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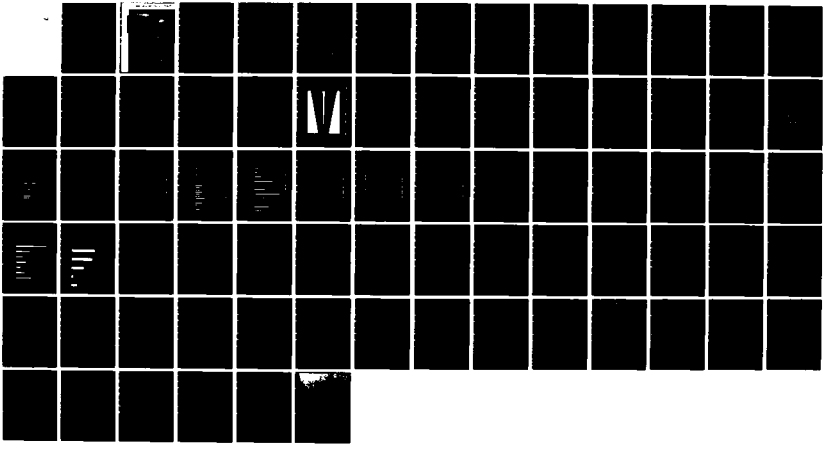

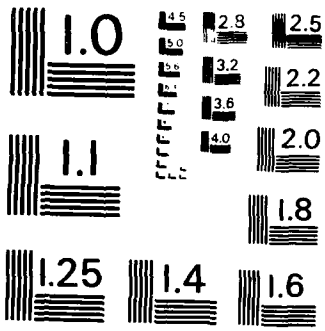

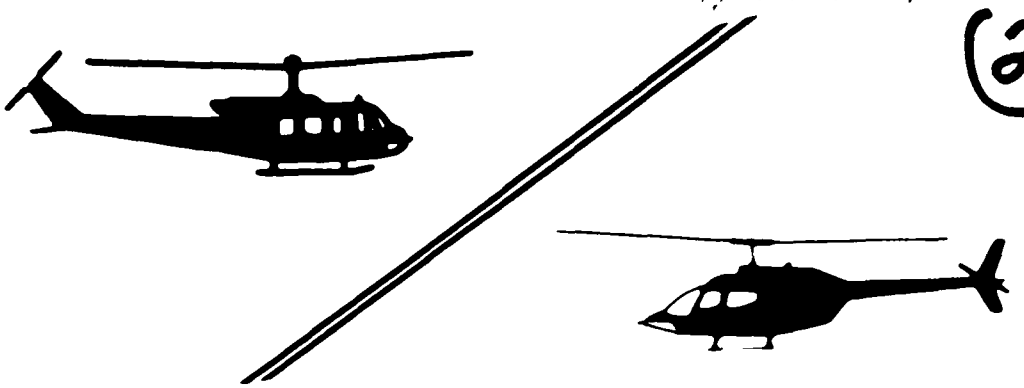

ROTARY WING AVIATOR REFRESHER TRAINING COURSE (RWARTC) EVALUATION

DIRECTORATE OF EVALUATION AND STANDARDIZATION

FORT RUCKER, ALABAMA

DES 81-8B

NOVEMBER 1981

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)* The RWARTC is accomplishing the current course objective in an outstanding manner. The personnel associated with the course are highly professional and are motivated to insure that the students achieve maximum benefit. The course could be more comprehensive in scope, and plans are under way to submit such a proposal. The planned ISD review of the course development should serve to fill the lack of regulatory documentation and may provide further evidence for the need for expanding the training as outlined in the Combat Aviator Refresher Training Course proposal. The RWARTC is a very valuable course for the personnel

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20. (Continued)

returning to aviation assignments. The efforts of all personnel involved are commendable.

PREFACE

This report presents the methods and results of an evaluation of the United States Army Aviation Center's Rotary Wing Aviator Refresher Training (RWART) Course of Instruction. Historical research indicates that the developmental concepts of Instructional Systems Development (ISD) have never been applied to this course. This evaluation precedes the planned initiation of a task analysis by Training Analysis Division (TAD) scheduled for the third quarter of fiscal year 1981.

The evaluation took place during the period of January through March of 1981. Data gathering was limited predominately to internal institutional sources.

The point of contact for inquiry or comment concerning evaluation content is Captain Shivers, Internal Instructional Systems Evaluation Branch, Evaluation Division, Directorate of Evaluation and Standardization, Fort Rucker, Alabama ATZQ-ES-E, 36362: 255-2415/6571, Autovon 558-2415/6571.

ACKNOWLEDGEMENT

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Personnel who directed and supervised this evaluation were: Colonel George F. Newton, Director of Evaluation and Standardization; Lieutenant Colonel John E. Watts, Commander, Instructional Systems Evaluation Division; and Major Marvin McGraw, Commander, Internal Instructional Systems Evaluation Branch.

Personnel who conducted this evaluation were: Captain Wendell W. Shivers, Evaluation Project Officer, Internal Instructional Systems Development Evaluation Branch; Ms. Maryann Shipley, Statistician, Instructional Systems Evaluation Technical Support Branch; and Ms. Susan C. Gantt provided typing and editing assistance for the evaluation.

TABLE OF CONTENTS

TABLES

CHARTS

APPENDIX

RWARTC EVALUATION ABSTRACT

1. PURPOSE: To complete a written evaluation of the Rotary Wing Aviator Refresher Training Course (RWARTC) which assesses course effectiveness in fulfilling its purpose and objectives. Tangential topics will be discussed in a detail commensurate with course impact. Such topics will be recommended as areas for additional study.

2. OBJECTIVES:

a. To assess the degree to which course development and change has been accomplished in reference to the guidelines of the Instructional Systems Development procedure.

b. To collect and analyze student performance data in the form of flight checkride grades, flight hours, and academic diagnostic test scores from actual flight records.

c. To obtain printout data on subject sample from Management Information Systems Office (MISO) to provide confirmation of data accuracy.

d. To review a representative number of student course critiques to determine trends of opinion and quantify repetitive comments.

e. To conduct informal interviews with instructional personnel to obtain opinion data reflecting various perspectives and conclusions concerning course strengths and weaknesses.

f. To review selected pertinent USAAVNC regulations and published guidelines to determine to what extent documentation is required. Also, to carry out research to determine the extent to which these requirements are met, and to estimate the impact of these administrative requirements on the quality of training.

g. To review course materials to determine the extent to which the training materials support and integrate with the course purpose and training objectives.

h. In the course of the evaluation, to informally circulate the current working POI change proposals for the RWARTC among concerned course personnel. This will be accomplished as a service for the course developers and is intended to provide direct feedback on their current ideas. This material will be included in an information section in the evaluation.

3. SUMMARY OF FINDINGS:

a. The data extracted from the student flight records did not precisely match the printout data obtained from MISO for the subject sample classes 80-19 through 80-28. Thirty-five discrepancies were identified. Of these, five were errors made by the project officer

and thirty were made somewhere within the data collection/processing procedure. Nine of the thirty-six sample members had no printout data available.

b. Due to consistently low priority assessment, the Rotary Wing Aviator Refresher Training Course has never been developed or reviewed in accordance with the principles of Instructional Systems Development. A task analysis of the course is presently scheduled to commence in the third quarter of fiscal year 1981.

c. Historical and course development records and materials do not comply with certain requirements of USAAVNC Regulation 350-14 Training Examinations and Standards, USAAVNC Regulation 350-15 Criterion Referenced Examinations, and USAAVNC Pamphlet 310-4 Preparation and Use of Lesson Plans and Instructor Guides. The majority of the discrepancies are attributable to the recent effective date of many requirements and to the fact that ISD principles have yet to be applied to the course. Specific discrepancy items are noted in the body of the report.

d. With the exception of compliance with administrative guidelines, the course material is predominately well coordinated and complimentary. The course objectives are being supported and achieved. The students are predominately pleased with all aspects of the course. The RWARTC is currently fulfilling the purpose and objectives established in the POI in an excellent manner.

e. The relation of the ATM to maneuver standards and flight grading has been identified as a serious problem pervading the entire institution. The problem centers in the method of strict application of the ATM standards to student flight training and the use of the resultant grades as feedback information for institutional management, funding, and evaluation of effectiveness.

f. Statistical analysis of course data indicates a well managed course with acceptable statistical deviation from established objective performance goals. In those cases in which statistically significant deviation was established, an examination of actual time deviations revealed a realistic difference that is inconsequential.

g. A review of course critiques indicated that the vast majority of students feel the course is excellent and of benefit to them. Numerous comments lauded the instructor pilots and 2C35 instructors as being outstanding trainers who were highly professional. The only other major comment was that more time should be made available for tactics and night vision goggle related training.

h. Problem areas within the course, as perceived by instructors and course management personnel, are insufficient personnel, time, and resources, increasing IERW student input causing less available resources and less access to more convenient training facilities, and the fact that RWARTC graduates (future commanders and instructor pilots) lack certain skills acquired by IERW graduates.

i. The Combat Aviator Refresher Training Course (CARTC) review was completed as an information/feedback endeavor separate from the primary intent of the evaluation. Personnel associated with the CARTC agree that key unit personnel and more experienced aviators should have the same knowledges and skills of current aviation doctrine as recent IERW graduates. This factor is at least partially supported by student course critiques and feedback from the Aviation Center Training Analysis and Assistance team visits. However, there is concern and confusion concerning whether the course is a "refresher" or a "qualification" course, how these apparently conflicting purposes integrate, and whether institutional facilities and resources can support such a program.

4. RECOMMENDATIONS:

a. Information for the RWARTC obtained from MISO contained a relatively large number of errors when compared to the flight records on file at DOAT. The fact that data was missing for several sample members increases the cause for concern. It is recommended that the data collection and processing procedure be reviewed to determine the cause of the errors in the system, and to determine how widespread the error rate is within the management information system. (MISO proponency)

b. The RWARTC is of such low priority that it has never benefitted from the ISD procedure. This suggests that DTD might have insufficient personnel resources to adequately support the current developmental course load. It is recommended that a study be conducted to determine if the most effective utility is being gained from current course development resource distribution, or if more efficient resource utilization alternatives are available. (DTD proponency)

c. It is recommended that all parties to the RWARTC be reminded of the regulatory requirements of USAAVNC Reg 350-14, 350-15, and USAAVNC Pam 350-4 to insure continued progression toward fulfilling documentary requirements. Also, the utility of each documentation requirement should be assessed to insure that only minimum essential management documentation is generated. (DTD and DOTD proponency)

d. The current flight grading system is adequate to fulfill instructor/student feedback needs, but fails to provide meaningful ATM standards proficiency progression information to enable quantitative assessment of training needed for institutional management. It is recommended that efforts be initiated to modify the flight grading system to satisfy both functions of the system. (DTD proponency)

5. CONCLUSION: The RWARTC is accomplishing the current course objective in an outstanding manner. The personnel associated with the course are highly professional and are motivated to insure that the students achieve maximum benefit. The course could be more comprehensive in scope, and plans are under way to submit such a proposal. The planned ISD review of the course development should serve to fill the lack of regulatory documentation and may provide further evidence for the need for expanding the training as outlined in the CARTC proposal. The RWARTC is a very valuable course for the personnel returning to aviation assignments. The efforts of all personnel involved are commendable.

1. PURPOSE: To complete a written evaluation of the Rotary Wing Aviator Refresher Training Course (RWARTC) which assesses course effectiveness in fulfilling its purpose and objectives. Tangential topics will be discussed in a detail commensurate with course impact. Such topics will be recommended as areas for additional study.

2. OBJECTIVES:

a. To assess the degree to which course development and change has been accomplished in reference to the guidelines of the Instructional Systems Development procedure.

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g. To review course materials to determine the extent to which the training materials support and integrate with the course purpose and training objectives.

h. In the course of the evaluation, to informally circulate the current working POI change proposals for the RWARTC among concerned course personnel. This will be accomplished as a service for the course developers and is intended to provide direct feedback on their current ideas. This material will be included in an information section in the evaluation.

3. METHODOLOGY:

a. Ten consecutive completed RWART classes were selected for the evaluation. The sample includes classes 80-19 through 80-28. A sample of individuals totaling thirty-six members was drawn from the subject

classes. The flight records of these thirty-six sample members were reviewed to extract the name, rank, social security number, class number, instrument flight grades (diagnostic and evaluation), instrument flight time (2B24, UH-1, and combined), contact flight evaluation grade, contact flight time (day, night, and combined), tactics refresher flight time, and number of times flown with guest instructor. Academic records were found at Maintenance Training Division (MTD) and Instrument Branch. Test scores for the diagnostic exams on UH-1 Systems and Instrument Flight Rules were extracted for each sample member. A request for a computer printout of the subject sample classes was submitted to the Management Information Systems Office (MISO). This data was used to confirm the accuracy of the data extracted from flight records. The accumulated data were subjected to selected descriptive and analytical statistical methods. The results of the statistical applications are detailed in the body of the report.

b. A historical and course development documentation trace was made by inquiry through appropriate personnel in the Training Analysis and Design Division and Course Development Division of the Directorate of Training Developments. Appropriate elements of the Department of Academic Training (DOAT) and the Department of Flight Training (DOFT) were contacted to obtain access to records maintained there. The information obtained was used to form a data base for analysis and for comparison with the requirements of USAAVNC regulations and pamphlets.

c. A set of course material was obtained from Training Literature Management Branch and the appropriate elements of DOAT and DOFT provided access to examinations and any instructional material handed out in class. The material was reviewed for consistency of objectives and tasks. The examinations were reviewed to determine whether the questions tested appropriate learning objectives. No test analysis material was available.

d. A search was conducted to locate all USAAVNC regulations and pamphlets applicable to course development and instructional activities. A comparison was made to determine the extent to which requirements have been met. Additionally, a subjective opinion statement was composed to estimate the impact of regulatory requirements and compliance upon the quality and effectiveness of training.

e. Student critiques for the sample RWARTC classes were not available. However, more current critiques were available. One-hundred and ten (110) student critiques were reviewed. Of these, sixty-three (63) contained written comments. These comments were rank ordered by frequency of occurrence and the results were presented in writing and chart form in the body of the report.

f. Interviews were conducted with instructional personnel. The interviews were conducted informally to allow individual views to be brought out. Topics of discussion initiated by the interviewer were adequacy of resources, suitability and comprehensiveness of course objectives, applicability of center regulatory requirements, and quality of the proposed change to the RWARTC. Other miscellaneous subjects were discussed at the initiative of the personnel interviewed.

g. The forthcoming POI change, including various combat skills qualifications, was obtained from Course Development Division. The proposals were presented to various instructors and course management personnel in order to obtain opinion feedback to assist the Course Development Project Officers in refining the POI.

