PROBLEMS IN AIR TRAFFIC MANAGEMENT: III. IMPLICATIONS OF AGE FOR TRAINING AND JOB PERFORMANCE OF AIR TRAFFIC CONTROLLERS

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Abstract

The relationships between chronological age upon entry into ATC training and school and job performance were examined in five samples of air traffic controller trainees. The data confirm conclusively the existence of an inverse relationship such that the older trainees have significantly less chance than their younger classmates of either completing training or being considered a satisfactory controller. Based upon the results of this investigation it is recommended that a maximum age limit be established for entry into ATC training.

The relationship between the age of air traffic controller trainees, ATC school success and, subsequently, job performance has been a topic of concern to FAA officials for some years. As part of two more extensive investigations (2, 3) of air traffic controllers, the Civil Aeromedical Research Institute has recently completed a study of the relationships between training-entry-age and school and job performance. The present paper describes the results of these investigations with respect to age.

PROCEDURE

Samples

Five samples of ATC trainees were utilized – three for investigation of job performance and two for school performance. Since separate training programs are conducted at the FAA Aeronautical Center at Oklahoma City for trainees assigned to Air Route Traffic Control Centers (Enroute) and for those assigned to Terminal areas, and because of apparent and significant differences in the input age distributions to the two courses, these two types of trainees were treated separately where appropriate.

Sample 1: Trainees entering the ATC Enroute training course at the Aeronautical Center in August, 1960, through April, 1961, constitute the first sample. Of the 361 students in 16 classes, 281 successfully completed the training course and 80 failed. The few men who withdrew for personal reasons, such as health or illness in their families, were excluded from all aspects of the study.

Sample 2: This sample overlaps Sample 1. It is composed of all Enroute trainees of the August, 1960, through January, 1961 classes. Of the 217 trainees in these 10 classes, 172 successfully completed the training course and 45 failed. In September, 1961, job performance information and other criterion data, to be described subsequently, were requested and received from the FAA field facilities to which course graduates had been assigned. Data were obtained for all 164 graduates.

Sample 3: Trainees entering the ATC Terminal training course at the Aeronautical Center in September, 1960, through April, 1961, form the third sample. Of 157 students in 13 classes, 146 successfully completed the training course and 11 failed. The few men who withdrew for personal reasons were excluded from all analyses.

Sample 4: As Sample 2 overlaps Sample 1, this fourth sample overlaps Sample 3. It is composed of all Terminal course trainees in the September, 1960, through January, 1961, classes. Of 102 students in 7 classes, 96 graduated and 6 failed. Followup information was obtained for this sample at the same time as it was collected for Sample 2.

Sample 5: In 1956, representatives of the Aeronautical Center of the Civil Aeronautics Administration (now the Federal Aviation Agency Aeronautical Center) contacted the Personnel Laboratory of the United States Air Force to discuss procedures for the selection of air traffic management personnel. A joint research project was arranged and experimental testing of 197 ATC trainees was begun later in the year at the Aeronautical Center in Oklahoma City. The results of an earlier analysis of the data collected in this project have been reported by Brokaw (1).

In December, 1960, Regional Offices of the FAA were able to supply current FAA facility addresses, or other information, on all but 10 of the original 197 subjects. Of the remaining 187 subjects, 16 had failed the training course and left the FAA early in 1957, 15 who had passed the training course had left the FAA, 2 were deceased, replies were not received for 2, and 3 were with the FAA but no other information was available. This left 149 subjects (including 4 training course failures still with the FAA) for whom relatively complete criterion data were obtained.

Criterion Data

For Samples 1 and 3, information contained in the ATC School's Evaluation of Performance Form was used to compute a combined Academic plus Laboratory Grade Average and to determine each student's Pass-Fail status. More complete descriptions of these criterion measures are contained in Table 1.

For the individuals in Samples 2, 4, and 5, a letter describing the research project and data collection forms were sent to the Chiefs of the facilities to which the trainees had been assigned upon completion of their training course. For each of these subjects at his facility, the Chief was asked to supply promotional and job information, medical history information, and an indication of any disciplinary actions taken as a result of violations of air traffic rules or procedures. In addition, each Chief was asked to have four supervisors rate each subject using a job performance evaluation form. The form contained items related to job performance, ability as a controller, judgment, and personality characteristics.

Inasmuch as Samples 2 and 4 represented a type of subject group distinctly different from the individuals in Sample 5, the letters sent to each facility Chief and the data collection forms were somewhat different in the two instances. Appendix A contains the materials sent to each facility in September, 1961, for the subjects in Samples 2 and 4. Appendix B contains similar materials sent to each facility in December, 1960, for subjects in Sample 5.

Information received for the three followup samples was used to synthesize two global criterion measures: (a) Average supervisor rating; and, (b) satisfactory vs. unsatisfactory (marginal) controller. The definitions of these criteria for Samples 2 and 4 differ somewhat from their definitions for Sample 5. Descriptions of the criteria are contained in Table 1.

Ages of the subjects upon entry into training were determined from the ATC school records and plotted against the criterion measures for the various samples. To illustrate relationships, cumulative percentage curves of age, starting with the oldest trainees, were computed for various criterion subgroups, or bar graphs showing the criterion subgroup composition of various age ranges were developed.

The significance of differences between cumulative percentage curves for subgroups was determined either by fractionating the subgroups at the age closest to the median age for combined subgroups and computing a chi-square for the resulting two-by-two table, or by dichotomizing the combined subgroups at an age which divided the distribution into 75 and 25 per cent segments and computing a chi-square for this two-by-two table.

