

NEED FOR REVIEW OF THE ARMY'S
INSTRUMENT TRAINING PROGRAM

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SUBJECT: Army Instrument Training Program

1. PROBLEM: To determine if there is a need for review of the Army's instrument training program.

2. ASSUMPTIONS:

a. There will be no significant changes made to the Army's Instrument Training Program in the near future.

b. Successful operation of Instrument Flight Rules capable aircraft entering the Army's inventory during the period of concern will require the pilot to maintain a level of proficiency at least equal to that required to safely fly Instrument Flight Rules (IFR) capable aircraft currently in the inventory.

c. United States Army and Federal Aviation Agency regulations pertaining to instrument flight will remain sufficiently demanding as to make the maintenance of a high level of proficiency a necessary prerequisite to functioning successfully in the IFR environment.

3. FACTS BEARING ON THE PROBLEM:

a. Army Regulation 95-63 states the objective of the Army's Instrument Training Program as being to provide each Army aviator with that training necessary for him to attain and maintain the degree of proficiency required for initial issue and periodic renewal of an instrument qualification. (2:2-1) (Annex A)

b. Army Regulation 95-63 charges the individual aviator with making every feasible effort to maintain a high degree of proficiency. Final determination of whether or not an applicant is qualified for an instrument qualification must be based on the examiner's judgement that the applicant has the degree of skill required to safely pilot an aircraft under actual instrument conditions. (2:2-5) (Annex A)

c. As outlined in Army Regulation 95-1, the Army's combat readiness flying program requires Army aviators who must meet flight minimums to log a minimum of 20 hours instrument flight time annually, of which 10 hours may be logged in a Synthetic Flight Training System, and/or 10 hours of copilot time during actual instrument conditions may be logged toward minimums. (1:2-3) (Annex B)

d. A recent Army sponsored study found that activities involving aviators who flew only the minimum

3. FACTS BEARING ON THE PROBLEM (Cont'd):

d. required number of instrument flight hours during a one-year period, demonstrated a less than acceptable level of proficiency at the end of that period (7:vii) (Annex C)

4. DISCUSSION:

a. Current reductions in budget and fuel allocations dictate that units maintain high degrees of instrument flying proficiency while faced with greatly reduced flying hour programs.

b. While there seems to ^{be} a general agreement that the recent flight school graduate is an adequately proficient instrument pilot, such is not always the case with pilots who are not recent graduates, especially those who are in non-flying jobs and those who fly only enough to meet annual minimums.

c. Recent research has confirmed the theory held by many Army aviators, myself included, that while the current combat readiness flying program enables many aviators to maintain some overall proficiency, it is questionable whether it insures the maintenance of a sufficiently high degree of instrument proficiency. It seems likely that a program requiring fewer total hours of flying, but requiring time logged to be flown in mission type aircraft and stressing instrument proficiency training, might be much more cost-effective and result in the retention of a higher degree of both contact and instrument proficiency. (Annex D)

5. CONCLUSION:

a. The current Army Instrument Training Program is adequate as far as initially qualifying aviators as instrument pilots, but inadequate insofar as providing for the maintenance of instrument flying proficiency by the non-flying aviator or the one who flies only the required minimum number of flight hours annually. It should, therefore, be reviewed with the intent of finding ways to alleviate this inadequacy.

b. To the maximum feasible extent, Army aviation units should be encouraged to accomplish combat readiness flying in mission type aircraft, stressing instrument proficiency.

6. ACTION RECOMMENDED:

a. That paragraph 5b be accepted.

b. That this study be forwarded thru channels as a reference to be used in future reviews of the Army's Instrument Training Program.


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ANNEXES: A - AR 95-63
B - AR 95-1
C - Excerpt of HUMRRO TR 73-32
D - Detailed Discussion
E - Bibliography

CONCURRENCES: (Omitted)
NONCONCURRENCES: (Omitted)
CONSIDERATION OF NONCONCURRENCES: (Omitted)
ANNEXES ADDED: (Omitted)
ACTION BY APPROVING AUTHORITY:

DATE:

Approved (disapproved), including (excluding) exceptions.

Signature

ANNEX A - AR 95-63

1. "No absolute criteria should be established for determining an applicant's proficiency. The instrument examiner will review air speeds and power settings for the conditions of climb, descent, slow cruise, and approach. He will insure that the applicant is familiar with all communications and navigation equipment on board the aircraft. The applicant should understand thoroughly the procedures involved, realize when he has made a mistake, and take proper corrective action.