4. HISTORICAL AND COURSE DEVELOPMENT DATA:

a. An attempt was made to trace Instructional Systems Development (ISD) through the school organizational structure. There were no historical or working data available at Training Analysis Branch. However, a RWARTC course task analysis is scheduled to begin in the third quarter of fiscal year 1981. Training Design Branch cited the fact that no analysis products have been forwarded for their action. They also referred to the scheduled task analysis that will be initiated in the near future. A visit to Course Development Division produced an Instructional File (USAAVNC Form 606, 1 Apr 80) used in conjunction with USAAVNC Pam 310-4. A copy of the cover sheet/directory of this file is included at TAB A. The use of this filing system was initiated with USAAVNC Pam 310-4 dated May 1980.

b. The various branches of DTD are currently in the process of building these files. Required file categories currently or partially developed include the current copy of the POI, action log, correspondence, historical data, and student critiques. Categories not yet filled include worksheets, annual review, instructional management data, test outline and instructions, test summary sheet, validation data, analysis data, and evaluation data. These information voids should presently be considered insignificant. To the extent that historical data is complete, it appears that the course has never been subjected to a systematic analysis and design program. The course is scheduled in the DTD workload for the current fiscal year. The completion of the scheduled ISD review should generate appropriate documentation to complete the required file data.

c. The void of documentation in the analysis and design phases of instructional development contrasts with the volume of historical data available in Course Development Division. One possible inference from this factor is that the RWART course has evolved through consensus of opinion and administrative action without benefit of any instructional development base. This statement is at least partially supported by the enclosed memorandum by LTC Epperson dated 6 June 1977 (TAB B). The source of the problem is that insufficient resources are available to adequately develop and update all the course of instruction at the USAAVNC institution. More effective utilization of our training development resources is a subject area that requires further research and evaluation. The scope of such an effort is beyond the purview of this evaluation and will be left to other independent analyses.

5. INSTRUCTIONAL MATERIALS AND EXAMS:

a. The training materials for the RWARTC were obtained from the Training Literature Management Branch and the appropriate instructional departments. The course Program of Instruction, Flight Training Supplement, Student Handouts, Programed Texts, and Course Examinations were reviewed for general clarity, objective consistency, indications of training supporting stated objectives, and indications that test questions relate to the training objectives. The training material proved to be predominately consistent and coordinated, and does support the POI objectives.

b. The few discrepancies noted in the material are as follows: The stated course purpose is, "To provide aviator personnel returning from nonflying assignments, with refresher training to enable successful completion of a UH1 flight evaluation and rotary wing instrument requalification and familiarization of current tactical operations."

However, a memorandum to DES from the DT, now DOTD, (TAB C) dated 6 May 78, establishes the following policy:

"The awarding or reissuing of a standard instrument rating is a major objective, but does not have to be accomplished. If a student does not receive a standard instrument rating at least a majority of the training toward that goal has been done by us and the training load on the new unit has been reduced considerably." (See TAB C for details and context).

A review of sample data did not disclose anyone who failed to instrument requalify. However, if this policy is still effective, the potential for major confusion exists. The separate nature of a memorandum renders such a policy statement to increasing obscurity and remoteness over time. To eliminate conflict and confusion, this policy, if confirmed to be currently effective, should be included either in the course purpose or as a POI note referenced to the purpose statement.

c. Remaining discrepancies noted consist of conflict between the RWARTC Program of Instruction (POI) and Flight Training Supplement (FTS).

(1) The POI purpose statement refers to instrument requalification while the FTS purpose statement refers to initial award or reestablishment of rotary wing instrument qualification. While the difference of intent is minor, the potential for confusion does exist. The FTS, on page 1-2, para 1-4g states that, "An instrument flight examination may be administered at the end of the Instrument Flight Training Phase by a qualified instrument flight examiner in accordance with the provisions of AR 95-1 and TC 1-135. While the awarding or reestablishing an instrument qualification is a major objective of this course, instrument qualification is not a mandatory requirement for course completion." This statement is in accordance with the stated memorandum policy, but conflicts with the POI.

(2) In three instances, the POI objectives lists tasks that are not contained in the Flight Training Supplement list of Tasks Selected for Training located on page 2-2, para 2-3.

(a) The first subject area is number 57-9619-35, UH-1FS. The POI tasks, not in the FTS, are ATC procedures, Transponder, Instrument Departures, and Communication and Navigation Failure Procedures.

(b) Under subject area number 57-9617-15 UH-1 Refresher, the concerned tasks are Decelerations, Use of Auxiliary Equipment, Confined Areas, Pinnacles, and Slopes.

(c) The third subject area is number 57-9616-15 Tactics NOE and includes the tasks of Downwind Operations and Hazards to Terrain Flight. These task discrepancies should be resolved, so that the Program of Instruction and the Flight Training Supplement will be complimentary.

d. No additional discrepancies in the training materials were noted.

6. USAAVNC REGULATIONS AND DOCUMENTATION REQUIREMENTS:

a. A search of Evaluation Division references was conducted to determine what USAAVNC regulations and pamphlets would apply to the review of the RWARTC. A search of the Aviation Training Library's reference section was completed to insure completeness and currency of references selected. The requirements established by these regulations were reviewed to determine the extent to which they have been met.

b. The first document covered is USAAVNC Regulation 350-14 dated 6 June 1979, Examinations and Standards. This regulation states that examinations will be developed IAW TRADOC Pam 350-30 and/or USAAVNC Pam 310-5.

(1) Paragraph 3e of USAAVNC Regulation 350-14 refers to the requirement for an Evaluation Planning Information Sheet (EPIS) which is to be the cover sheet for the test outline. No EPIS records were found in the course of the evaluation for either the maintenance or the instrument diagnostic exams.

(2) A test outline format is referenced in paragraph 3f. No test outlines were discovered in the course of the evaluation.

(3) Paragraph 3g requires that each POI provide for a comprehensive end-of-course examination covering all terminal learning objectives (TLO). The RWARTC uses an academic diagnostic pre-test for maintenance and instrument instruction. However, there are no provisions for a comprehensive end-of-course examination for those individuals whose pre-test performance requires completion of applicable instruction. The fact that all academic instruction in the RWARTC is self-paced is immaterial as paragraph 3a(1) states that, "Examinations for self-paced courses will be developed and included on the same basis as for other courses."

(4) Paragraph 5c states that, "Instructional departments will deliver one keyed copy of examinations and all masters used for printing to TAD, DTD. TAD will maintain a record file." Although the instructional departments maintained keyed copies of examinations, TAD had no documentation on file for the RWARTC.

(5) Paragraph 10a refers to the Management Information Systems Office (MISO) as being responsible for maintaining grade records for all students. "A master grade record will be prepared for each student from the official class roster for each class entering a course. Each record will identify the student by course, name, social security account number and class, and will include all examination grades and course averages." A printout of the grade records for the sample classes was requested of and received from MISO. All data categories were present except for student grades on the academic diagnostic examinations for maintenance and instruments. The primary purpose of obtaining the MISO data printout was to confirm the accuracy of the sample data extracted manually from the historical flight records. When the available data from each source were compared, numerous discrepancies were noted. These discrepancies were resolved by reviewing the actual flight records to reconfirm the correct data. Of the thirty-five discrepancies noted, five were the result of transcription error by the project officer and thirty were the result of error somewhere within the data collection/ processing procedure. The records of nine individuals of the thirty-six sample members had no printout data available. This constitutes twenty-five percent of the selected sample. If it is assumed that the high incidence of error, noted in this case, is representative of the available data institution wide, then serious doubt is established concerning the credibility of utilizing MISO information sources for managerial and administrative decision reference.

(6) Paragraph 11a states that, "MISO will prepare statistical analyses of examinations to improve the quality of tests and to obtain useful data for improvement of training, . . ." Paragraph 11b states that "DT will provide TAD, DTD with a statistical report for each approved examination in each POI." No examination analysis records were discovered in the course of the evaluation.

c. The second document covered is USAAVNC Regulation 350-15 dated 16 January 1981, Criterion Testing. It should be understood that this regulation is very recent and a reasonable amount of time has not yet passed to expect much implementation progress.

(1) Paragraph 3a of USAAVNC Regulation 350-15 states that "USAAVNC POIs" . . . "over 2 weeks in length will include a Criterion Test (CT) for formal evaluation of student achievement." The RWARTC course length exceeds the two week time frame.

(2) Paragraph 5 covers documentation and requires the maintenance of:

(a) CT Summary Sheet (USAAVNC Form 809)

(b) CT Outline (USAAVNC Form 801)

(c) Master copy and solution sheet for each CT

(d) Instructions for administration

(e) Scoring and grading instructions

(f) CT Analysis Plan

The above documents are to be prepared and filed IAW USAAVNC Pam 310-4 using USAAVNC Form 606-2. The requirements of USAAVNC Pam 310-4 and Form 606-2 were discussed earlier under Historical Data and Course Development. Presently, none of the above stated CT documents are available for the RWARTC.

d. It is significant to the evaluation to introduce the following information concerning the grading system. In the course of conducting interviews with flight instructors, the subject of faults in the flight grading system was discussed. The main source of concern centers upon the relationship between USAAVNC Reg 350-16, the Uniform Flight Grading System (16 Dec 70) and the maneuver standards delineated in the Aircrew Training Manual (ATM). The use of the letter grades in accordance with USAAVNC Reg 350-16 is defined in terms of "the level of student training" and the "accuracy of performance that can be expected of students." A void exists in that there is no guidance that ties ATM standards to the allowances made by instructors for "student" performance considerations. There is no definition of the precision of satisfactory maneuver execution that qualifies for the assignment of an A, B, or C.

e. There is no significant concern with the flight grading system in the context that it is a tool for facilitating student feedback or motivation. Normally, instructor pilots start a phase of instruction with a concept of a wide range of maneuver performance that will warrant the award of a satisfactory grade. As the training progresses, the range of acceptable maneuver performance narrows at some undeterminable, variable rate to, ideally, approach the parameters of the ATM standard by the end of training. This variable rate of change in acceptable maneuver performance is expected and varies among individual instructors. A chart depicting one estimate of this phenomenon is illustrated in Chart 1.

ESTIMATE OF VARIABLE FLIGHT GRADING PARAMETERS PHENOMENON

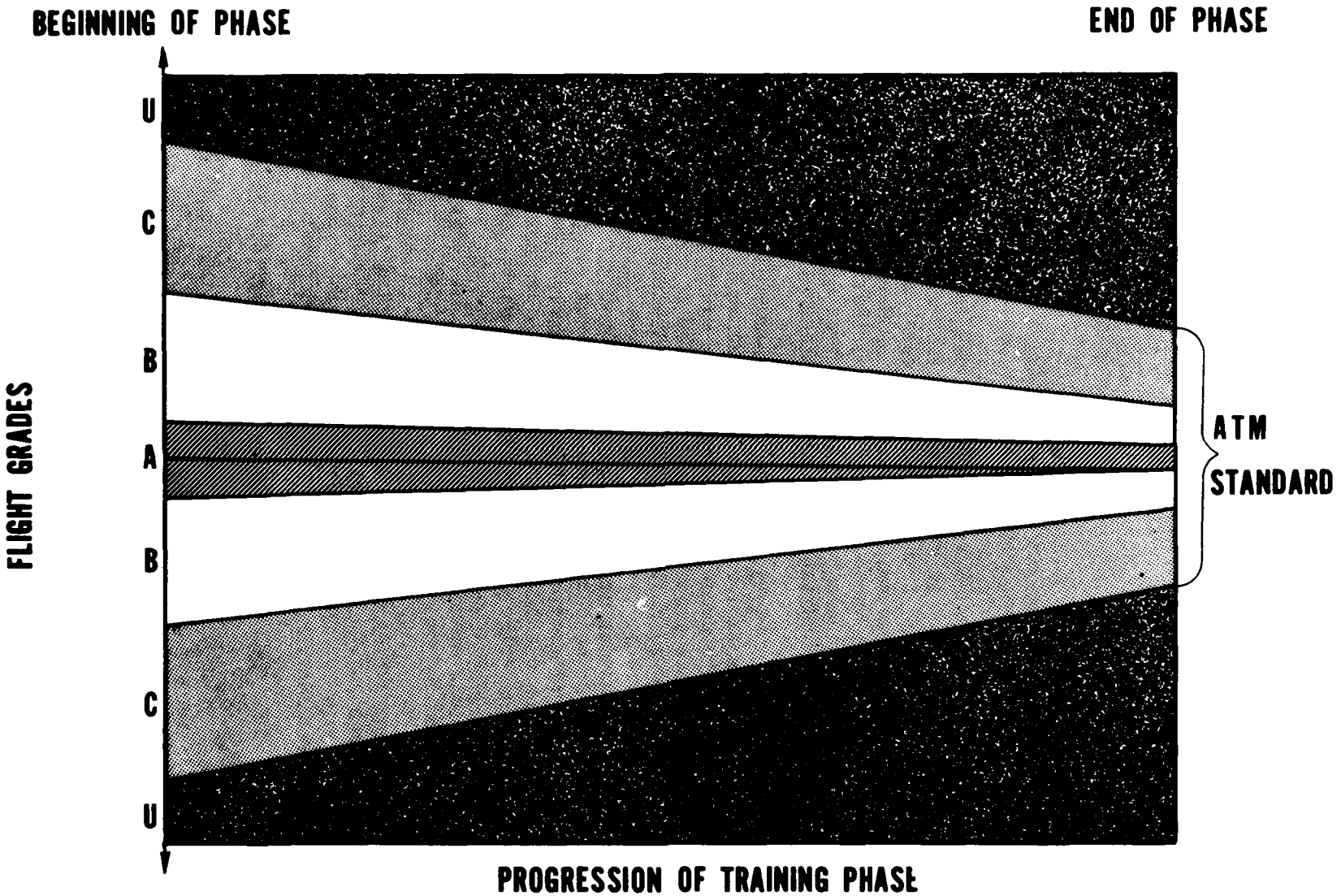


CHART 1

f. The theory depicted in the chart is at least partially supported by a review of student daily maneuver grades in any course. The majority of students will receive Bs for several iterations of a maneuver. This is probably attributable to the comparatively large range of acceptable maneuver performance at the initial stages of training. Also involved is the factor that many instructors use several observations of student performance upon which to modify their individual rate of change of acceptable maneuver performance. The "Average" student who progresses at an acceptable rate will be awarded a series of Bs. Deviations from the standard grade of B are made to reward superior performance, to indicate to the student that he is not progressing adequately or that the student is not meeting the instructor's expectations. Occasionally, grades below B are used to discourage unsafe habits or to motivate a student who, although performing acceptably, is not, in the instructor's judgement, achieving his potential ability due to an attitude problem or overconfidence.

g. This application of flight training and student feedback is defensible and appropriate in the context of the pure objective of developing and maintaining student morale and confidence while progressing through flight training in a high pressure training environment. This application also provides an effective communication tool through which a marginal student may be clearly informed of his situation and given a reasonable opportunity to improve before administrative action is required.

h. Of concern to the evaluation, is that this method, when used in grading, affects accurate objective data collection and analysis. The subjective portion of flight grading does not facilitate accurate evaluation when the resulting grades of student performance is not measured in accordance with a precisely defined flight maneuver performance standard on a daily basis. Using subjectively derived flight grades to evaluate performance prevents objective evaluation of the effectiveness of training.

i. Since there is no guidance defining the breakdown of ATM maneuver performance standards into the precision required for each satisfactory grading category (i.e. A, B, and C), the individual instructor pilot must develop his own criteria for awarding the various satisfactory grades. The individual instructor probably acquires his grading concepts through comparison of personal concepts with the perceived standards of his instructor pilot peer group.

j. Problems are encountered when attempts are made to evaluate the adequacy of time, resources, and attainment of objectives under a given POI based on flight grades. In examining adequacy of time, a standard or defined decision rule is necessary in order to determine the degree of proficiency attained. Using some specified series of satisfactory grades is not preferred for use as accurate objective data. When a series of daily grades are reviewed for a given course, the series of grades is likely to start with several Bs followed, in some cases, by occasional downgrades toward the course midpoint, hopefully followed by gradual improvement until consistent As and Bs are found

just prior to the checkride. If it is assumed that ATM standards are strictly applied, then the first series of satisfactory grades in the first days of a course would be interpreted as achievement of course objectives. The example below is the record of a student (sample number eight) from an earlier evaluation of the UH-1 MOI course.