In a few instances product-moment correlation coefficients were computed to indicate the relationship between age and various criterion measures; and where appropriate, t-tests were computed to determine the significance of differences between subgroup means.

TABLE 1

Description of Criterion Variables

Applicable to Sample	*Description*
1 - 5	**Pass vs. Fail:** Students successfully completing the ATC enroute training course were considered as Pass, those who did not successfully complete the course were considered as Fail. Students whose withdrawal from the course was necessitated by illness, death in the family, and so on, have been deleted from the sample.
1 - 4	**Academic-Laboratory Grade Average:** This was the mean (or average) of two separate averages for each student – one based on the total number of academic examination grades, and the other based on all laboratory performance grades. Fractional values were eliminated by rounding all scores. Incomplete test records of students eliminated or withdrawn from the course were treated in a similar manner, but the averages were usually based on fewer numbers of grades.
2 and 4	**Average Supervisor Rating:** A numerical transformation of ratings collected from 1 to 4 supervisors on a form containing 15 items concerning work habits, ability, on-the-job training performance, judgment and reasoning, emotional stability, and relationships with others. (See Appendix A).
5	**Average Supervisor Rating:** A numerical transformation of ratings collected from 1 to 4 supervisors of each individual on a form containing 14 items concerning work habits, ability, judgment and reasoning, emotional stability, and relationships with others. (See Appendix B). Using individuals with 2 or more forms, a corrected split-half reliability of .75 was obtained for the derived scores.
2 and 4	**Satisfactory vs. Unsatisfactory (Marginal) Controller:** A satisfactory controller is one who is still with the FAA and not in any of the following categories of unsatisfactory controllers. **Unsafe:** An individual was placed in this criterion category if one, or more, of his supervisors answered, "Yes" to the question, "Do the controller activities of this individual ever have an undesirable effect on air traffic safety?" **Unwanted:** An individual was placed in this criterion category if he was not in the **Unsafe** category and if one, or more, of his supervisors answered "No" to the question, "If you were a Facility Chief, would you want this individual on your staff as an active controller?" **Separated:** A graduate of the ATC training program who is no longer with the FAA. **Low 25% of Supervisor Ratings:** An individual in the lowest 25 per cent of the distribution of Average Supervisor Ratings of those still with the FAA.
5	**Satisfactory vs. Marginal (Unsatisfactory) Controller:** A satisfactory controller is one who is still with the FAA and not in any of the following categories of marginal controllers: **Violator:** Anyone who was reported by a Facility Chief as having been cited for violations of air traffic rules or procedures. (This could not be used as a criterion for Samples 2 and 4 since individuals in those samples had not had sufficient time on the job to commit violations). **Low 25% of Supervisor Ratings:** An individual in the lowest 25 per cent of the distribution of Average Supervisor Ratings of those still with the FAA.

TABLE 2

Frequency Distribution by Age Groups of Training and Job Performance Classifications of Personnel in Various Samples

Age Group	Enroute							Terminal							1956 Follow-up: Sample 5		
	Training: Sample 1		*Follow-up: Sample 2*					*Training: Sample 3*		*Follow-up: Sample 4*					*Pass Ss*		
			Pass Ss Who are:*				Fail in			Pass Ss Who are:*				Fail in	Who are:		Fail in
	Pass	Fail	Sat.	Sep.	Unsafe	Unwant.	Training	Pass	Fail	Sat.	Sep.	Unsafe	Unwant.	Training	Sat.	Mar.	Training
21-26	170	27	63	10	14	9	13	90	3	37	5	12	6	2	73	33	8
27-32	70	17	14	3	12	9	8	40	3	14	2	7	1		13	15	4
33-38	19	10	7	1	3	1	5	11	3	1	2	3	1	3	5	5	4
39-45	22	26	3	6	3	6	19	5	2	3				1		1	4
Totals	281	80	87	20	32	25	45	146	11	55	9	22	8	6	91	54	20

*Eight trainees in Follow-up Sample 2 (all in the 21-26 Age Group) and two trainees in Follow-up Sample 4 (all in the 21-26 Age Group) who passed the training course are in the bottom 25 per cent of the Supervisors' Ratings but are not considered as Unsafe or Unwanted.

RESULTS

Frequency polygons of the training-entry ages are plotted in Figure 1 for all the Enroute trainees in Sample 1 and all Terminal trainees in Sample 3. Although both curves reflect the highly skewed nature of the distribution of entry ages, there is a distinct bimodality apparent in the curve for the Enroute trainees. This latter curve has a secondary peak at the 40 year point and differs significantly ($P < .05$) from the age curve for the terminal trainees.

Significance of the difference between these curves for the Enroute and Terminal trainees was determined by computing a chi-square for the two-by-four contingency table comparing the frequencies in the age groups 21-26, 27-32, 33-38, and 39-45. The basic data for this comparison are contained in Table 2 together with the frequencies of subjects in various age groups and criterion categories for all samples of the study.

The reason for the difference between age distributions of the two types of trainees is not immediately apparent. It does, however, emphasize the fact that in many types of statistical analyses the Enroute and Terminal groups should be treated separately since they may represent two distinctly different populations.

Cumulative percentage curves of age for students failing the training course and for those who passed with academic plus laboratory grades in the upper and lower parts of the distribution for pass cases only are presented in Figure 2 for Enroute students of Sample 1 and in Figure 3 for Terminal students of Sample 3. The curves show the percentage of each of the subgroups of trainees at, or older, than any particular age.

