busy commanders which enables them to keep current on new directives and publications. Valuable to inspectors for the same reasons and also the check lists and additional information furnished." (TTAF)

"The only source that summarizes all recent technical and administrative developments and directives of Air Force-wide importance." (Shaw AFB)

"TIG Briefs are widely read within AMC as concise informative documents exceedingly helpful to commands and Supervisory personnel." (Hq AMC)

"It is considered a useful tool and one of the most important aids in the operation of an inspection function." (Gadsen AF Depot)

"The many references to new regulations, directives and other factual data and information, as well as the informal suggestions contained in the TIG constitute important aids to both commanders, supervisors and operating personnel." (DSC/M - Hq USAF)

"Many of the items briefed are of interest world wide and actually TIG speaks with the official Hq USAF voice and interpretation which in many cases obviates correspondence at Squadron, Group, Wing, Air Force, and command to clarify and interpret." (Tyndall AFB)

"It provides the field with advance information which prevents establishment of systems which will conflict with provisions of new directives briefed. It also provides information for advance planning, before implementation dates for these new procedures are reached." (Griffiss AFB)

"The information in TIG Briefs has often served to clarify directives and procedures, for information of Commanders and Inspectors, provided in no other publication." (Hq EADF)

A P P E N D I X D

FORM LETTER USED

COPY OF FORM LETTER USED

16 March 1954

Major Keith M. Garrison
Editor, Combat Crew Magazine
Strategic Air Command Headquarters
Omaha, Nebraska

Dear Major Garrison:

I am endeavoring to collect research data on selected Air Force command magazines for my Master's Degree thesis in technical journalism at Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma. The title of my thesis is "A Study of Selected United States Air Force Magazines." I have prepared the attached information sheet which itemizes the basic information I am seeking.

If you have available any surveys, polls, readers' opinions, etc. that you have used in the past to test the effectiveness of "Combat Crew," I would certainly appreciate it if I could have a copy of each.

I hope that I have not imposed upon you too much. Your approval of the information that I have asked for is earnestly sought and if possible the attached questionnaire should be returned by April 1, 1954, as I have a turn-in deadline to meet.

Sincerely,

JESSE F. TOWNSHEND, JR.
Major, USAF

VITA

Jesse F. Townshend, Jr.
candidate for the degree of
Master of Science

Thesis: A STUDY OF SELECTED UNITED STATES AIR FORCE MAGAZINES

Major: Technical Journalism

Biographical and Other Items:

Born: September 7, 1919 at Parkersburg, West Virginia

Undergraduate Study: University of Illinois, 1938-1942

Graduate Study: Oklahoma Agricultural and Mechanical College, 1951-1954

Experiences: Three years experience as editor of "The Gateway" which is an Air Base newspaper at Rhein-Main Air Base, Frankfurt, Germany during the Berlin Airlift, 1948-51. Staff editorial advisor to the "Air 'Poke Times," an unofficial publication of the Air Force Reserve Officers Training Corps detachment, Oklahoma Agricultural and Mechanical College, 1951-1955.

Member of: Sigma Delta Chi

Date of Final Examination: May, 1954

THESIS TITLE: A STUDY OF SELECTED UNITED STATES AIR FORCE MAGAZINES

AUTHOR: Jesse F. Townshend, Jr.

THESIS ADVISER: Claron Burnett

The content and form have been checked and approved by the author and thesis adviser. The Graduate School Office assumes no responsibility for errors either in form or content. The copies are sent to the bindery just as they are approved by the author and faculty adviser.

TYPIST: E. Grace Peebles