Training Days	1	2	3	4	5	6	7	8	9	10	11	Checkride
Maneuver Performed												
Simulated Hydraulic Failure	B	B	C	U	B	B	U	B	C	C	--	B
Autorotation with Turn	B	B	B	B	B	C	C	----------				U
Simulated Anti-Torque Failure	B	B	C	B	B	B	B	U	C	B	C	U

Again assuming uniform application of ATM standards for the maneuver - autorotation with turn, it should be safe to assume that the maneuver was consistly mastered until training day six. At training day six it appears that learning regression has occurred culminating in an unsatisfactory performance.

NOTE: The lack of grades in the chart under days eight to eleven does not mean that time elapsed between the last training day and the checkride. It simply indicates the number of training days on which the maneuver was practiced.

The strict interpretation would be that too much time might be allotted in this instance as competency was attained and proficiency declined. It is not considered likely that this is a logical application of the facts.

k. Assuming that the grade patterns depicted in the chart are fairly common, it would also be difficult to accurately determine whether the maneuver training objective is being performed to ATM standards or whether reductions in training time is having a significant impact on training. Another apparent phenomenon observed is that IPs tend to sympathize with the human dilemma of not enough time to meet ATM standards. They are often unwilling to fail students who are giving their all, are progressing satisfactorily based on perceived group norms, but are unable to attain ATM standards in course time allotted. Admission to flight school is a challenge and flight training generates sufficient pressure without penalizing the students further with unrealistic time constraints. Therefore, an informal undefined minimum "safety" standard or performance level expected of students seems to be applied in certain cases to prevent setback or elimination of students who are considered "average" or better.

l. In considering the problems of the flight grading system, it is

critically important to realize that the system serves two separate and distinct functions. The function that is of primary importance to instructors and is evidenced on a daily basis, is the student progress/feedback - motivation/communication function. The function that is of relative insignificance to instructors is the feedback of student performance information to the administrative and budgetary departments of the school. The importance of flight grades to the administrative decision process seems not to be correctly perceived by flight instructors. An attempt to resolve the flight grading situation is beyond the scope of this evaluation. The perceived impact of this problem on the institution seems to warrant further investigation and analysis. It is suggested that any such study should include an attempt to derive a flight grading system that will satisfy both perceived flight grading needs.

m. It is interesting to note that the evaluator of the RWARTC found the course to be progressing well and to be consistently meeting the course objective. Input from developers, instructors, and students as well as review of course materials showed that the POI purpose and objectives constitute a solid, effective course. As with many other courses in the school, several areas exist where more comprehensive or additional instruction could substantially improve the course. These areas, such as Combat Skills and NVG, are those that would equally qualify RWARTC graduates with new IERW graduates. However, in consideration of time and resources allocated, the execution of the current program of instruction and the attainment of course objectives are being performed in an excellent manner. It was not until the course was considered in light of applicable regulation and pamphlet requirements that significant shortcomings were discovered. The documentary requirements established seem designed to provide detailed information for managers and administrators. While the approach of "near perfect" availability of information for management is certainly desirable, consideration must be given to the degree of burdens and costs placed on available resources administrative demands. The RWARTC fails to comply with a number of regulatory administrative requirements, yet all other evidence in this evaluation suggests that the course is satisfactorily fulfilling the purpose for which it was established. Further research is warranted to assess the utility of the institutional administrative philosophy and to address the effectiveness of regulatory requirements in improving the institutional product.

7. STATISTICAL ANALYSIS:

a. The data obtained from the student course records were subjected to various techniques of statistical analysis. The academic and flight grades were treated by simple descriptive techniques as contained in the body of this section. For the purpose of analysis, the phases of flight instruction were treated in the following categories: the UH-1 Flight Simulator (UH-1FS/2B24) course, the Contact course, broken down by day and night; and the Tactics Course. The data for these courses were arrayed and analyzed by means of the Chi-Square test and the student's t-test.

b. Table A presents the mean, median, mode, and standard deviation data for the categories of instrument academic diagnostic test scores; instrument flight grades, instrument flight time, UH-1 Systems diagnostic test scores, UH-1 contact flight grades, UH-1 contact flight time and UH-1 tactics refresher flight time.

c. The term, mean, is synonymous with the arithmetic average and is determined by summing all the scores in a set of data and dividing by the total number of scores. The mean is the measure of central tendency that best reflects the predominance of the scores. The symbol for the mean of a sample is X. The median is the score above which fifty percent of the scores fall. The median is a good measure of the concentration of scores and does not give undue weight to a few extreme values. The symbol for the median is Mdn. The mode score best represents the most likely scores that will occur. For a given set of data, there may be more than one mode. The symbol for the mode is Mo. If the distribution of a given set of data conforms exactly to the normal distribution, then the values of the mean, median, and mode will be equal.

d. The standard deviation is a measure of variability. The standard deviation shows dispersion about the mean. The symbol for the standard deviation for a given set of data is S_X.

e. The symbol N is used to represent the number of data items included in the computation. Information depicting the range of scores for the numerical flight and academic grades is included in Table A to provide a better perspective for understanding the difference between mean, median, and modal scores.

f. Charts 2 through 10 display the distribution of course time and test scores for all members of the sample. These charts reference Table A and should be used concurrently to aid in comprehension of the data.

TABLE A Presentation of the Values of the Mean, Median, Mode, and Standard Deviation by Training Course

Instrument Academic Diagnostic Test Scores (See Chart 2)

Number of Scores (N)	=	32
Mean (X)	=	83
Median (Mdn)	=	86
Mode (Mo)	=	88
Standard Deviation (Sx)	=	9.8
Range (of Scores)	=	50 to 96

Instrument Flight Grades (See Chart 3)

N	=	35
X	=	86
Mde	=	87
Mo (Bi-modal)	=	85 + 89
Sx	=	3.97
Range	=	75 to 95

Instrument Flight Time (POI times authorized)

	2B24 (12.0) (See Chart 4)	UH-1 (6.5) (See Chart 5)
N =	21	21
X =	11.98	6.37
Sx =	0.75	1.66

UH-1 Systems Diagnostic Test Scores (See Chart 6)

N =	31
X =	83
Mdn =	84
Mo =	86 + 88
Sx =	9.57
Range =	58 to 92

UH-1 Contact Flight Grades (See Chart 7)

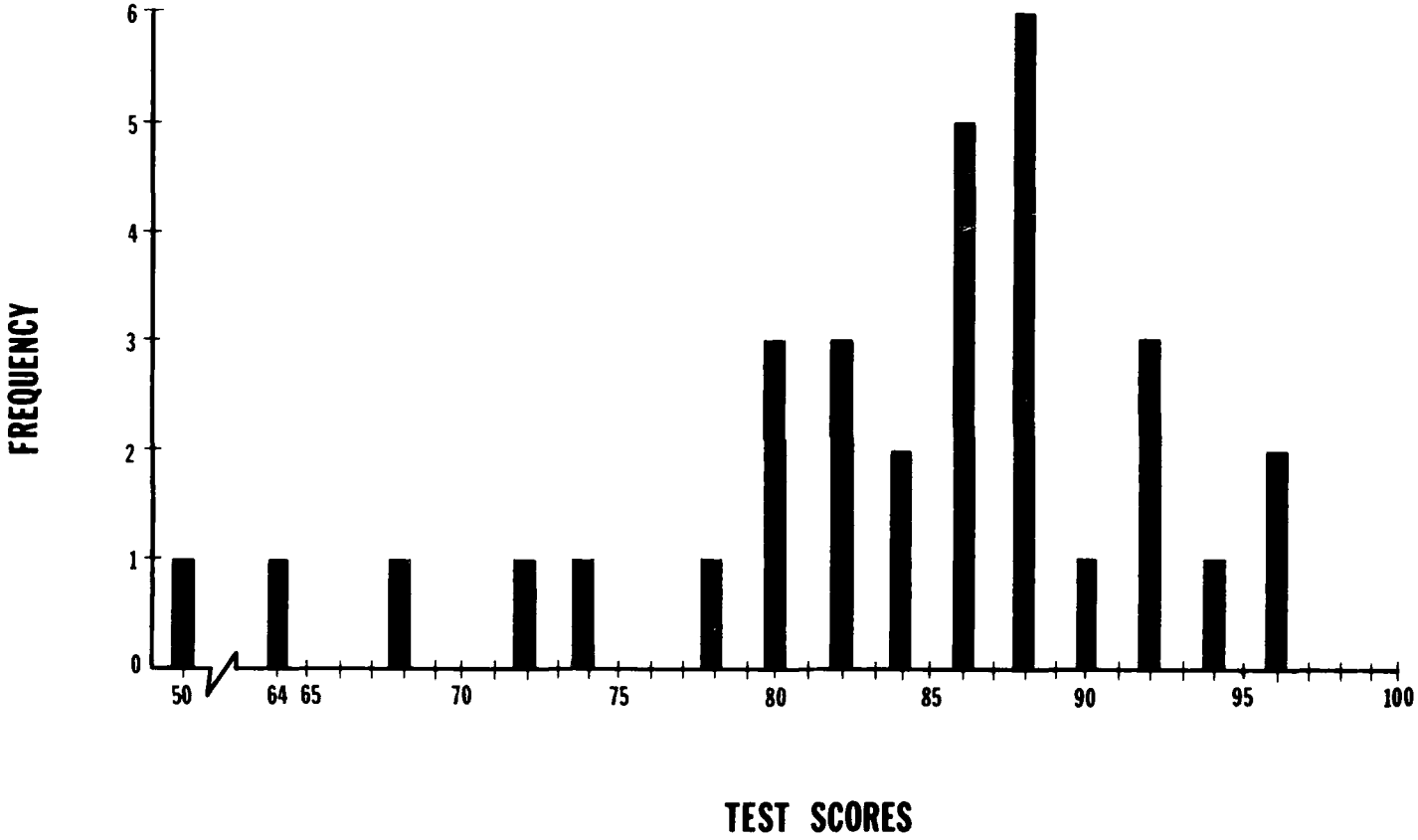
N	=	35
X	=	87
Mde	=	87
Mo	=	86 + 88
Sx	=	2.70
Range	=	82 to 92

UH-1 Contact Flight Time (POI Authorized Times)

Day (6.0) (See Chart 8)			Night (1.5) (See Chart 9)
N	=	21	21
X	=	5.31	1.08
Sx	=	0.98	0.25

IFR ACADEMIC DIAGNOSTIC TEST SCORES

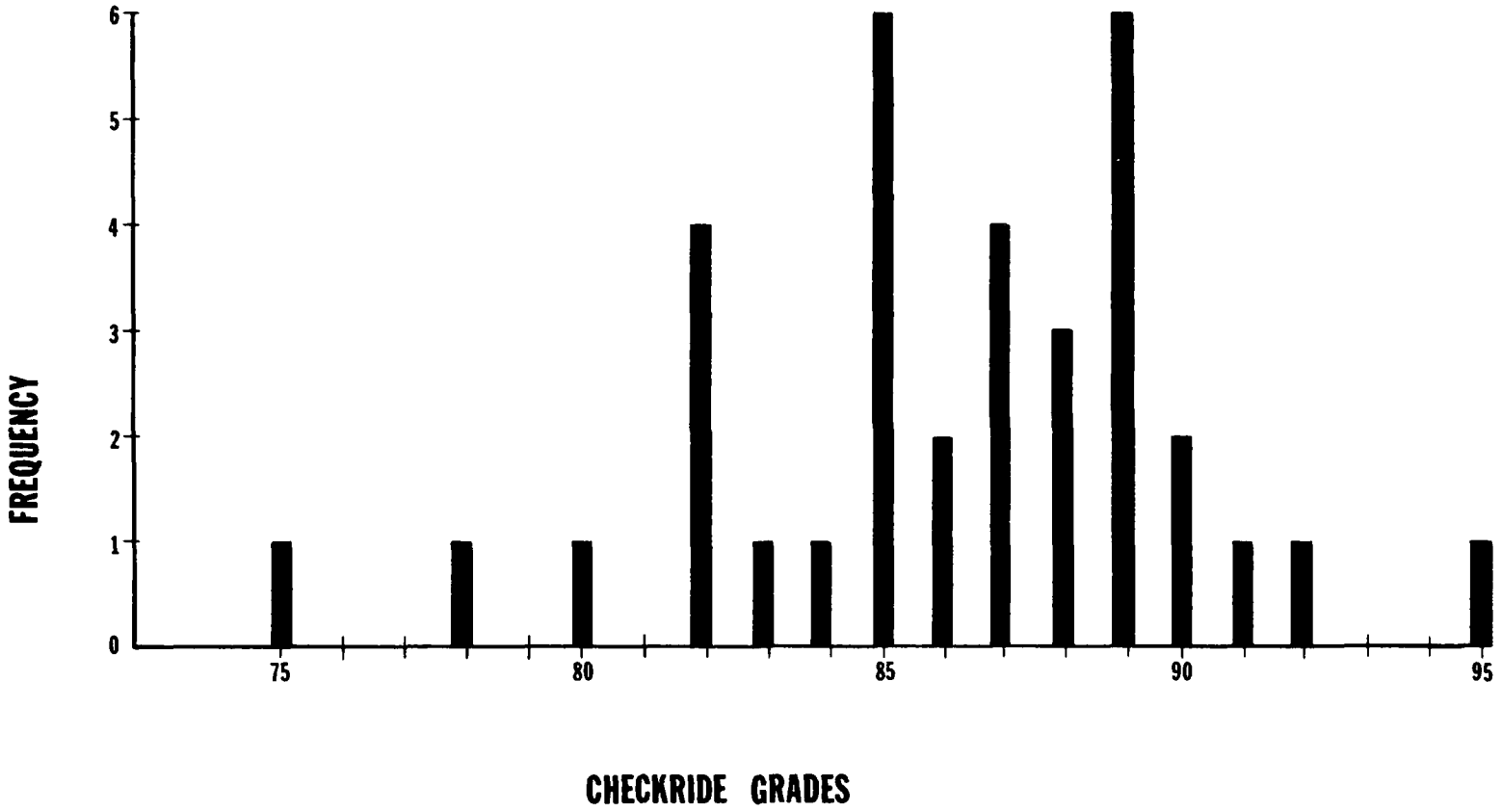
CHART 2



NOTE: THE CHARTS DEPICTING ACADEMIC TEST SCORES AND CHECKRIDE FLIGHT GRADES UTILIZE ALL VALUES OF THE SAMPLE GROUP TO INCLUDE THOSE WITHOUT SCORES IN ALL TRAINING PHASES. THIS FACTOR ACCOUNTS FOR THE DIFFERENCE IN THE N VALUE BETWEEN FLIGHT TIME COMPUTATIONS/CHARTS AND GRADE COMPUTATIONS/CHARTS.