To test the significance of the differences between the curves for the pass subjects in Figure 2, the data were dichotomized at an age which

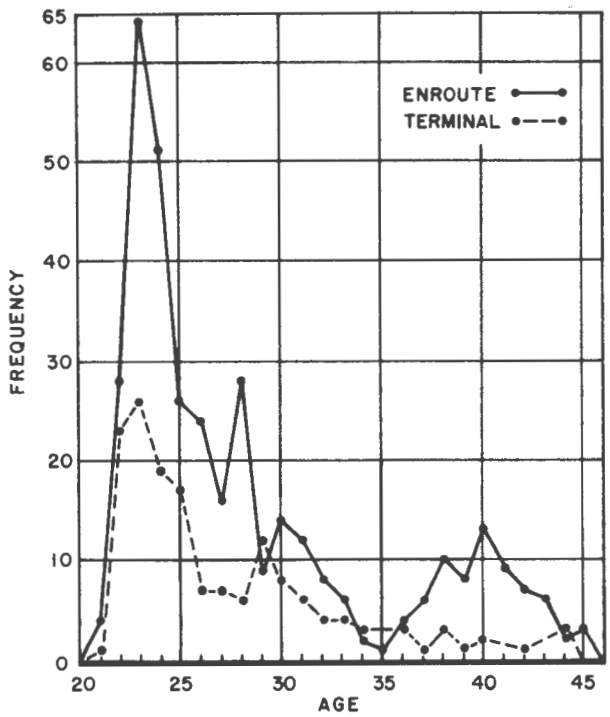

Figure 1 — Age distribution of trainees entering 16 enroute (N = 361) and 13 terminal (N = 157) training course classes in 1960-61

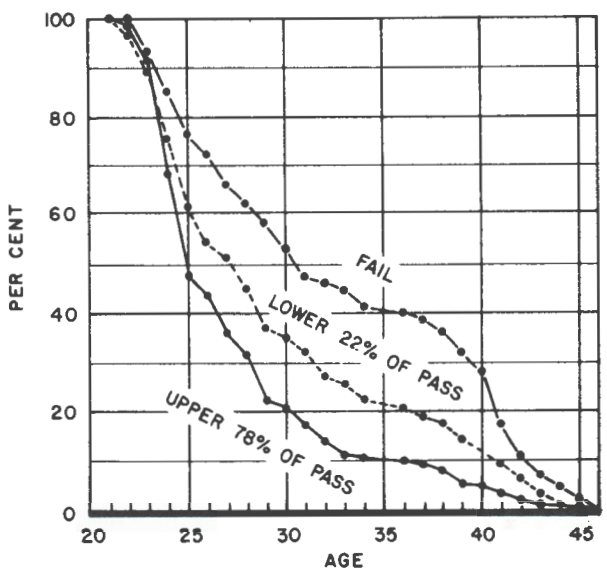

Figure 2 — Sixteen (1960-61) enroute training course classes — Cumulative per cent curves of age for students **failing** (N = 80) the training course and for those who passed with academic + laboratory grades in the **lower 22%** (N = 62) or the **upper 78%** (N = 219) of distribution representing pass cases only

divided the distributions into approximate 75 and 25 per cent segments and a chi-square computed for the two-by-two table. The difference was significant at less than the .05 level. A similar chi-square test of the difference between the curves for pass subjects in Figure 3 was also significant at less than the .05 level.

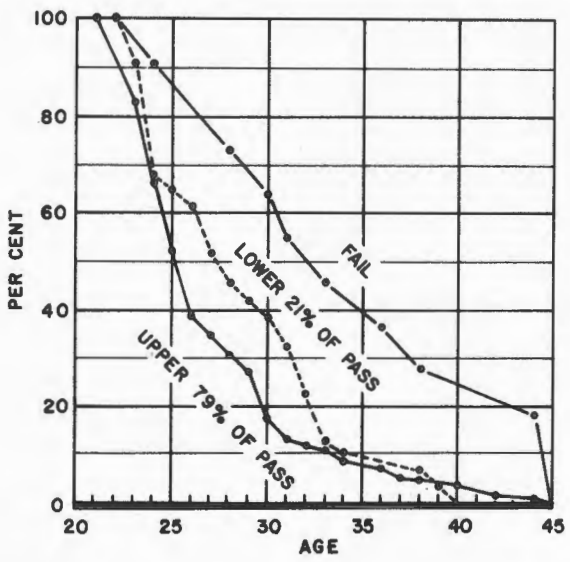

Figure 3 — Thirteen (1960-61) terminal training course Classes — Cumulative per cent curves of age for students who **failed** (N = 11) the training and for those who passed with academic + laboratory grades in the **lower 21%** (N = 31) or the **upper 79%** (N = 115) of the distribution representing pass cases only

The significance of the differences between the curves for failure were tested in the same way against the pooled data for the pass subjects in each sample separately. For Sample 1, a median age cut was used, and for Sample 2, a 75-25 per cent cut. Again the differences were found to be significant at less than the .05 level in both samples.

Correlation coefficients were also computed to give an index of the relationship between age and success or failure in the course and between age and the academic plus laboratory grades for pass subjects only. Because the present study was abstracted from more extensive investigations, the correlation coefficients were not available for Sample 1 considered in its entirety. For this sample, correlations were computed for two subgroups — one composed of five of the eight 1960 classes, the other for all eight 1961 classes. For Sample 3, correlations were available for the entire sample. The coefficients of correlation are reported in Table 3. In all but one instance, the correlations were significant at less than the .01 level and indicate that the older trainees are more likely to fail the training course or to have lower academic plus laboratory grades than their younger classmates.