2. "Final determination of whether or not the applicant is qualified for an instrument qualification must be based on the examiner's judgement that the applicant has the degree of skill required to safely pilot an aircraft under actual instrument conditions. Suggested standard for determining qualification is as follows:

(1). Is his instrument proficiency satisfactory to maneuver the aircraft in accordance with the rules of instrument flight?

(2). Does he possess a clear understanding of the rules of instrument flight?

(3). Does he demonstrate sound judgement during flight?

(4). Is his technique adequate to meet the standards prescribed in Section II, Chapter 3, AR 95-1 ?

3. "An objective of the Army Aviation Instrument Training Program is to have each aviator attain and maintain an instrument qualification. Commanders are responsible for insuring that ample time, equipment, and facilities are made available to permit aviators to attain and maintain the degree of instrument flight proficiency required for issue and retention of an instrument qualification."

ANNEX B - AR 95-1

1. "Instrument flying.

Ten hours of flight simulator/synthetic flight trainer time may be logged toward the accomplishment of the 20-hour annual instrument requirement. A maximum of 10 hours will be logged in a Synthetic Flight Training System (SFTS-2B24) by each aviator who is required to perform combat readiness flying and is assigned to installations where SFTS trainers are available. Modification of this requirement may be made consistent SFTS availability and aviator density. In no case will the annual instrument examination be administered in a flight simulator/synthetic flight trainer. Ten hours of copilot time during actual instrument conditions may be logged toward the accomplishment of the 20-hour annual instrument requirements. A maximum of 10 hours of flight simulator/ synthetic flight trainer time may be substituted for the annual combat readiness flying total time requirement of 80 hours.

2. "To obtain maximum training benefits from available resources, commanders should use the following guidance:

a. Insure that aviators obtain the maximum training benefits from each flight; combat readiness flying will not be performed which fails to offer significant opportunity to maintain required flying skills.

b. When possible, combine combat readiness flying and service missions.

c. "Use aviators assigned to nonaviation positions, if otherwise permitted to fly, to the maximum for the performance of service flights.

3. "Each aviation unit commander will establish a unit training program appropriate to its mission and aircraft to insure the combat readiness of assigned aviators and the maintenance of basic flying skills of those aviators attached for proficiency flying."

ANNEX C - HUMRRO TR 73-32, Retention of Flying Skills
and Refresher Training Requirements: Effects
of Nonflying and Proficiency Flying

1. "The objective of this research is to obtain information on the rates of loss of various types of flying skills by Army aviators.
2. "A survey of pilots who had experienced extended periods of flight excusal or proficiency flying status was used to obtain data to answer the questions raised. The survey questionnaire obtained comprehensive data on the flying experience of each responding aviator.
3. "For Army aviators who had standard instrument ratings, data obtained indicated that:
 - a. In comparison with nonflying periods, flying minimums resulted in a slightly lower rate of loss of flying skill for any given length of episode. Minimums reduced loss of visual flying rules (VFR) skill by 20%, and instrument flying rules (IFR) loss by 10%.
 - b. Practically all (90%) of the loss in flying ability that occurs over extended periods of time occurs within 12 months.
4. "On IFR flying skills, about one-half of the aviators (50% of those not flying, 40% of those flying minimums) dropped below the minimum acceptable level of ability after 12 months-- and flying minimums had only a small effect on this proportion.
5. "The data obtained indicate that a program of flying excusal followed by refresher training should be considerably more economical and effective in providing proficient aviators than would a program of periodic proficiency flying as has been performed in the past. If a program of periodic flying is used, the data indicate that a period of not more than six months should exist between periods of training in IFR skills that would bring aviators back up to fully competent levels of activity.
6. "Data obtained also indicate that IFR flying skills should receive primary emphasis in proficiency or refresher training, and that such training should be highly structured to assure that maximum training value is realized.
7. "Results of the study also suggest that IFR training in a specific aircraft configuration may alone be sufficient to maintain an acceptable (but not highly proficient) level of overall flying ability in that aircraft. If so, it is probable that a synthetic training device in the configuration of that aircraft could also be used to maintain this acceptable level of flying ability."