INSTRUMENT FLIGHT CHECKRIDE GRADES

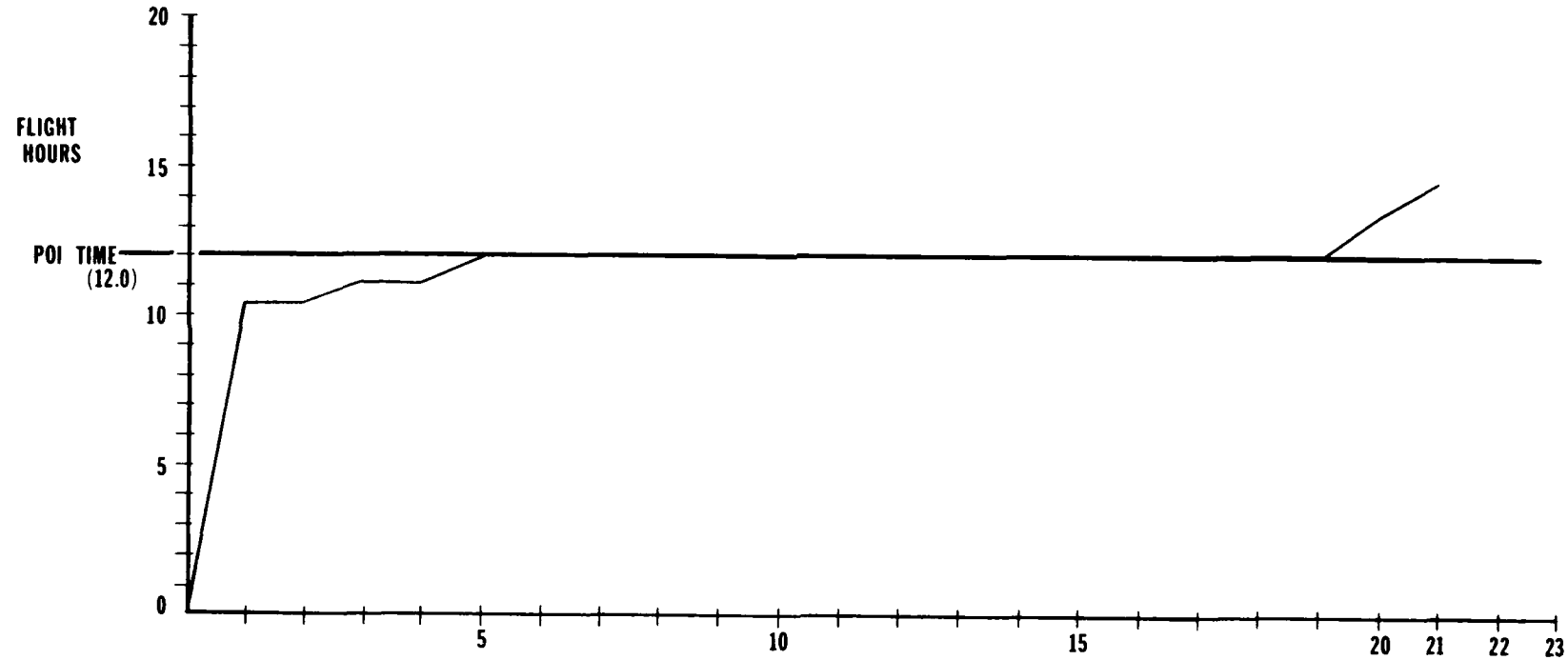
CHART 3



NOTE: THE CHARTS DEPICTING ACADEMIC TEST SCORES AND CHECKRIDE FLIGHT GRADES UTILIZE ALL VALUES OF THE SAMPLE GROUP TO INCLUDE THOSE WITHOUT SCORES IN ALL TRAINING PHASES. THIS FACTOR ACCOUNTS FOR THE DIFFERENCE IN THE N VALUE BETWEEN FLIGHT TIME COMPUTATIONS/CHARTS AND GRADE COMPUTATIONS/CHARTS.

UH-1 FS (2B24) FLIGHT HOURS

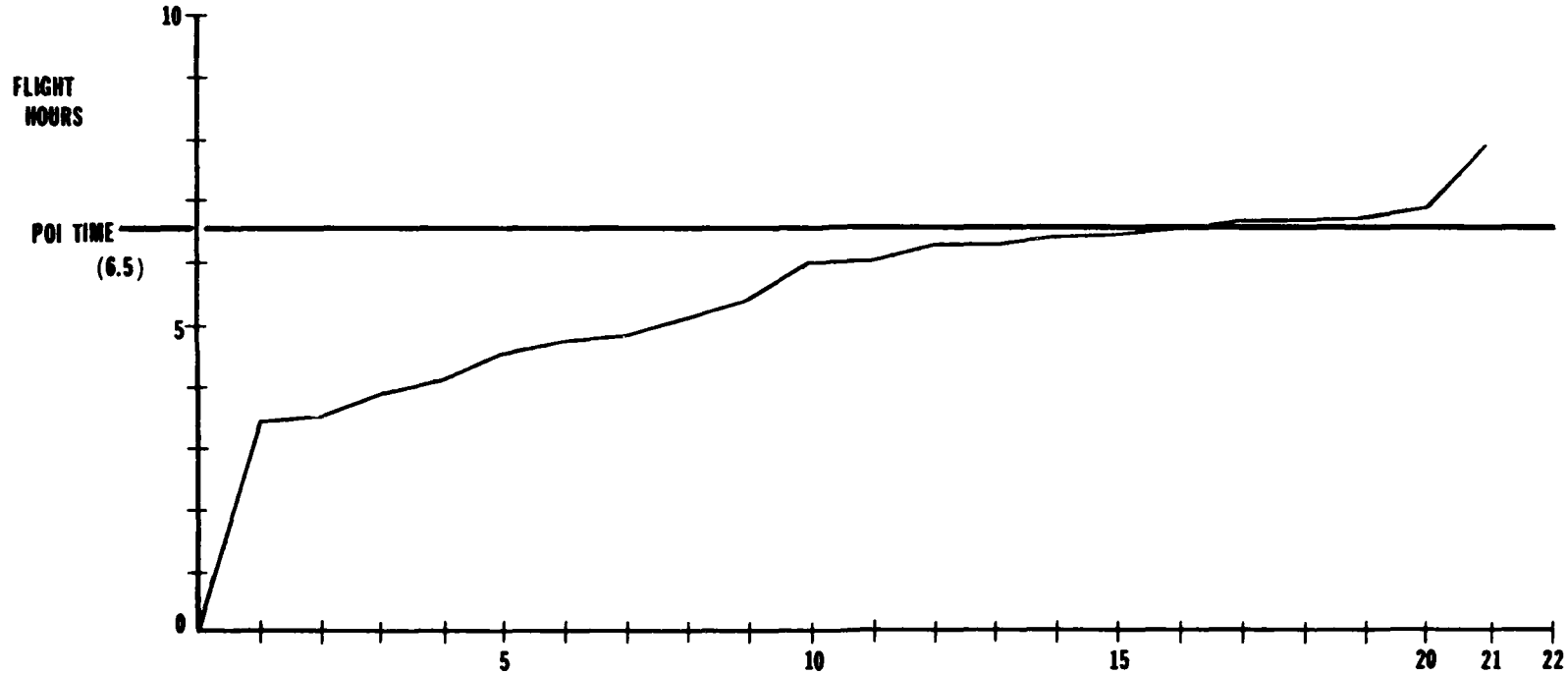
CHART 4



INDIVIDUAL FLIGHT STUDENTS

CHART 5

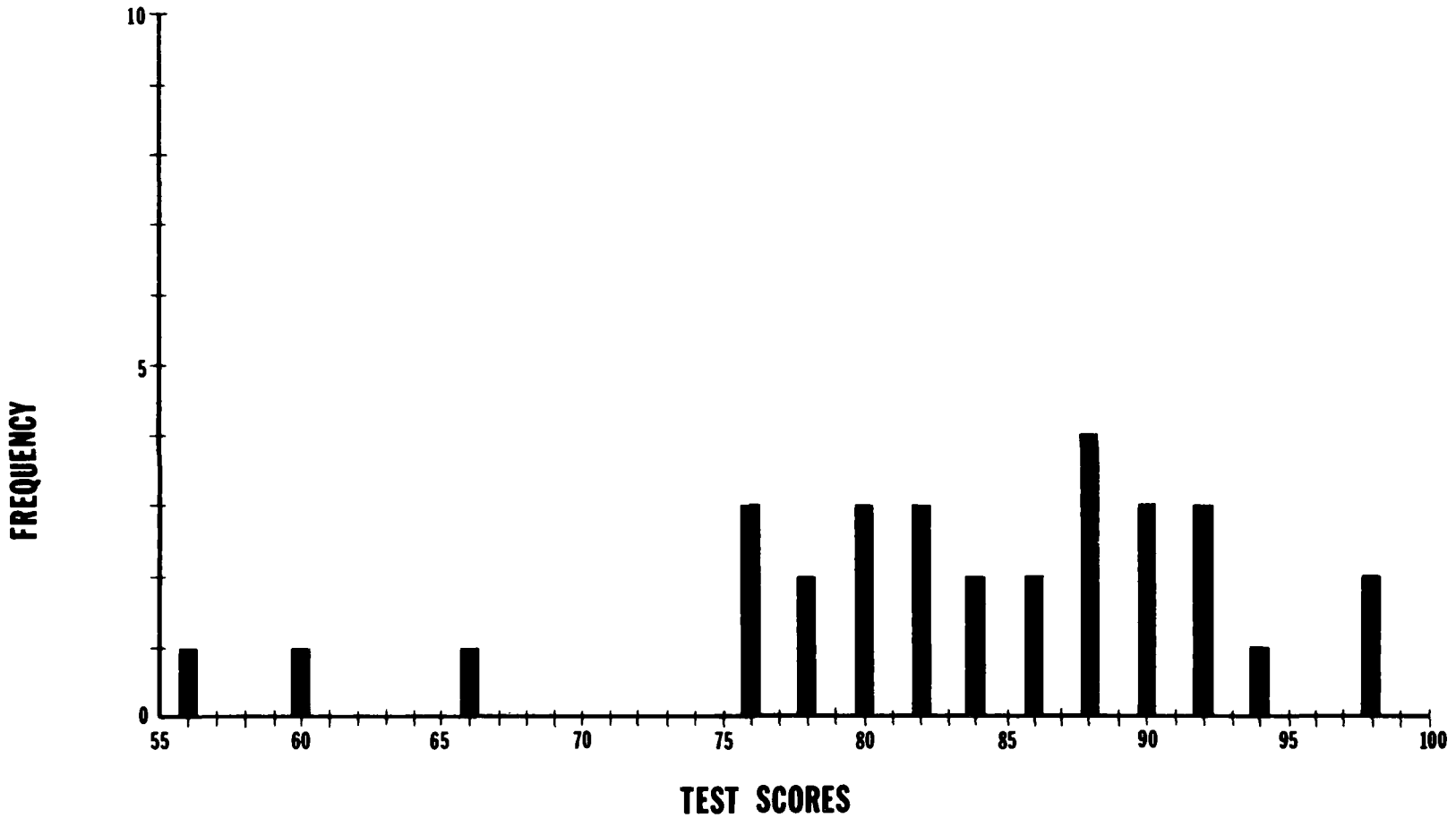
UH-1 AIRCRAFT FLIGHT HOURS



INDIVIDUAL FLIGHT STUDENTS

UH-1 SYSTEM DIAGNOSTIC TEST SCORES

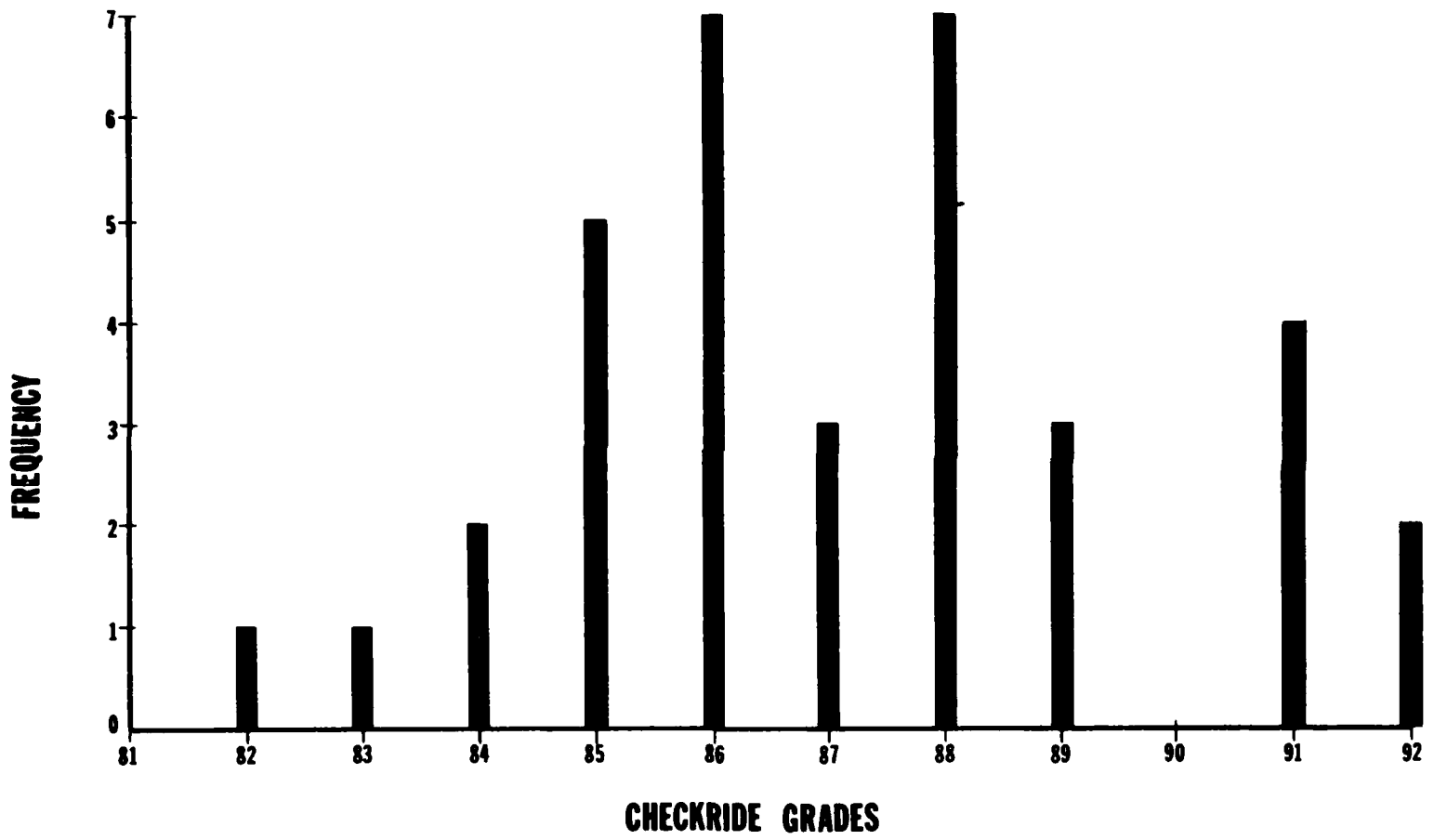
CHART 6



NOTE: THE CHARTS DEPICTING ACADEMIC TEST SCORES AND CHECKRIDE FLIGHT GRADES UTILIZE ALL VALUES OF THE SAMPLE GROUP TO INCLUDE THOSE WITHOUT SCORES IN ALL TRAINING PHASES. THIS FACTOR ACCOUNTS FOR THE DIFFERENCE IN THE N VALUE BETWEEN FLIGHT TIME COMPUTATIONS/CHARTS AND GRADE COMPUTATIONS/CHARTS.