The one coefficient which was not statistically significant was for the pass subjects of Sample 3. This attenuation of the relationship between age and the academic plus laboratory grades may be due to several factors. For example, when compared with Sample 1, Sample 3 has a relatively smaller number of older trainees; there may be differences in the grading practices of the two courses; or there may be aptitude differences between the students entering the two types of training. The latter possibility does not seem very likely, however, since scores on the aptitude test battery described by Cobb (2) do not reveal any major differences between Enroute and Terminal trainees. In any event, the negative relationship between age and training school performance is well substantiated. Its attenuation in the case of the Terminal students requires further study.

Turning now to the follow-up samples, cumulative percentage curves of age for satisfactory and unsatisfactory (marginal) plus separated controllers* are presented in Figure 4 for the Enroute subjects of Sample 2 and in Figure 5 for the Terminal subjects of Sample 4. For the purposes of this study, marginal controllers in Samples 2 and 4 have been defined as graduates of the training course who are

*It is not really appropriate to refer to subjects in Samples 2 and 4 as controllers since most of them were not fully qualified and were still undergoing on-the-job training. However, for ease of reference they have been called controllers.

TABLE 3

Correlations of Age with Academic plus Laboratory Grade Average and Pass vs. Fail Status of Subjects in Samples 1 and 3

	Sample 1								Sample 3			
	Pass Only				*All Subjects*							
	1960 Group		*1961 Group*		*1960 Group*		*1961 Group*		*Pass Only*		*All Subjects*	
Criterion	r[1]	N	r	N	r	N	r	N	r	N	r	N
Academic + Lab Grade	−35°°	95	22°°	145	−38°°	126	−31°°	183	−09	146	−24°°	158[a]
Pass vs. Fail [†]					−26°°	124	−24°°	183			−28°°	157

[1] Decimal points have been omitted.

°° Significant at less than the .01 level.

[a] One subject inadvertently included in this correlation should have been excluded because, for personal reasons, he did not graduate with his class.

[†] Point-biserial correlations.

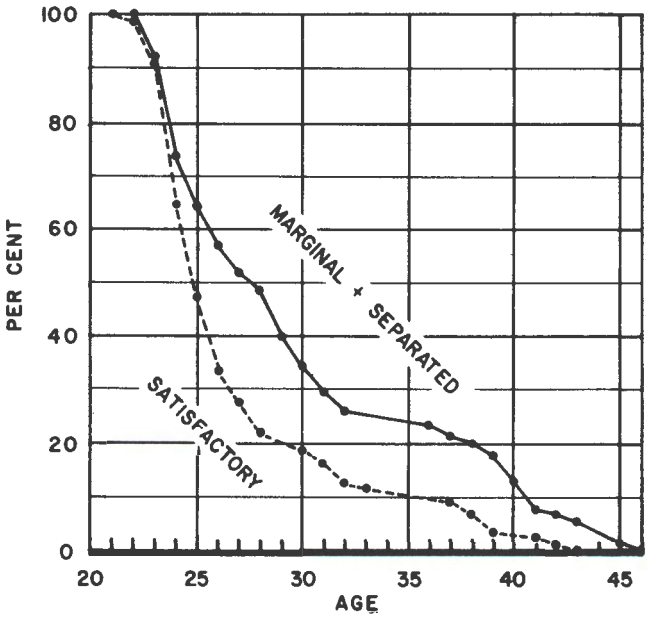

Figure 4 – Follow-up of ten (1960-61) enroute training classes – Cumulative per cent curves of age for satisfactory (N = 87) and marginal (N = 65) plus separated (N=20) controllers

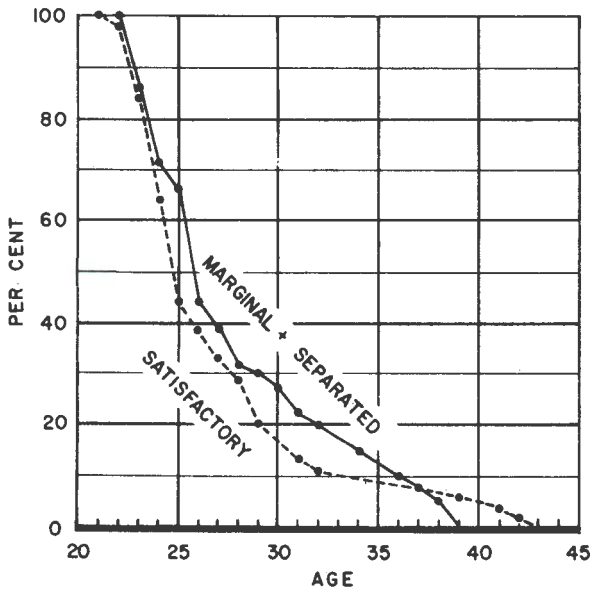

Figure 5 – Follow-up of seven (1960-61) terminal training course classes – Cumulative per cent curves of age for satisfactory (N = 55) and marginal (N = 32) plus separated (N = 9) controllers

still with the FAA but who were: (a) Considered by one or more supervisors as having an undesirable (unsafe) effect on air traffic safety; or (b) rated by one or more supervisors as being unwanted at a facility at which the supervisor might become a Chief; or (c) in the bottom 25 percent of the distribution of average supervisor ratings. In most instances unsafe and unwanted controllers were also in the bottom 25 percent of the average supervisor ratings. Separated subjects were those who completed the training course but have since left the FAA, and satisfactory subjects were all other course graduates not falling into the preceding groups.