ANNEX C - HUMRRO TR 73-32 (Cont"d)

8. "There are a variety of indications that improvement in the quality of proficiency flying could improve IFR ability substantially. Less emphasis on 'boring holes in the sky', which has been typical of much of the past proficiency flying, and more practice in difficult IFR procedures could improve the situation significantly. Effective use of good synthetic training devices could also alter the situation.
9. "The shape of the retention curve developed as a result of the research clearly dictates that the most economical proficiency flying policy for periods in excess of six months would be one that eliminated proficiency flying entirely, followed by refresher training just prior to resumption of operational flying status.
10. "If a set of aircraft-specific, low cost training devices were developed, along with a training program for their use by experienced pilots who need to maintain or improve their flying ability, then a cost-effective proficiency flying program that would significantly improve overall flying proficiency and reduce refresher training requirements might be possible.
11. "Considering probable transfer of instrument training to contact skills, most proficiency or refresher training should be devoted to instrument flying skills. This, in turn, makes synthetic instrument training devices prime contenders for the most cost-effective proficiency or refresher training technique.
12. "The slight increase in refresher training time required when simple light aircraft were used in proficiency flying indicated that the compatibility of aircraft configuration used for proficiency and refresher training is a factor that merits close consideration in the management of proficiency training. It needs to be recognized that flying different aircraft for proficiency than those used for refresher training may actually interfere with certain flying skills (where to look and reach in particular) due to differences in crew station configuration or procedures. Compatibility of configuration and procedures seems to be a critical factor in proficiency training of experienced pilots that has not received sufficient recognition."

ANNEX D - Detailed Discussion

1. The maintenance of instrument flying proficiency has always proven one of the greatest challenges to the individual aviator and to aviation units. Army aviation history is permeated with far too many accidents which are vivid examples of the fact that this challenge has not yet been met successfully. With the current emphasis on reductions in unit flying hour programs, it seems safe to say that unless budgetary and fuel availability considerations undergo some unexpected changes, units will be forced to attain and maintain a higher level of instrument flying proficiency while actually flying fewer hours. This predicament dictates that we critically review our current program.

2. There seems to be general agreement that the Army's program of instruction by which Army aviators are initially qualified is adequate. While certainly not qualified for "Old Pro" status, the new Army instrument aviator is considered one of the finest in the world. Once qualified, however, he may be assigned to a nonflying job, or to one wherein he flies only enough to meet annual minimums. Either of these situations can pose very real problems for him as far as maintaining instrument flying proficiency,

3. The most controversial situation seems to be the one wherein he is in a nonflying job but is required to meet annual minimums. In this case he generally flies 20 hours of instrument time per year, 10 of which may be in a simulator. He generally flies one aircraft for contact proficiency, then a simulator, probably of a totally different configuration of cock-pit, and then flies a different aircraft for instrument proficiency and standard instrument ticket renewal check-ride. This switch from configuration to configuration actually has an adverse effect on the maintenance of proficiency. Having worked for approximately a year as an instrument instructor while assigned to my former unit, I feel qualified to attest to the inadequacy of this part of the current system. I have seen far too many combat readiness flying aviators who had to learn to fly the aircraft all over before I could give them instrument refresher training. This I believe was the direct result of having flown other aircraft in meeting contact flying minimums.

4. In several instances I was lucky enough to get students who had not been required to meet minimums while in nonflying jobs, and consequently, had not flown at all for extended periods; these individuals generally had more flying experience than the average aviator, thus it would be expected that their proficiency level might be somewhat higher, but I found it to be significantly so, especially in the area of familiarity with configuration of the aircraft. The variance in familiarity with configuration was far greater than the variance in overall instrument flying ability between the aviator who had done no flying over a given period and the one who had flown several types of aircraft and the flight simulator.

ANNEX D - Detailed Discussion (Cont'd)

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This experience led me to conclude that a feasible solution to the problem of maintaining and increasing the adequacy of the instrument flying program would be to reduce the overall number of hours the combat readiness flying aviator is required to fly, but require him to fly in mission type aircraft when he does fly.

5. In addition, I believe that a more critical look needs be taken at the variety of configurations of flight simulators now being used to provide proficiency training for Army aviators, especially helicopter pilots. This program, if carefully developed, should alleviate most of the problems inherent in switching from aircraft configuration to configuration, reduce the overall cost of the combat readiness flying program eventually, and enable the aviator to derive some valuable instrument training from every flight, even if flown in the simulator.

ANNEX E - Bibliography

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