UH-1 FLIGHT CHECKRIDE GRADES

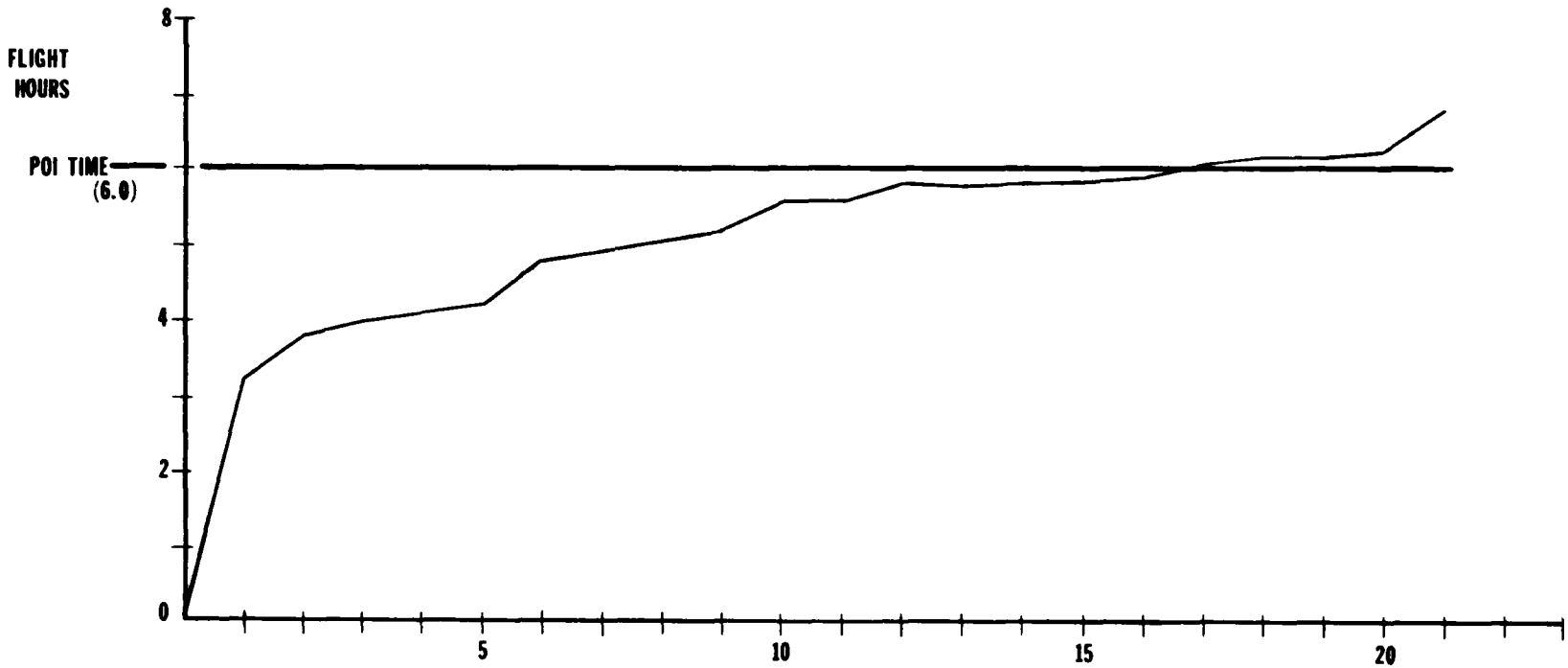
CHART 7



NOTE: THE CHARTS DEPICTING ACADEMIC TEST SCORES AND CHECKRIDE FLIGHT GRADES UTILIZE ALL VALUES OF THE SAMPLE GROUP TO INCLUDE THOSE WITHOUT SCORES IN ALL TRAINING PHASES. THIS FACTOR ACCOUNTS FOR THE DIFFERENCE IN THE N VALUE BETWEEN FLIGHT TIME COMPUTATIONS/CHARTS AND GRADE COMPUTATIONS/CHARTS.

UH-1 CONTACT FLIGHT HOURS - DAY

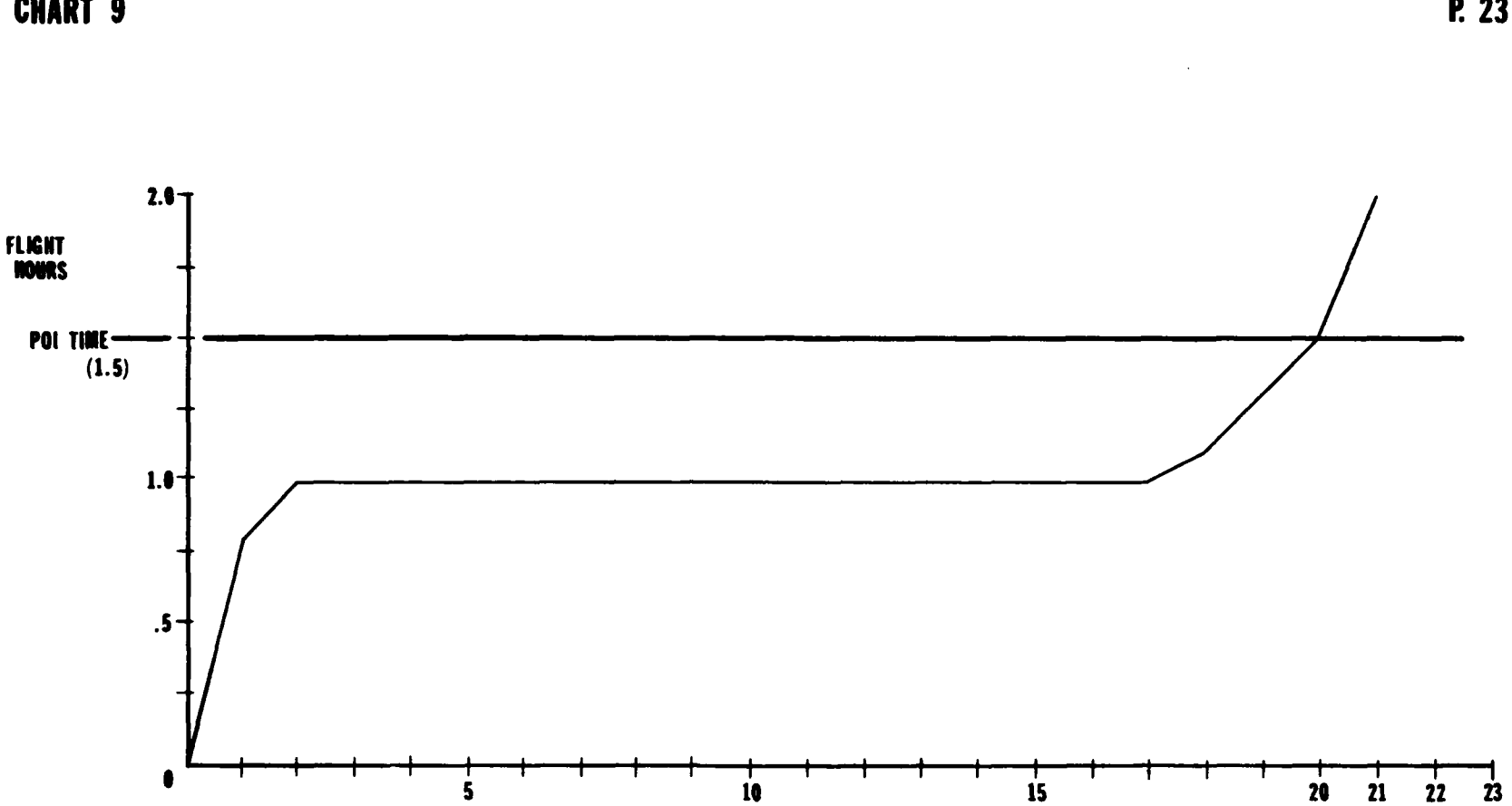
CHART 8



INDIVIDUAL FLIGHT STUDENTS

CHART 9

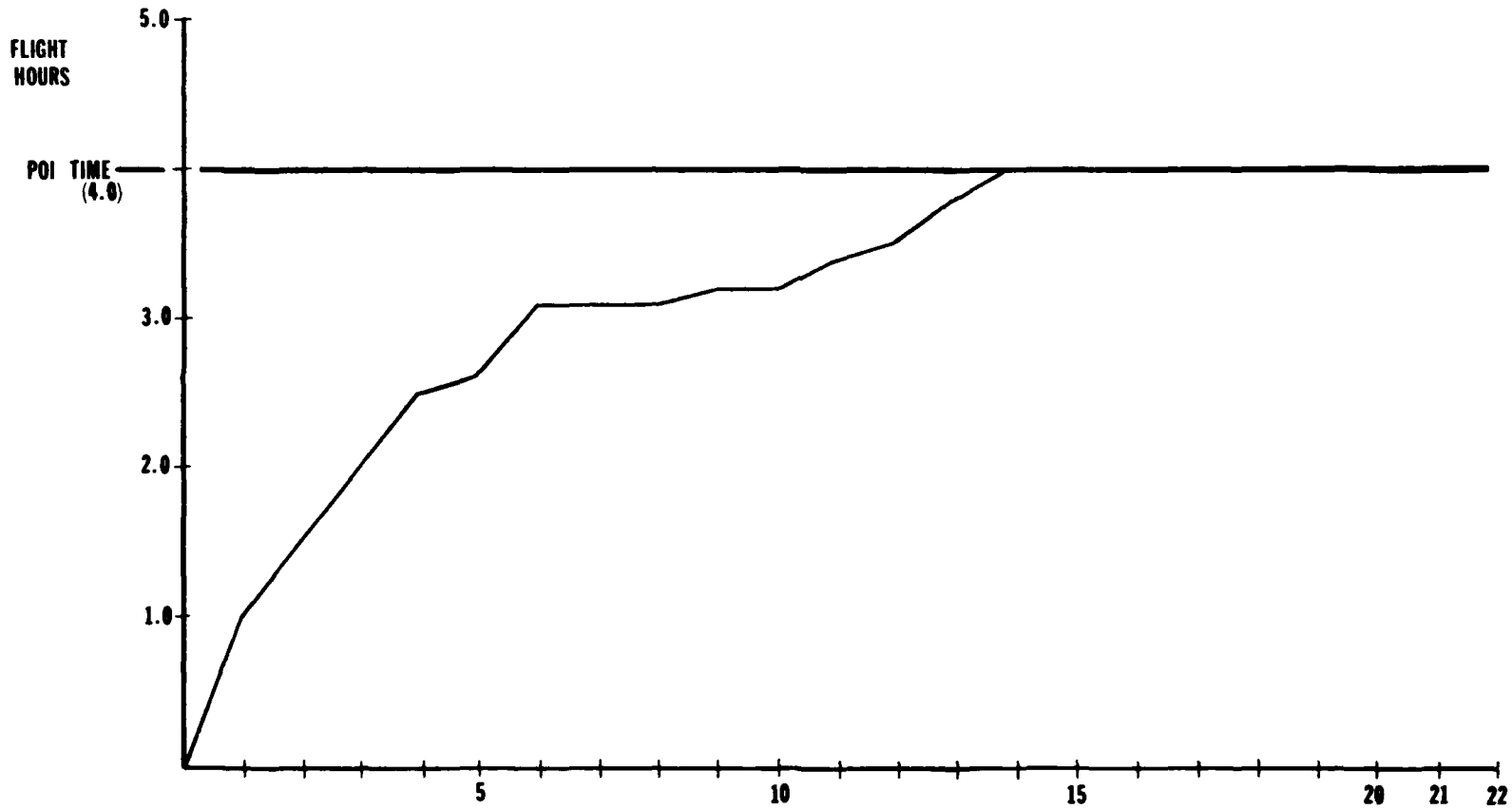
UH-1 CONTACT FLIGHT HOURS - NIGHT



INDIVIDUAL FLIGHT STUDENTS

TACTICS REFRESHER FLIGHT HOURS

CHART 10



INDIVIDUAL FLIGHT STUDENTS

UH-1 Tactics Refresher Flight Time (4.0 hours) (See Chart 10)

$N = 21$

$\bar{X} = 3.24$

$S_{\bar{X}} = 0.88$

g. As preparations were made to progress from descriptive statistical applications to the application of an analytical approach, a potential problem was identified. The original set of data contained thirty-six sample members. However, not all of the thirty-six members completed all training phases or had record data available for each category. Therefore, to avoid distortion of the data and analysis, the decision was made to employ only those sample members who had complete sets of data available. The number of sets of data meeting these criteria was twenty-one. This factor accounts for the different N values in the categories displayed in Table A, and in the N values in Charts.

h. Table B gives the breakdown of the flight time used in each course for each of twenty-one students who completed all the courses. The authorized syllabus time is indicated in parenthesis below each heading.

TABLE B

FREQUENCY OF ACTUAL NUMBER OF HOURS USED BY COURSE

	Instruments		Contact/Tactics		
	UH1FS	AC	Day	Night	Tactics
Authorized Time / Actual Hrs Used	(12 hrs)	(6.5 hrs)	(6 hrs)	(1.5 hrs)	(4.0 hrs)
14	1				
13.5	1				
12.0	15				
11.2	2				
10.5	2				
10.1		1			
8.4		1			
8.2		1			
8.0		2			
7.2		1			
7.1		1			
7.0			1		
6.8		1			
6.7		1			
6.5		1			
6.4			1		
6.3			2		
6.2			1		
6.0		3			
5.9			1		
5.8			2		
5.7		1	2		
5.6		3			
5.5			2		
5.4		1			
5.3			1		
5.1			1		
4.9			1		
4.8			1		
4.3			1		
4.1			1		
4.0					8
3.9		1	1		
3.8			1		1
3.5		1			1
3.4		1			1
3.3			1		
3.2					2
3.1					3
2.6					1
2.0				1	1
2.0				1	1
1.5				1	1
1.3				1	
1.1				1	
1.0				16	1
0.8				1	

For the UH-1FS phase, fifteen (15) students completed in exactly the authorized time of twelve (12) hours and four (4) completed in less time. For the aircraft phase, one student finished in the authorized time of six and one-half (6.5) hours and eleven finished in less time. A reduction of time was also realized for day flight with sixteen (16) students completing in under the authorized six (6) hours. Only one student took more than the syllabus time of one and one-half (1.5) hours for the night course and everyone completed the tactics at or under the authorized time of four (4) hours.

i. Table C summarizes the mean and standard deviation for each of the flight phases within the refresher training program.