Age related differences between the satisfactory and marginal plus separated controller groups are once more apparent in the figures, and again more pronounced for the Enroute group of Figure 4 than for the Terminal group of Figure 5. Chi-square tests of the differences between the curves in each figure were significant at less than the .05 level in the case of Figure 4 and between the .05 and .06 level for Figure 5, when the Enroute and Terminal groups were dichotomized at their respective median ages.

As another index of the relationship between age and job performance, correlations were computed for age vs. average supervisor rating for Samples 2 and 4 separately. The coefficient for Sample 2 was $-.28$ ($P < .01$) and for Sample 4, $-.05$ (not significantly different from zero). Thus, the more pronounced relationships between age and other school and job performance measures for Enroute trainees and controllers continue to be exhibited in the data. However, in all comparisons the same negative trends have been found for the Terminal trainees and controllers. Consequently, it is safe to conclude that for both the Enroute and the Terminal types of work older men have less chance of succeeding either in school or on the job.

The training outcome and follow-up data of Sample 5 showed the same trends as the other samples. Figure 6 contains cumulative percentage curves for training course failures, marginal controllers, and successful controllers. For this sample, a marginal controller has been defined as: (a) A controller who has been cited for violations of air traffic rules and procedures and is either still with the FAA ($N = 23$) or is no longer with the FAA ($N = 3$); or (b) a controller still with the FAA who is in the bottom 25 per cent of the average supervisor ratings ($N = 28$). A fail ($N = 20$) is a training course failure in 1956, and a satisfactory controller ($N = 91$) is one still with the FAA and not considered marginal.*

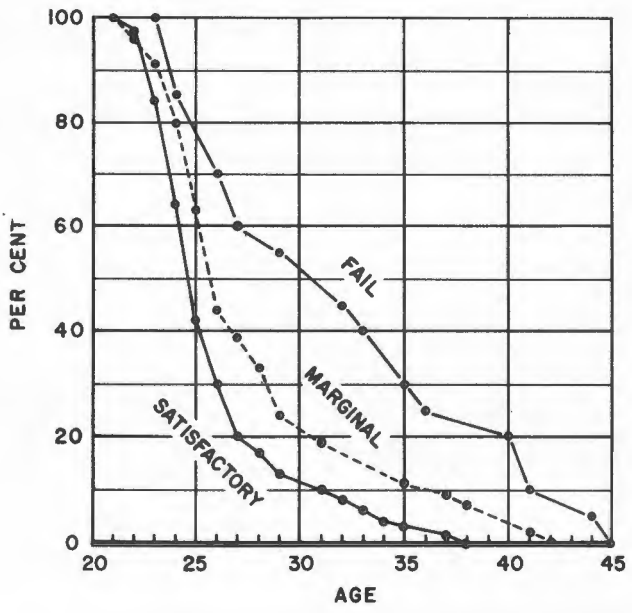

Figure 6 – Follow-up of ATC training classes of 1956 – Cumulative per cent curves of age for **satisfactory** ($N = 91$) and **marginal** ($N = 54$) controllers and training course **failures** ($N = 20$)

*Three men in the satisfactory controller group and one in the marginal controller group were assigned to Flight Service Stations and should not have been considered fully qualified and active controllers. All other satisfactory and marginal controllers were considered fully qualified.

Chi-square tests of the differences between satisfactory vs. marginal and satisfactory vs. fail were significant at less than the .05 level using a median age cut for the former and at less than the .01 level with an approximate 75-25 per cent age cut for the latter. Further evidence of the negative relationship between age at entry into training and job performance five years after course completion was the correlation of $-.23$ ($P < .01$) between age and the average supervisor ratings.

DISCUSSION

From the results of the preceding analyses the only conclusion possible is that a strong negative relationship exists between age at entry into ATC training and subsequent school and job performance. The magnitude of this relationship is further illustrated in Figures 7 and 8.

Both figures were developed by establishing four subgroups of nearly equal age range for Sample 2 combined with Sample 4 and for Sample 5 by itself. The percentage of various criterion classifications of individuals in the four age groups was then determined and plotted in Figure 7 for Sample 2 plus Sample 4, and in Figure 8 for Sample 5. Because the follow-up questionnaires used for Samples 2 and 4 differed from those used for Sample 5, the categorizations in the two figures were somewhat different. The definitions of the categories are those previously given.

In Figure 7 the regular increase in the failure percentages and the regular decrease in the percentages of satisfactory individuals are well illustrated as one progresses from the youngest to the oldest age group. The pattern of the other types of marginal controller is not as apparent. The largest total percentage of marginal controllers is in the 27-32 year old group which also contains the largest percentage of those individuals considered unsafe. On the other hand, the largest percentage of separated individuals is in the oldest age group. In any event, the total percentage of marginal controllers in each of the four age ranges, when coupled with the percentage of failures, is such that the chances for an individual being considered a satisfactory controller are approximately 1 in 5 if he is 33 years of age or older upon entering training; whereas the chances are approximately 1 in 2 if he is younger than the age of 33.

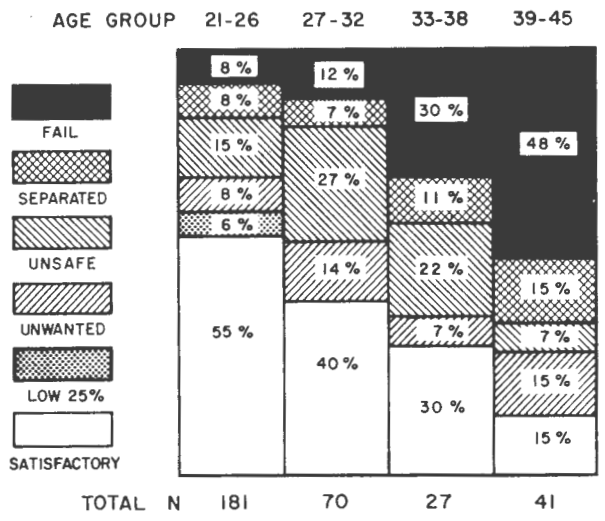

Figure 7 — Per cent within age groups of satisfactory controllers vs. various types of unsatisfactory trainees and controllers from 10 enroute and 7 terminal ATC training classes of 1960-61

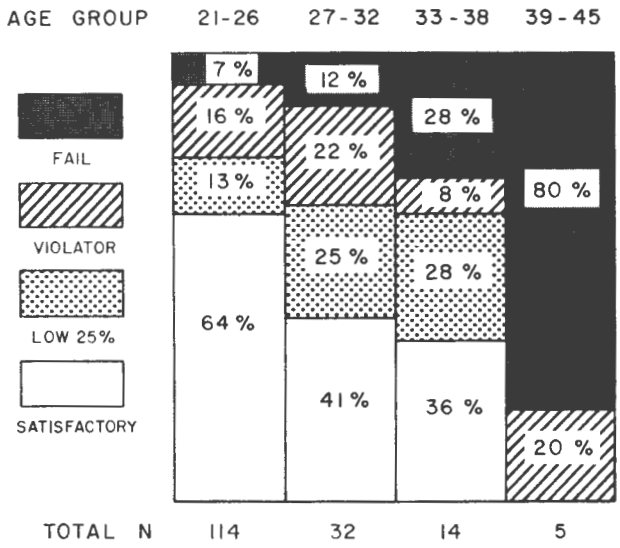

Figure 8 — Per cent within age groups of satisfactory controllers vs. various types of unsatisfactory trainees and controllers from the follow-up of the ATC training classes of 1956

The data presented in Figure 8 for the 5 year follow-up sample are remarkably similar to those in Figure 7 – especially with respect to the failure percentages in the lowest age ranges. Unfortunately, there was not as large a group of older trainees in Sample 5 as in Samples 2 and 4. This created a relatively unstable base on which to compute percentages in the two oldest age ranges. Nonetheless, the same picture is found in this sample as in the others. The chances for an individual to be considered a satisfactory controller if he is 33 years of age or older at the time he enters training are approximately 1 in 4; whereas if he is less than 33 years old the chances are 1 in 2.

The reasons underlying the negative relationships between age at entry into training and school and job performance have not been considered in this report. The purpose herein has been to describe the relationships and not attempt to probe beneath their surface to determine the true, casual factors which are embodied in chonological age. This latter analysis must await the collection of more data.

Whatever the nature of the casual factors associated with chronological age and underlying the relationships of this study, there is no doubt that the number of potential training failures can be reduced and undesirable controllers eliminated by specifying a maximum age for entry into air traffic controller training. In the best interests of air safety and financial economy, establishment of an upper age limit is recommended.

Acknowledgments

So many individuals and groups contributed to this study, it is impossible to express our appreciation to each by name, but the authors especially wish to thank: All the Facility Chiefs and controllers whose evaluations contributed much of the basic data for this study; the programmers and personnel of the data processing group at the Aeronautical Center who provided many of the required statistical analyses; the artists and photographers whose charts and graphs should make this report more understandable; and, finally, Mr. R. S. Beebe and mesdames Mary Ellen Allen, Betty Peal, Bernice Parduhn, and Catherine Sublett whose assistance in all parts of the project contributed significantly to its completion.

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CIVIL AEROMEDICAL RESEARCH INSTITUTE
Special Research Project

FEDERAL AVIATION AGENCY
Box 1082, AM-907
Okahoma City, Oklahoma

FORM A: PERSONAL HISTORY

NAME_____ FACILITY_____

TO THE CHIEF CONTROLLER: PLEASE COMPLETE THIS FORM FOR THE MAN WHOSE NAME APPEARS ABOVE AND RETURN IT TO THE CIVIL AEROMEDICAL RESEARCH INSTITUTE IN THE ATTACHED ENVELOPE.

	DATE	GS GRADE		DATE	GS GRADE
1. CURRENT JOB: (GIVE TITLE OR STATUS)			4. PROMOTED TO JOURNEYMAN CONTROLLER		
2. RECOMMENDED FOR PROMOTION TO JOURNEYMAN CONTROLLER			5. CENTER AREA RATING RECEIVED . .		
3. FIRST ASSIGNED TO ACTING JOURNEYMAN CONTROLLER DUTIES UNASSISTED			6. TOWER JUNIOR RATING RECEIVED . .		
			7. TOWER SENIOR RATING RECEIVED .		