TABLE C
MEANS AND STANDARD DEVIATIONS IN HOURS BY COURSE

	UH-1FS	AC	DAY	NIGHT	TACTICS
$\bar{X}$	11.98	6.37	5.31	1.08	3.24
$S_{\bar{X}}$	0.75	1.66	0.98	0.25	0.88

Two questions are addressed with these data. First, are the frequencies observed in Table B different from those expected in a normal distribution? The assumption is that the amount of time authorized in the syllabus is a reasonable estimate of the average time it would take experienced aviators to complete refresher training. A further assumption is that the time-to-complete for all such aviators is approximately a normal probability distribution. Under this second assumption, one would expect to find two-thirds of all aviators completing the course within a range one standard deviation above the mean to one standard deviation below the mean. For a group of twenty-one (21) aviators one would then expect to find approximately fourteen (14) in this range and the remaining seven (7) divided above and below these limits.

j. Table D gives the distribution of frequencies from the data in this report for the three corresponding groups; those whose time was greater than one standard deviation above the mean, those whose time was between one standard deviation above and one standard deviation below the man, and those whose time was less than one standard deviation below the mean.

TABLE D
ACTUAL FREQUENCY DISTRIBUTION OF TIMES BY COURSE

	A	B	C
	$t < X-1S$	$X1S < t < X+1S$	$X+1S > t$
	F	F	F
UH-1FS	2	17	2
AC	3	15	3
Day	4	12	5
Night	1	18	2
Tactics	3	18	0

A = Time less than one standard deviation below the mean

B = Time between one standard deviation below the mean and one standard deviation above the mean

C = Time greater than one standard deviation above the mean

Table D shows that the majority of aviators completed each course in the time interval between plus and minus one standard deviation.

k. A Chi-Square test was used to test the distribution given in Table D for normality. Table E gives the results of the Chi-Square tests.

TABLE E
CHI-SQUARE VALUES BY COURSE

UH-1FS	AC	DAY	NIGHT	TACTICS
1.92	0.21	1	3.57	4.71

df = 2

A Chi-Square value of 5.99 or more is statistically significant. Since none of these values indicate a statistically significant difference between the expected distribution of frequencies and the actual frequencies, the normal distribution may be used as a basis for the further analysis.

l. The second test was applied to determine if the average time obtained for any course was significantly different from the authorized time. The logic of the test is as follows: Assume that there is some variability in the actual data which results from a variety of factors other than the proficiency of the aviators. Further assume that these variations are, on the average, about equally positive and negative in their effects over all possible sets of times that might have been examined. Under these assumptions, it is reasonable to expect that, in general, the observed average time will not be exactly equal to the authorized syllabus time, but will differ from the authorized time by some acceptably small amount. If the standard deviation is used as a measure of this variation, it is possible to use the normal probability distribution to determine the likelihood that the difference between the authorized and observed times is within a predetermined small amount. For this analysis, a test value was selected so that in no more than five out of one hundred times, an insignificant difference will be said to be significant.

m. In the first test it was shown that the observed times for each course form distributions that are approximately normal. Also since the authorized time for each course can be expected to be the average time for an aviator to complete the course, a calculated value which is greater than +2.09 or less than -2.09 is said to be statistically significant. Table F gives the calculated values for each course.

TABLE F

t - Scores by Course

INSTRUMENTS		UH-1 VFR		
UH-1FS	Aircraft	Day	Night	Tactics
-0.13	-0.36	-3.23	-7.70	-3.96

All of these values are negative since the average time taken to complete each course was less than the authorized time. Since they are less than -2.09, those values for Day, Night, and Tactics are statistically significant. Since the average times to complete these three classes are only less than the authorized times by approximately twenty-five minutes for Night and forty-five minutes for Tactics, the practical significance of these differences is minimal.

8. COURSE CRITIQUES AND INTERVIEWS:

a. A review of student critiques was conducted to identify trends and common comments and recommendations. A total of one hundred and ten critiques were reviewed. Of these one hundred and ten, sixty-three contained written comments. The critiques available did not correspond to the sample classes. The procedure followed was to review all of the critiques currently available at DTD, CDD. The vast majority of the critique questions were answered in Column A (Agree). The number of Column B (Disagree) and Column C (No Comment) answers were insignificant. An example of the critique format is found at TAB D.

b. The comments on the critiques were arranged under seven common areas. (The frequency of each comment subject area is illustrated in Chart 11. The percentage frequency value for each subject area is also stated below.)

(1) Forty-six percent (46%) of those students submitting written comments made highly complimentary statements concerning the professionalism, dedication, and the positive attitudes of the instructor pilots.

(2) Twenty-one percent (21%) of the critiques contained the comment that more time is needed in the course to address tactics, combat skills, and night vision goggle training.

(3) Eleven percent (11%) of the sample stated that more tactical instrument training is needed. However, sixteen percent (16%), not necessarily inclusive of the prior stated eleven percent, observed that tactical instrument doctrine is unsound and unrealistic.

(4) Eight percent (8%) of those commenting stated that being too frequently assigned a "guest" instructor pilot disrupted the continuity of their refresher training. A "guest" instructor pilot is an instructor other than the originally assigned instructor who flies with a given student for administrative reasons. This term does not include the event of a formal change of flight instructor. The rate of utilization of guest IPs is depicted in Chart 12. The percentage of students in the sample having at least one guest IP amounted to eighty-six percent (86%).

CHART 11

MOST COMMON STUDENT WRITTEN COMMENTS

TOTAL CRITIQUES REVIEWED=110

TOTAL CRITIQUES WITH WRITTEN COMMENTS=63

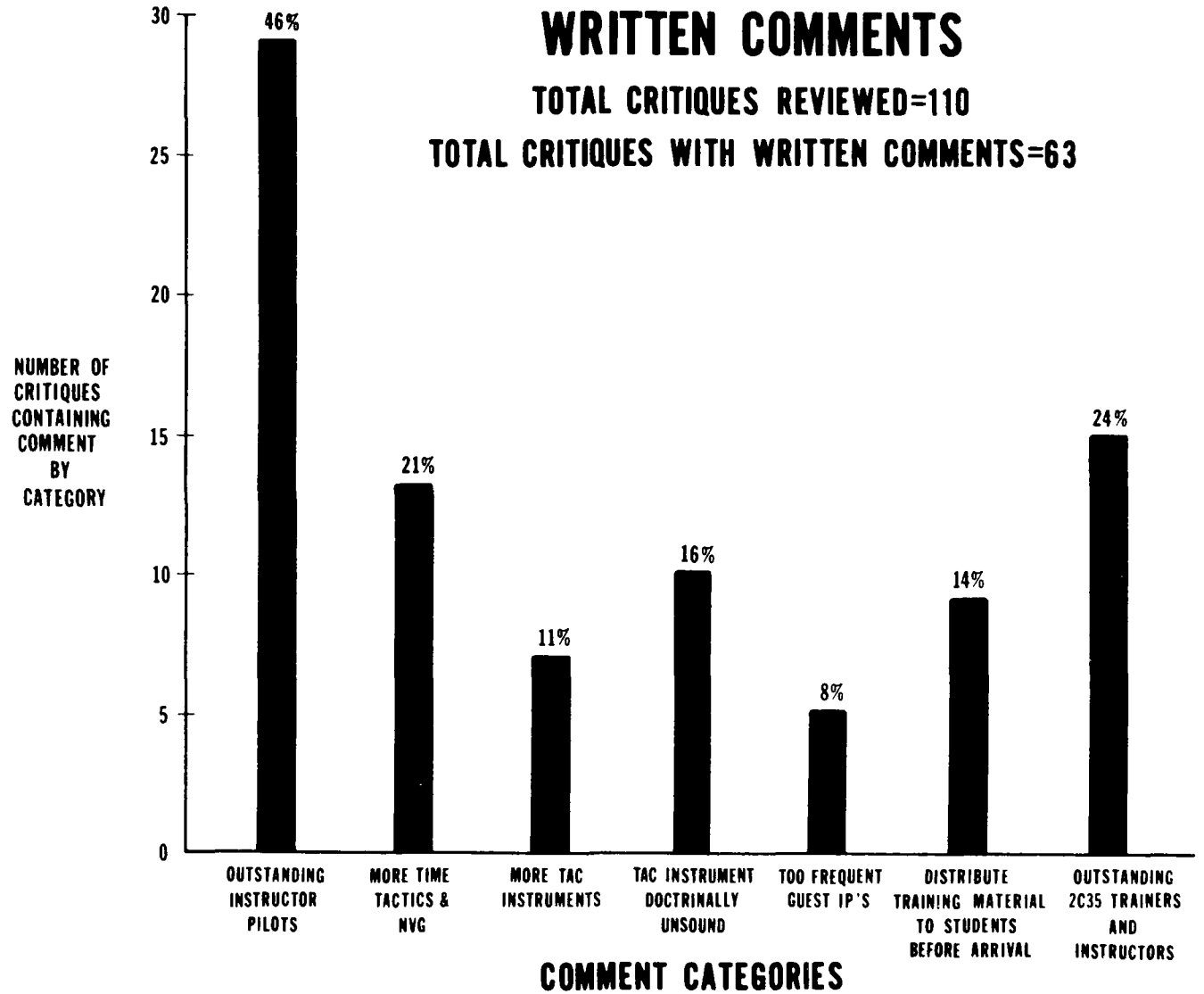
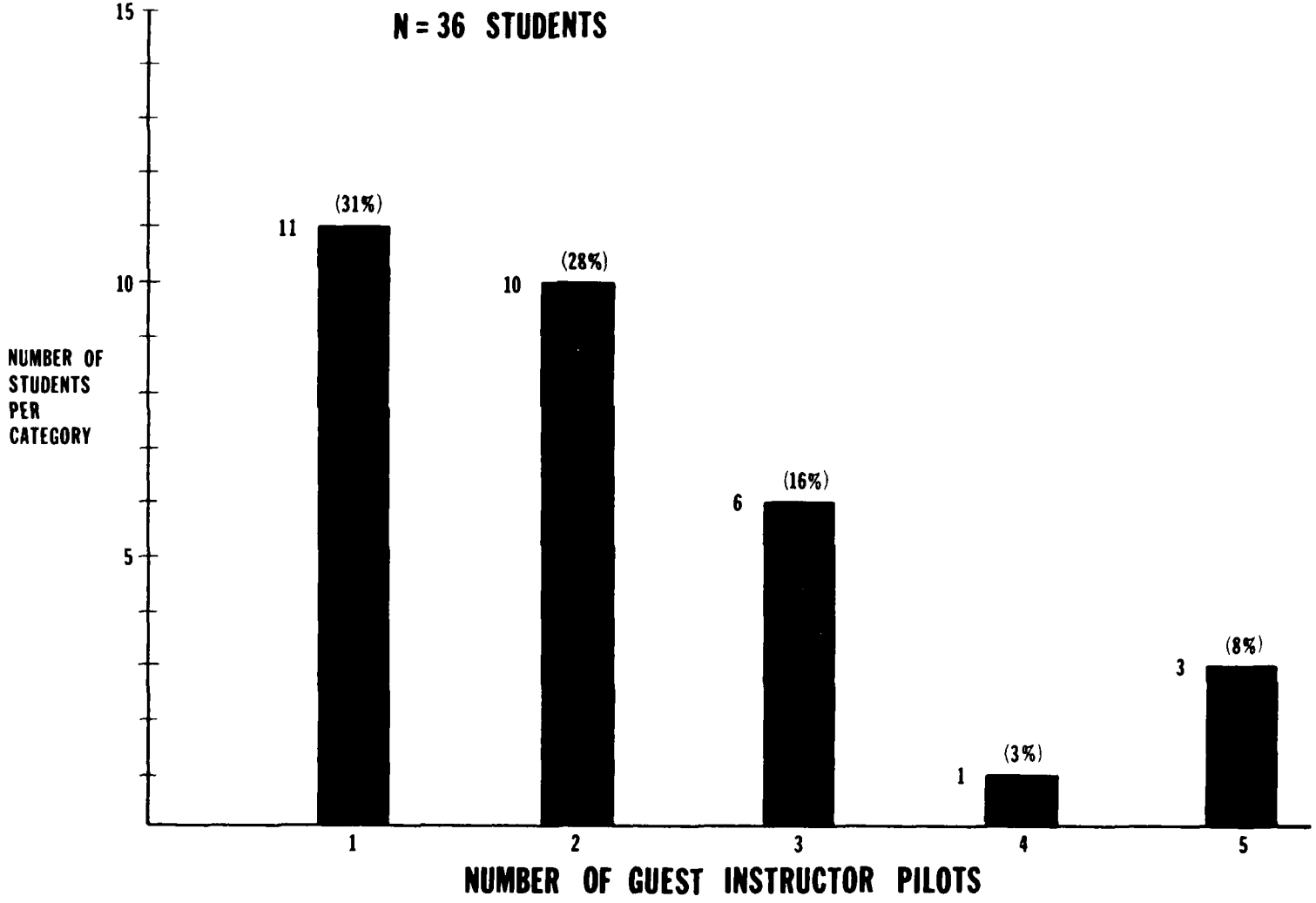


CHART 12

GUEST INSTRUCTOR PILOT RATES IN THE RWARTC

NOTE: % HAVING AT LEAST ONE GUEST IP = 86%
N = 36 STUDENTS



(5) Fourteen percent (14%) of the students commented that a procedure should be established to afford assigned students the opportunity to acquire the RWARTC training materials prior to arriving at Fort Rucker. These individuals generally commented that too much material was covered in too short a time period and that prior access to the training material would have greatly increased the effectiveness of the course of instruction.

(6) Twenty-four percent (24%) of the critique comments referred to the 2C35 Cockpit Procedural Training device as being a highly effective and valuable instructional tool. Many comments lauded the device for enabling them to visualize and comprehend the various aircraft operational and emergency procedures. All of these individuals included statements commending the dedication, effectiveness, and professionalism of the 2C35 instructor.

The remaining ungrouped comments were predominately referenced to personal conflicts and individual problems that do not affect the substance of the RWARTC.

c. Informal interviews were conducted with the Rotary Wing Instrument Branch (RWIB) Commander and four Rotary Wing Aviator Refresher Training Course (RWARTC) instructor pilots.

d. The consensus was that the training is being accomplished to the best degree possible in consideration of present objectives and time and personnel available. The personnel unanimously agreed that additional time would be useful in providing more comprehensive proficiency training.

e. The primary difficulty encountered in the training program is generated by a significant problem in assigned instructor pilots. The problem concerns the management of instructor/student assignments in consideration of the fact that not all instructor pilots are qualified in contact, instrument flight instruction, instrument flight examination, and tactics. A variety of circumstances cause a relatively large numer of guest instructor pilot assignments. The large number of guest IP assignments was noted as a potential problem in both the data assembly process and the review of student critiques. The use of guest IPs was acknowledged as undesirable due to the subsequent disruption of the developing instructor/student rapport. However, due to management/ administrative considerations, the situation is unavoidable.

f. Some contact instructors are not instrument instructors, thereby necessitating an IP change as the student moves into instrument training. Some instrument instructors are grounded and restricted to 2B24 flight simulator training, causing another instructor to be required for training in the actual UH-1H aircraft. Not all instrument instructors are examiners, thereby causing the use of guest IPs as examiners to administer checkrides. Some IPs are not qualified as tactics instructors, thus requiring IP changes for tactics refresher training. This situation is further compounded by the requirement to send currently assigned instructors to the instrument flight instructors and examiners courses as shortfalls in these classes become available. At the time of the

interviews, the RWARTC had thirty-one instructors assigned. Of these, twelve instructors needed qualification as instrument instructors and eight additional instructors needed qualification as instrument examiners. Each of the subject training courses lasts approximately six weeks and shortfall admissions to these classes are comparatively infrequent. Therefore, the time period required to bring the assigned instructors to a high percentage of full qualification will be lengthy. Periodically, fully trained instructors are transferred to other branches, primarily IERW, and are often replaced with instructors without qualifications in all pertinent areas. Permanent change of station transfers are also a factor. These factors in combination create a continual turnover that generates a perpetual instructor training requirement. Therefore, the necessity to utilize frequent guest instructor pilots and instructor pilot changes, although undesirable, is presently unavoidable.

g. Two other problem areas were brought up during the interviews. The first difficulty concerns the increasing aircraft density as the volume of Initial Entry Rotary Wing (IERW) students entering the training program increases. IERW instrument instruction takes precedence over other peripheral courses at the institution for use of close-in instrument enroute structures and training facilities. The additional time required to reach the outlying facilities decreases the amount of effective training time available. Increases in the density of air traffic causes an increase in mean times between approaches. This further reduces the productivity of flight time.

h. An additional problem, also related to increasing IERW course input, is the availability of SFTS training periods. Current scheduling dictates frequent use of the Echo (E) SFTS scheduling period. As course loads increase, there may be a necessity to resort to exclusive use of E period or perhaps even the establishment of a Foxtrot (F) SFTS scheduling period. There is concern by course incumbents that such an event may cause course flow and crew rest problems.