8. IF PROMOTED ABOVE THE FIRST LEVEL OF JOURNEYMAN CONTROLLER, LIST TITLES AND EFFECTIVE DATES OF PROMOTIONS:

9. IF TRANSFERRED, INDICATE REASON AND WHERE TRANSFERRED:

10. LIST THE NUMBER OF HOURS OF SICK LEAVE TAKEN IN THE FOLLOWING YEARS: 1957_____; 1958_____; 1959_____; 1960_____; 1961_____; 1962_____; 1963_____; 1964_____.

11. IN THE FOLLOWING LIST, CHECK THE ITEMS THAT THE INDIVIDUAL HAS BEEN TREATED FOR, SUFFERED FROM, OR COMPLAINED OF: ULCERS___ HIGH BLOOD PRESSURE___ DIZZINESS___ HEART AILMENTS___ EMOTIONAL PROBLEMS (MAJOR OR MINOR)___ ASTHMA___ HAY FEVER___ FREQUENT HEADACHES___ NONE OF THESE___ OTHER (PLEASE DESCRIBE BRIEFLY)_____

12. IF ANY DISCIPLINARY ACTIONS HAVE BEEN TAKEN AGAINST THIS CONTROLLER AS A RESULT OF VIOLATIONS OF AIR TRAFFIC RULES OR PROCEDURES, PLEASE LIST DATE AND TYPE (LETTER OF REPRIMAND, SUSPENSION FROM PAY STATUS, ETC.)

13. COMPLETE THIS FORM WHETHER OR NOT THE EMPLOYEE IS STILL WITH THE FAA. IF NO LONGER WITH THE FAA, GIVE REASON FOR LEAVING THE SERVICE AND DATE OF TERMINATION, IF KNOWN.

14. IF INDIVIDUAL HAS RESIGNED, OR TERMINATED, WAS HIS PERFORMANCE OF OPERATIONAL DUTIES SATISFACTORY? YES___ NO___

DATE_____

_____
SIGNATURE OF CHIEF CONTROLLER

(IF MORE ROOM IS NEEDED FOR ANY ITEM, PLEASE USE BACK OF SHEET)

FORM B: PERFORMANCE EVALUATION

NAME _____ FACILITY _____

TO THE RATER: PLEASE EVALUATE THE EMPLOYEE WHOSE NAME APPEARS ABOVE. RATE THE ITEMS INDEPENDENTLY AND WITHOUT PRIOR DISCUSSION WITH ANY OTHER PERSONNEL WHO MAY ALSO BE RATING HIM. IF YOU ARE ASKED TO RATE MORE THAN ONE EMPLOYEE, RATE EACH ITEM FOR ALL EMPLOYEES BEING EVALUATED BEFORE CONSIDERING THE NEXT ITEM. FOR EXAMPLE, RATE ALL EMPLOYEES ON "STEADY ATTENTION TO WORK AND CONDUCT" BEFORE RATING THEM ON "ABILITY TO ORGANIZE WORK AND MAKE MOST EFFECTIVE USE OF TIME, EQUIPMENT, AND INFORMATION CURRENTLY AVAILABLE." PLEASE PLACE A CHECK-MARK IN THE APPROPRIATE BOX OPPOSITE EACH STATEMENT. COMPLETE ITEMS 1 - 12 AND ITEMS 16 - 17 FOR ALL EMPLOYEES BEING RATED. COMPLETE ITEMS 13 - 15 ONLY FOR EMPLOYEES IN TRAINING STATUS.

E-Excellent; VG-Very Good; G-Good; F-Fair; U-Unsatisfactory

	E	VG	G	F	U
1. STEADY ATTENTION TO WORK AND CONDUCT					
2. ABILITY TO ORGANIZE WORK AND MAKE MOST EFFECTIVE USE OF TIME, EQUIPMENT, AND INFORMATION CURRENTLY AVAILABLE					
3. DEMONSTRATED ATTITUDE AND CHARACTER					
4. RATE OF CONTINUED IMPROVEMENT					
5. ABILITY TO UNDERSTAND AND APPLY CONTROLLER PROCEDURES					
6. ABILITY TO MAKE DECISIONS REQUIRED BY HIS POSITION					
7. DISPLAY OF GOOD JUDGMENT					
8. EMOTIONAL STABILITY UNDER PRESSURE					
9. DEMONSTRATED APTITUDE FOR AIR TRAFFIC CONTROL ACTIVITIES					
10. POTENTIAL FOR CONTINUED EMOTIONAL STABILITY IN AIR TRAFFIC CONTROL ACTIVITIES					
11. ABILITY TO GET ALONG WELL WITH OTHERS					
12. ABILITY TO WORK COOPERATIVELY WITH OTHERS					
(Complete only for trainees) 13. PRESENT PERFORMANCE OF OJT DUTIES					
(Complete only for trainees) 14. POTENTIAL ABILITY TO PERFORM JOURNEYMAN DUTIES					
(Complete only for trainees) 15. IF TRAINEE HAS RESIGNED, HOW SATISFACTORY WAS HIS PERFORMANCE OF OPERATIONAL DUTIES					

16. DO THE CONTROLLER ACTIVITIES OF THIS INDIVIDUAL EVER HAVE AN UNDESIRABLE EFFECT ON AIR TRAFFIC SAFETY?
YES____ NO____

17. IF YOU WERE A FACILITY CHIEF, WOULD YOU WANT THIS INDIVIDUAL ON YOUR STAFF AS AN ACTIVE CONTROLLER? YES_____ NO_____. IF NO, PLEASE CHECK AT LEAST ONE REASON: UNSAFE_____; HARD TO GET ALONG WITH_____; BETTER AS A SUPERVISOR OR IN A STAFF POSITION_____; UNSATISFACTORY PERFORMANCE _____; PHYSICAL LIMITATIONS_____; NONE OF THESE_____.

REMARKS:

DATE _____

_____
SIGNATURE AND TITLE OF RATER

CIVIL AEROMEDICAL RESEARCH INSTITUTE
Special Research Project

FEDERAL AVIATION AGENCY
Box 1082, AM-907
Oklahoma City, Oklahoma

FORM A: PERSONAL HISTORY

NAME _____ FACILITY _____

TO THE CHIEF CONTROLLER: PLEASE COMPLETE THIS FORM FOR THE MAN WHOSE NAME APPEARS ABOVE AND RETURN IT TO THE CIVIL AEROMEDICAL RESEARCH INSTITUTE IN THE ATTACHED ENVELOPE.

	DATE	GS GRADE		DATE	GS GRADE
1. RECOMMENDED FOR PROMOTION TO JOURNEYMAN CONTROLLER			3. PROMOTED TO JOURNEYMAN CONTROLLER		
2. FIRST ASSIGNED TO ACTING JOURNEYMAN CONTROLLER DUTIES UNASSISTED			4. CENTER AREA RATING RECEIVED. .		
			5. TOWER JUNIOR RATING RECEIVED. .		
			6. TOWER SENIOR RATING RECEIVED. .		

7. IF PROMOTED ABOVE THE FIRST LEVEL OF JOURNEYMAN CONTROLLER, LIST TITLES AND EFFECTIVE DATES OF PROMOTIONS:

8. IF TRANSFERRED, INDICATE REASON: PROMOTION; BECAUSE OF PROBLEMS AT HIS FACILITY; OTHER (EXPLAIN).

9. LIST THE NUMBER OF HOURS OF SICK LEAVE TAKEN IN THE FOLLOWING YEARS: 1957____; 1958____; 1959____; 1960____.

10. IN THE FOLLOWING LIST, CHECK THE ITEMS THAT THE INDIVIDUAL HAS BEEN TREATED FOR, SUFFERED FROM, OR COMPLAINED OF:
ULCERS___ HIGH BLOOD PRESSURE___ DIZZINESS___ HEART AILMENTS___ EMOTIONAL PROBLEMS (MAJOR OR MINOR)___ ASTHMA___
HAY FEVER ___FREQUENT HEADACHES___

11. IF ANY DISCIPLINARY ACTIONS HAVE BEEN TAKEN AGAINST THIS CONTROLLER AS A RESULT OF VIOLATIONS OF AIR TRAFFIC RULES OR PROCEDURES, PLEASE LIST DATE AND TYPE (LETTER OF REPRIMAND, SUSPENSION FROM PAY STATUS, ETC.)

12. COMPLETE THIS FORM WHETHER OR NOT THE EMPLOYEE IS STILL WITH THE FAA. IF NO LONGER WITH THE FAA, GIVE REASON FOR LEAVING THE SERVICE.

DATE _____

_____
SIGNATURE OF CHIEF CONTROLLER

(If more room is needed for any item, please use back of sheet)

FORM B: PERFORMANCE EVALUATION

NAME _____ FACILITY _____

TO THE RATER: PLEASE EVALUATE THE EMPLOYEE WHOSE NAME APPEARS ABOVE. RATE THE ITEMS INDEPENDENTLY AND WITHOUT PRIOR DISCUSSION WITH ANY OTHER PERSONNEL WHO MAY ALSO BE RATING HIM. IF YOU ARE ASKED TO RATE MORE THAN ONE EMPLOYEE, RATE EACH ITEM FOR ALL EMPLOYEES BEING EVALUATED BEFORE CONSIDERING THE NEXT ITEM. FOR EXAMPLE, RATE ALL EMPLOYEES ON "STEADY ATTENTION TO WORK AND CONDUCT" BEFORE RATING THEM ON "ABILITY TO ORGANIZE WORK AND MAKE MOST EFFECTIVE USE OF TIME, EQUIPMENT, AND INFORMATION CURRENTLY AVAILABLE." PLEASE PLACE A CHECK-MARK IN THE APPROPRIATE BOX OPPOSITE EACH STATEMENT.

E-Excellent; VG-Very Good; G-Good: F-Fair; U-Unsatisfactory

	E	VG	G	F	U
STEADY ATTENTION TO WORK AND CONDUCT					
ABILITY TO ORGANIZE WORK AND MAKE MOST EFFECTIVE USE OF TIME, EQUIPMENT, AND INFORMATION CURRENTLY AVAILABLE					
DEMONSTRATED ATTITUDE AND CHARACTER					
RATE OF CONTINUED IMPROVEMENT					
ABILITY TO UNDERSTAND AND APPLY CONTROLLER PROCEDURES					
ABILITY TO MAKE DECISIONS REQUIRED BY HIS POSITION					
DISPLAY OF GOOD JUDGMENT					
EMOTIONAL STABILITY UNDER PRESSURE					
DEMONSTRATED APTITUDE FOR AIR TRAFFIC CONTROL ACTIVITIES					
POTENTIAL ABILITY					
POTENTIAL FOR CONTINUED EMOTIONAL STABILITY IN AIR TRAFFIC CONTROL ACTIVITIES					
ABILITY TO GET ALONG WELL WITH OTHERS					
ABILITY TO WORK COOPERATIVELY WITH OTHERS					

REMARKS:

DATE: _____

_____
SIGNATURE AND TITLE OF RATER