9. COMBAT AVIATOR REFRESHER COURSE:

a. At the time of this evaluation, Course Development Division (CDD), was in the process of preparing a proposed change to the RWARTC that would create a Combat Aviator Refresher Training Course (CARTC). The proposed change will accept, as students, those aviators who have been in a nonflying assignment for at least 18 months or who have been in a fixed wing assignment and receive orders to a rotary wing assignment. The planned training would prepare these aviators to be able to successfully complete a UH-1 flight evaluation, a rotary wing instrument requalification, and refresher/qualification in current tactical operations (Nap of the Earth, Night Hawk, and Night Vision Goggles). In the planning sequence of this evaluation, a request was received to include an informal circulation/review of the proposed CARTC. The inclusion of this topic is not to be considered an evaluation item.

b. The basic purpose of the change is to provide aviators returning to aviation assignments with the same training qualifications as a new graduate of the Initial Entry Rotary Wing Aviators Course. The RWARTC, as it is now, is not sufficiently training commanders and key unit personnel returning from nonflying assignments. They are less educated and qualified in current aviation doctrine and flying skills than the new aviators under their direction and leadership. The proposed change is designed to remedy this undesirable situation that has occurred through changes, over time, in the content of IERW training.

c. The proposed change would divide the course into two phases and lengthen the course from the present four week duration to a total of nine weeks and one day for peacetime. Phase I would cover four weeks and three days and include: the course overview, cockpit procedures, aircraft systems familiarization, aviation life support equipment (ALSE), and visual and instrument flight training. Phase II would also cover four weeks and three days and would include: basic combat skills academic training, night academics, night terrain interpretation, combat skills flight training (NOE/NH/NVG) and the course critique. Further details of the proposed change can be found under TAB B. NOTE: It is to be advised that the proposal, a working document at the time it was acquired, had not been formally staffed. The POI proposal was obtained from CDD and informally circulated among RWARTC incumbents to provide informal feedback to assist in POI refinement. Their responses have been collated and included in the evaluation report to informally assist in the refinement of the proposal and to point out potential problems with the proposal.

d. All parties agreed that having aviators return to rotary wing flight assignments, qualified in the same knowledges and skills as new IERW graduates, is a desirable objective. However, the availability of resources to accomplish the objective and concern for certain specific aspects of the proposal are causing reservations toward implementation. The major problems cited by the respondents, and their comments, are addressed below.

(1) AR 95-1, paragraph 2-1f requires an aviator to receive flight refresher training after being prohibited or excused from flying duties for six months or longer. The regulation does not stipulate whether the training is to be institutional or unit. One interpretation is that the unit is responsible for refresher training for those having between six and eighteen months of nonflying time. A question here is whether or not this factor affects the assignment policy goal for institutionally administering "refresher training" as opposed to IERW policy goals and the difference, if any, in the skills acquired through each and the level of proficiency of both products. A policy decision is needed to determine how all aviators who are not qualified in all current IERW subjects and who have been in nonflying jobs will be brought up to date in aviation doctrine and skills. Guidance is also needed to identify which skills are appropriate for institutional versus unit training.

(2) The proposed course is evolving despite an unclear overall objective. For example, it is not clear as to whether the course is a "refresher" course or a "qualification course". Trying to include both purposes in one course generates numerous potential problems. An aviator may not be able to complete a phase in the allotted time. Individuals who have never held an initial instrument rating are being taught refresher; or is it qualification? The scope of the POI refers to refresher/qualification training in conjunction with tactical operations, yet it is not stated whether or not a tactics checkride is required.

(3) In the POI course summary, several potential conflicts were noted.

(a) Dual flight time allotted to prepare for the contact checkride is 4.5 hours. This amount of time is not sufficient to train the list of tasks to ATM proficiency. It is estimated that at least three more flight training periods would be required to meet the training objectives.

(b) Academic hours devoted to the 2C35 and aircraft systems familiarization number, collectively, 25 hours. To be of any significant value to the flight line training, consideration should be given to this instruction being front-loaded as well as concurrent. It is realized that the other half-day from training already supports three hours of classroom time.

(c) ALSE training (6.0) would be of more value accompanying those hours associated with tactical training.

(d) To support a qualification program of tactics, six "Refresher Hours" might be inadequate. The Rotary Wing Instrument Branch has no practical current experience in conducting a tactics qualification program.

(e) Instrument flight training is predicated totally in the flight simulator. According to AR 95-1, not all personnel can receive an instrument rating in the simulator. This goes back to the course prerequisites. There are still people who hold no prior ratings in instruments. Again, instrument academics should be flowed to align or precede actual flight training. Possible saturation of available SFTS time should be considered. Currently, with the four scheduled classes, there is only a two day overlap in scheduling. The program change will have a significant overlap and may require more cockpits than are now available.

(f) One section of emergency tasks are instructed in the "2C35 only". If these are considered checkride items, how will they be evaluated? Has the possibility of turnbacks been considered? Currently, 2C35 training is conducted at night due to congestion. Concern was expressed that it will be difficult to plan the course flow in a manner that will meet realistic time and course length constraints.

e. The POI commentary predominately centers on two issues. The first concerns a trend toward confusion between the "refresher" and

"qualification" aspects of the course and how those concerned personnel will qualify for the aviation "update" program. The second involves resource and time concerns that are always offered as a major factor in determining the feasibility of expanding training at the institutional level. The intent of the CARTC proposal is, at least partially, supported by consensus of opinion, student course critiques, and feedback from RWARTC graduates in the Aviation Center Training Analysis and Assistance Team (ACTAAT) reports. Again, the intent of this portion of the evaluation is to provide informal feedback to the course developers to point out problem areas and to facilitate refinement of the forthcoming POI change proposal for the RWARTC.

SUMMARY OF FINDINGS

1. The data extracted from the student flight records did not precisely match the printout data obtained from MISO for the subject sample classes 80-19 through 80-28. Thirty-five discrepancies were identified. Of these, five were errors made by the project officer and thirty were made somewhere within the data collection/processing procedure. Nine of the thirty-six sample members had no printout data available.

2. Due to consistently low priority assessment, the Rotary Wing Aviator Refresher Training Course has never been developed or reviewed in accordance with the principles of Instructional Systems Development. A task analysis of the course is presently scheduled to commence in the third quarter of fiscal year 1981.

3. Historical and course development records and materials do not comply with certain requirements of USAAVNC Regulation 350-14 Training Examinations and Standards, USAAVNC Regulation 350-15 Criterion Referenced Examinations, and USAAVNC Pamphlet 310-4 Preparation and Use of Lesson Plans and Instructor Guides. The majority of the discrepancies are attributable to the recent effective date of many requirements and to the fact that ISD principles have yet to be applied to the course. Specific discrepancy items are noted in the body of the report.

4. With the exception of compliance with administrative guidelines, the course material is predominately well coordinated and complimentary. The course objectives are being supported and achieved. The students are predominately pleased with all aspects of the course. The RWARTC is currently fulfilling the purpose and objectives established in the POI in an excellent manner.

5. The relation of the ATM to maneuver standards and flight grading has been identified as a serious problem pervading the entire institution. The problem centers in the method of strict application of the ATM standards to student flight training and the use of the resultant grades as feedback information for institutional management, funding, and evaluation of effectiveness.

6. Statistical analysis of course data indicates a well managed course with acceptable statistical deviation from established objective performance goals. In those cases in which statistically significant deviation was established, an examination of actual time deviations revealed a realistic difference that is inconsequential.

7. A review of course critiques indicated that the vast majority of students feel the course is excellent and of benefit to them. Numerous comments lauded the instructor pilots and 2C35 instructors as being outstanding trainers who were highly professional. The only other major

comment was that more time should be made available for tactics and night vision goggle related training.

8. Problem areas within the course, as perceived by instructors and course management personnel, are insufficient personnel, time, and resources, increasing IERW student input causing less available resources and less access to more convenient training facilities, and the fact that RWARTC graduates (future commanders and instructor pilots) lack certain skills acquired by IERW graduates.

9. The CARTC review was completed as an information/feedback endeavor separate from the primary intent of the evaluation. Personnel associated with the CARTC agree that key unit personnel and more experienced aviators should have the same knowledges and skills of current aviation doctrine as recent IERW graduates. This factor is at least partially supported by student course critiques and feedback from the Aviation Center Training Analysis and Assistance team visits. However, there is concern and confusion concerning whether the course is a "refresher" or a "qualification" course, how these apparently conflicting purposes integrate, and whether institutional facilities and resources can support such a program.

10. RECOMMENDATIONS:

a. Information for the RWARTC obtained from MISO contained a relatively large number of errors when compared to the flight records on file at DOAT. The fact that data was missing for several sample members increases the cause for concern. It is recommended that the data collection and processing procedure be reviewed to determine the cause of the errors in the system, and to determine how widespread the error rate is within the management information system. (MISO proponency)

b. The RWARTC is of such low priority that it has never benefited from the ISD procedure. This suggests that DTD might have insufficient personnel resources to adequately support the current developmental course load. It is recommended that a study be conducted to determine if the most effective utility is being gained from current course development resource distribution, or if more efficient resource utilization alternatives are available. (DTD proponency)

c. It is recommended that all parties to the RWARTC be reminded of the regulatory requirements of USAAVNC Reg 350-14, 350-15, and USAAVNC Pam 350-4 to insure continued progression toward fulfilling documentary requirements. Also, the utility of each documentation requirement should be assessed to insure that only minimum essential management documentation is generated. (DTD and DOTD proponency)

d. The current flight grading system is adequate to fulfill instructor/student feedback needs, but fails to provide meaningful ATM standards proficiency progression information to enable quantitative assessment of

training needed for institutional management. It is recommended that efforts be initiated to modify the flight grading system to satisfy both functions of the system. (DTD proponency)

11. CONCLUSION: The RWARTC is accomplishing the current course objective in an outstanding manner. The personnel associated with the course are highly professional and are motivated to insure that the students achieve maximum benefit. The course could be more comprehensive in scope, and plans are under way to submit such a proposal. The planned ISD review of the course development should serve to fill the lack of regulatory documentation and may provide further evidence for the need for expanding the training as outlined in the CARTC proposal. The RWARTC is a very valuable course for the personnel returning to aviation assignments. The efforts of all personnel involved are commendable.

APPENDIX A

Instructional File

INSTRUCTIONAL FILE

For use of this form, see USAAVNC Pam 310-4. Proponent office is the Directorate [illegible] Developments.

INSTRUCTIONAL FILES		Current Copy	Action Log	Correspondence	Historical Data	Worksheets	Annual Review	Instructional Management Data	Test Outline and Instructions	Test Summary Sheet	Validation Data	Analysis Data	Manuscript	Student Critique	[illegible] Data	Training Aid Data	Student Tests/Ref	Extension Training
POIs	M / W	TD / IE	TD	TD / IE	TD		TD / IE	DT / IE TD	-NA-	TD / IE	TD	-NA-	-NA-		TD/IE	IE	TD
Flt Tng Supplement	M / W	TD / IE		TD / IE	TD		TD / IE		TD / IE		TD		-NA-				
Academic Inst Guide	M / W	TD / IE		TD / IE	TD		TD / IE				TD		-NA-				TD
[illegible]	M / W	TD / IE		TD / IE			TD / IE			-NA-	TD						TD
[illegible]	M / W	IE		TD / IE			TD / IE			-NA-	TD		TD				TD
Programed Texts	M / W	TD		TD / IE			TD / IE			-NA-	TD		-NA-				TD
[illegible] Programs	M / W	TD / IE		TD / IE			TD / IE			-NA-	TD		TD				
Criterion Tests	M / W	TD / IE	TD	TD / IE	TD		TD / IE		TD / IE		TD	IE / TD					
	M / W																	

M = Master Files
W = Working Files

TD = Directorate of Training Development Responsibility
NA = Insert Not Applicable. Do not use.
DT = Directorate of Training

IE = Instructional [illegible] Responsibility
Blank = Insert Optional [illegible] required. May be used if desired.

APPENDIX A

APPENDIX B

Memorandum: Aviator Refresher Training Course

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY AVIATION CENTER AND FORT RUCKER
FORT RUCKER, ALABAMA 36362

ATZQ-TD-CD-IT

6 June 197/

MEMORANDUM FOR: DEPUTY DIRECTOR OF TRAINING DEVELOPMENTS

SUBJECT: Aviator Refresher Training Course

1. Reference is made to the DCG's inquiry and DTD's response. (Incl 1)

2. To prepare additional self-paced materials for the course, it would be nice for our training support writers to be provided with a course design and training objectives. In the past, the training analysis and design work has not been accomplished or partially completed by Institutional Training Branch as well as their assigned task of Phase III, Course Development. This procedure combined with inadequate staffing has resulted in the development of new courses made up of lesson plans from existing courses. The end result being a course which is not specifically designed for the type student attending it. A good example is the Commander's Readiness Course, wherein IERW lesson material has been presented to senior officers.

3. Request if at all possible, that tasking for this project include Training Analysis and Design as a first step to identify the training tasks, course design and objectives prior to Course Development writing the lesson plans to support this instruction.

1 Incl
as

THEO S. EPPERSON
LTC, IN
Chief, Course Development Division

APPENDIX B

APPENDIX C

Memorandum: RWART

ATZQ-T-TM

6 May 78
~~5 April 1978~~

MEMORANDUM FOR: DIRECTOR OF EVALUATION AND STANDARDIZATION

SUBJECT: RWART

1. This memorandum is in reply to your memorandum of 21 March concerning whether or not an instrument rating must be awarded/reissued in RWART for a student to be considered a graduate.

2. The purpose of the refresher course as stated in Course of Instruction (COI) 2C-Y31, dated March 1978 is to provide aviator personnel returning from nonflying assignments, with refresher training to enable successful completion of a UH-1 flight evaluation and rotary wing instrument requalification and familiarization of current tactical operations. Under an informal agreement between Major General Smith and myself the major emphasis in this course is placed on the requalifying of the instrument rating. The awarding or reissuing of a standard instrument rating is a major objective but does not have to be accomplished. If a student does not receive a standard instrument rating at least a majority of the training toward that goal has been done by us and the training load on the new unit has been reduced considerably.

3. Another consideration must be given to the student who has never possessed a standard instrument rating and is attending the course on a waiver of the prerequisites. It would not be fair to consider him a nongraduate of the course if he could not successfully complete a standard instrument checkride when the course was never developed to award an initial issue of an instrument rating.

4. In the future, cases like Major Devlin's will be precluded by a procedure to annotate the grade book when an instrument rating has not been obtained.

J. BURTON
CW4, TA
Director of Training

CF:
DOTT - Ops Br
DOTT - Cairns Div (Signed 11 May 78)

APPENDIX C

APPENDIX D

Course or Phase Training Questionnaire

COURSE OR PHASE OF TRAINING QUESTIONNAIRE

This questionnaire is to be used as input to the internal evaluation program. The purpose of this survey is to determine how students view their flight instruction at the end of each phase or course. Therefore, similar questionnaires will be administered more than one time. The data will be used for statistical purposes only.

INSTRUCTIONS

The questionnaire has a scale at the top of each page:

A - Agree

B - Disagree

C - Unable to Comment

Following the numbers on your questionnaire are the letters A, B, and C. For each item select the best response. For example, if you agree with statement number one, you would circle letter A on the questionnaire. If you are unable to answer a particular question, circle letter C. Do the same for each of the following statements. The scale appears at the top of the page on the questionnaire. The third page of the questionnaire is reserved for your constructive comments about your training. When you have completed the questionnaire, turn it in to your Flight Commander.

	AGREE	DISAGREE	UNABLE TO	COMMENT NOT
1. The outside assignments by my flight instructor helped me to master the flying skills in this phase/course.	A	B		C
2. The skills in this phase of training were difficult to master.	A	B		C
3. The quality of flight instruction in this phase of training was outstanding.	A	B		C
4. The flight instruction was well organized and little time was wasted.	A	B		C
5. My instructor was knowledgeable in all aspects of training.	A	B		C
6. The flight instructors treated me with respect.	A	B		C
7. The end-of-phase evaluations which I received were fair.	A	B		C
8. The maneuvers evaluated were proportionate to the emphasis placed on them by my instructor pilot.	A	B		C
9. I am confident in my ability to function as a pilot in those maneuvers taught in this phase/course.	A	B		C
10. I feel confident that I can perform in a tactical situation.	A	B		C
11. The flight commander's briefings before each flight period helped me to prepare for the day's instruction.	A	B		C
12. The debriefings by my instructor pilot were beneficial toward correcting any flight deficiencies.	A	B		C

13. I was allowed to perform nonstandard maneuvers without my instructor being constantly on the controls. A B C

14. I feel capable of performing under instrument conditions in a tactical environment. A B C

15. I feel confident concerning operating an aircraft at night. A B C

I feel that I needed additional training on the following flight maneuvers for the reasons indicated:

_____

_____

_____

_____

_____

What constructive criticism do you have that could improve this training?

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX E

CARTC POI Proposal (Draft)

COMBAT AVIATOR REFRESHER TRAINING COURSE PROPOSAL

(CARTC)

The CARTC draft proposal, 2C-F31, was a working document during the time period of this evaluation. Since the start of the RWARTC evaluation, the CARTC proposal has undergone several major changes. Due to these changes and the fact that the document was reviewed informally as a service to the course developers, the decision was made not to publish the draft proposal as part of the RWARTC evaluation report.

However, a copy of the draft is on file at the Evaluation Division of DES and should also be available at the Flight Systems Branch of DTD. The Evaluation Division copy is on file with RWARTC evaluation historical research file.

APPENDIX F

USAAVNC Directorates Concurrence and Comment

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGO.

S: 31 August 1981

REFERENCE OR OFFICE SYMBOL	SUBJECT
ATZQ-ES-E	Rotary Wing Aviator Refresher Training Course (RWARTC) Evaluation

TO DCD
DTD
DOTD

FROM DES

DATE 11 AUG 1981
CPT Shivers/mkp/4691

CMT 1

1. The attached draft evaluation report for the RWARTC is submitted for review and comment prior to publication.

2. Request that all comments and observations be submitted, in DA Form 2028 format, by 31 Aug 81.

3. POC, for this action, is CPT Shivers, 4691/6571.

1 Incl
as

for Wm. C. Childress
GEORGE F. NEWTON
Colonel, Infantry
Director

ATZQ-D-CC (11 Aug 81)

TO DES

FROM DCD

DATE 20 Aug 81
Mr. Wicker/egb/3489

CMT 2

1. The draft evaluation report for the RWARTC has been reviewed. The information contained in the report appears to be factual and comprehensive. No changes to the report are recommended.

2. The necessity to circulate this report for review and to publish it as an official document that is subject to distribution outside the Aviation Center is questionable. The report is viewed as a complimentary evaluation to provide informal feedback to the course developers and to facilitate refinement of the forthcoming POI change. Assuming this is the purpose, the exchange of information should be limited to the directorates involved.

1 Incl
nc

CLARK A. BURNETT
Colonel, Armor
Director of Combat Developments

APPENDIX F

DA FORM AUG 80 2496

PREVIOUS EDITIONS WILL BE USED

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

S: 31 August 1981

REFERENCE OR OFFICE SYMBOL	SUBJECT
ATZQ-ES-E	Rotary Wing Aviator Refresher Training Course (RWARTC) Evaluation

TO DCD
DTD
DOTD

FROM DES

DATE 11 AUG 1981

CMT 1

CPT Shivers/mkp/4691

1. The attached draft evaluation report for the RWARTC is submitted for review and comment prior to publication.

2. Request that all comments and observations be submitted, in DA Form 2028 format, by 31 Aug 81.

3. POC, for this action, is CPT Shivers, 4691/6571.

Wm. C. Childress
for GEORGE F. NEWTON
Colonel, Infantry
Director

1 Incl
as

ATZQ-TD (11 Aug 81)

TO DES-E
ATTN: CPT Shivers

FROM DTD
Mr. Newsom

DATE 8 September 1981

CMT 2
Mr. Newsom/dsp/3096

1. DTD appreciates the opportunity to review and comment on the draft evaluation report for RWARTC.

2. The report is thorough and well written. Comments on attached DA Form 2028 are minor. Some identify typographical errors and some are intended to clarify or strengthen points under discussion.

3. This response confirms information provided telephonically and is submitted after the suspense in Comment 1 per telephone conversation between CPT Shivers and Mr. Newsom.

Ernest F. Estes
ERNEST F. ESTES
COL, FA
Director of Training Developments

wd Incl 1
Added 1 Incl
2. DA Form 2028

DA FORM AUG 80 2496

PREVIOUS EDITIONS WILL BE USED

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS

For use of this form, see AR 310-1; the proponent agency is the US Army Adjutant General Center.

Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).

DATE: 3 Sep 81

TO: (Forward to proponent of publication or form) (Include ZIP Code)

Director, DES
ATTN: ATZQ-ES-E (CPT Shivers)
Ft Rucker, AL 36362

FROM: (Activity and location) (Include ZIP Code)

Director, DTD
ATTN: ATZQ-TD (Mr. Newsom)
Ft Rucker, AL 36362

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC SM) AND BLANK FORMS

PUBLICATION FORM NUMBER	DATE	TITLE
DES 81-8	July 1981	Rotary Wing Aviator Refresher Training Course (RWARTC) Evaluation

ITEM NO.	PAGE NO.	PARAGRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)
1	i	1	7			Delete: "1973." Reason: Extraneous entry.
2	3	4b	10			Add to the sentence: ". . .design program but is designed in accordance with Chapter 3, Refresher Training, TC 1-135." Reason: To identify one basis of design.
3	3	4c	7			Delete: "by LTC Epperson." Reason: Not required for identification. The memorandum is included as Tab B and is signed by LTC Epperson.
4	4	5c(1)	5			Para 1-4q should be para 1-4g. Reason: Typographical error (typo).
5	30	8a	3			Cri-tiques should be critiques. Reason: Typo.
6	30	8b(3)	3			Neces-sarily should be necessarily. Reason: Typo.
7	35	9b	9			Overtime should be over time. Reason: Changes meaning.
8	38	3	7			Principals should be principles. Reason: Correct spelling.
9	40-41	12d				Suggest tasking be assigned DTD.

*Reference to line numbers within the paragraph or subparagraph.

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE AUTOVON, PLUS EXTENSION	SIGNATURE
CLARENCE C. NEWSOM DEPUTY for EDUCATION MANAGEMENT Directorate of Tng Developments	AV 558-3096/3320	C Newsom

DA FORM 2028

REPLACES DA FORM 2028 1 DEC 68, WHICH WILL BE USED.

ATZQ-T-TM (11 Aug 81)
SUBJECT: Rotary Wing Aviator Refresher Training Course (RWARTC) Evaluation

TO DES FROM DOTD DATE 1 SEP 1981 CMT 2
CPT Alexander/jc/3603

1. In accordance with Para 2 of CMT 1, DOTD has reviewed the attached Rotary Wing Aviator Course Evaluation.

2. Evaluation comments are provided at Incl 2 and 3 as requested.

3. Concur with the draft report as written.

3 Incl
as

JOSEPH F. RUTKOWSKI
Colonel, Infantry
Director of Training and Doctrine

RWARTC has been reviewed; the following comments provided:

a. Pg 5, para 6. USAAVNC Reg 350-14 has been rewritten and replaced by USAAVNC 350-15. USAAVNC academic examinations are being rewritten to conform to USAAVNC 350-15; a holdup in this area is the requirement to write POI entries IAW TRADOC Reg 350-7 which is new. This should be completed in FY 82. Test outlines are prepared and can be made available to anyone desiring to see them. End-of-course examination procedures are new and complex. Latest guidance indicates they will be used in AIT courses only.

b. Page 39. New exams are not expected to be made within the confines of USAAVNC Reg 350-14, instead 350-15 will be used. The only courses that have undergone the IPISD process at the USAAVNC are the 93H, 93J, and 71P. Documentation for courses that have not undergone the ISD process would not be in a standardized format or may be nonexistent.

FOR THE DIRECTOR:

1 Incl
nc

EDWIN A. WILLIAMS
LTC, Inf
Op Off

1. A comprehensive review of the draft report has been completed as requested. Selected data from Classes 81-1 through 81-40 was extracted from local files, and a comparison was made with the findings documented from Class 80-19 through 80-28 in the report. No significant differences were discovered; in fact, the data extracted from the later group tended to support the data collected by DES from the earlier classes. Student critiques from the later group contained the same narratives praising the professionalism of the IP's and the 2C35 instructors, but did not indicate any negative comments concerning frequent IP changes. Recent class outbriefings have generally indicated that weaker students view IP changes as hindering learning while better students welcome IP changes as offering a broader view of experience from which to learn.

2. The following data of interest was extracted from the later group of classes and is included in this review for information only. Of the 383 military aviators evaluated in the later group, 28 arrived for training with a current instrument rating, while 26 had never possessed a standard ticket (23 did have a tactical instrument rating). The average amount of time away from flying was 3.4 years with extremes running five months and 16 years. A large concentration was at the two-year point, and a lesser concentration was around the ten-year mark. Two important points come from this data. One is that fewer aviators arrive without having possessed an initial instrument rating. Two is that fewer aviators have been away from flying in excess of three years. These two factors also account for the average number of flight training hours dropping slightly to 25.9 hours.

3. It is not a recommendation that the above data be included in the DES report. The supplemental information is annotated here for information purposes only and to show that a comparison of later data served to confirm the findings of the earlier data in the DES report with only few exceptions based on more current data. No significant discrepancies to the original report were noted, either in the findings presented or the format. Separate action to resolve problems identified in paragraph 5 are currently underway.

4. Concur with the draft report as written.

Robert R. Parks

ROBERT R. PARKS
LTC, FA
Cdr, Cairns Division

1 Incl
nc

APPENDIX G

DISTRIBUTION

DISTRIBUTION

Commander
US Army Military Personnel Center
ATTN: DAPC-MSP-S
200 Stovall Street
Alexandria, VA 22332 2

Commander
US Army Training and Doctrine Command
ATTN: ATTNG-EV
Fort Monroe, VA 23651 2

Commandant
US Army Air Defense School
ATTN: Director of Evaluation
Fort Bliss, TX 79916 1

Commandant
US Army Armor School
ATTN: Director of Evaluation
Fort Knox, KY 40121 1

Commandant
US Army Engineer School
ATTN: Director of Evaluation
Fort Belvoir, VA 22060 1

Commandant
US Army Infantry School
ATTN: Director of Evaluation
Fort Benning, GA 31905 1

Commandant
US Army Transportation School
ATTN: Director of Evaluation
Fort Eustis, VA 23604 1

Commandant
US Army Field Artillery School
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Fort Sill, OK 73503 1

Commandant
US Army Intelligence School
ATTN: Director of Evaluation
Fort Huachuca, AZ 85613 1

Commandant
US Army Signal School
ATTN: Director of Evaluation
Fort Gordon, GA 30905 1

Commandant
US Army Institute of Administration
ATTN: Director of Evaluation
Fort Benjamin Harrison, IN 46216 1

Commandant
US Army Military Police School
ATTN: Director of Evaluation
Fort McClellan, AL 36201 1

Commandant
US Army Chaplain School
ATTN: Director of Evaluation
Fort Wadsworth, NY 10305 1

Commandant
US Army Communciations-Electronics School
ATTN: Director of Evaluation
Fort Monmouth, NJ 07703 1

Commandant
US Army Institute for Military Assistance
ATTN: Director of Evaluation
Fort Bragg, NC 28307 1

Commandant
US Army Missile & Munitions School
ATTN: Director of Evaluation
Redstone Arsenal, AL 35809 1

Commandant
US Army Ordnance School
ATTN: Director of Evaluation
Aberdeen Proving Ground, MD 21005 1

Commandant
US Army Quartermaster School
ATTN: Director of Evaluation
Fort Lee, VA 23801 1

Commandant
US Army Sergeants Major Academy
ATTN: Director of Evaluation
Fort Bliss, TX 79918 1

Commandant
US Army Element, School of Music
ATTN: Director of Evaluation
Norfolk, VA 23521 1

Commandant
Defense Information School
ATTN: Director of Evaluation
Fort Benjamin Harrison, IN 46216 1

Commandant
Defense Language Institute
ATTN: Director of Evaluation
Presidio of Monterey, CA 93940 1

Commandant
Defense Language
English Language Center
ATTN: Director of Evaluation
Lackland AFB, TX 78236 1

Commander
US Army Aviation Center
ATTN: ATZQ-DCG
Fort Rucker, AL 36362 1

Commander
US Army Aviation Center
ATTN: ATZQ-ES
Fort Rucker, AL 36362 5

Commander
US Army Aviation Center
ATTN: ATZQ-T
Fort Rucker, AL 36362 5

Commander
US Army Aviation Center
ATTN: ATZQ-TD
Fort Rucker, AL 36362 5

END

FILMED

DTIC