ORLANDO POLICE DEPARTMENT
COMPLAINT DESK PERSONNEL TRAINING SIMULATOR

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BACKGROUND ON THE PROBLEM

In most police departments, the Communications Center is the focal point of all public calls and other inputs to the system. It houses the personnel and equipment necessary to receive and integrate all information pertaining to routine or emergency situations and control and coordinate the men and equipment needed to respond to the situation. Personnel typically include Dispatch Officers who receive the incident calls, assess the force status situation, and assign the necessary response, and Radio Operators who communicate with the field forces.

It must be recognized that both Dispatch Officer and Radio Operator are key positions in fulfilling the mission of the Department. The Dispatch Officer is many times the first and only contact of the citizen seeking help from the Department. On the other hand, the Radio Operator may be the only link the Field Officer has with his source of help. Personnel manning these positions must be carefully selected for their job related abilities and further trained in their duties to the required proficiency, or rejected as unacceptable. The Communications Center personnel should be trained as an elite group comparable to special uniformed units.

In a typical police department, however, training of New Complaint Desk personnel, both civilian and officer, consists of an on-the-job training situation without well-defined procedures. On-the-job training can be an effective method when supported by specific classroom instruction; but it must be recognized that it has several inherent disadvantages. It requires the duty staff to divert a portion of their time and attention from their primary assignment, which tends to decrease the overall efficiency and effectiveness of the Center. The practice of on-the-job training also has the inherent danger of a foulup which could endanger the safety of both citizen and police officer. In addition, the training scenario cannot be controlled to include the necessary stress situations, and instructional feedback on performance is not feasible. For these reasons, it is desirable to augment conventional training with some type of simulation training away from the real system position.

It is noted that the training problem described is generally one which is faced in common by all law enforcement agencies. Accordingly, although this research was aimed at developing new selection and training methods specifically for Complaint Desk personnel at the Orlando Police Department, the results will be generally applicable to the operation of other law enforcement agency Communication Centers. Additionally, some Simulation Training Model Scenarios could be introduced effectively into the general training curriculum for police officers. It might be used to develop a realistic feeling and appreciation for the teamwork required between the Field Forces and Communication Center to effectively answer a complaint call. Also, more advanced training models could be used by command officers and on-board Communication Center personnel to maintain and sharpen their decision-making capabilities.

This paper describes the initial effort to develop a training simulator for the Complaint Desk Personnel at the Orlando Police Department. The work was performed as part of a research grant funded through the Florida Governor's Council on Criminal Justice to perform a Computer Simulation of the Command/Control operations of the Orlando Police Department.[4] The final report was released in September 1972. The primary objective of the Simulator work was to demonstrate its feasibility and effectiveness for police applications. This objective was accomplished, and the simulator is presently inactive awaiting funding on an additional grant proposal to develop it into a permanent training device.

ORLANDO POLICE DEPARTMENT COMMUNICATIONS CENTER OPERATION

All police departments utilize some type of Command/Control system by which they direct and control their field forces in a dynamic response environment. This system includes the functions of rapid and complete information assembly, decision making, and execution which will assure the objective of rapid response to the threat situation while minimizing the danger to both citizen and police officer.

Speeding up the command/control process offers one of the more effective methods of improving the effectiveness of a police system. For example, in a Los Angeles based study[8], a correlation of percent of arrests in relation to response time showed a sharp increase in arrest probability with decrease in response time. The curve could be described as an exponential function exhibiting a sharp increase in apprehension rate for response times of less than 4 minutes. The study also showed that the Communications Center delay accounted for from 30 to 50% of total response time on emergency calls.

Operation of the Orlando Police Department Communications Center is described by the flow chart in Figure 1. All functional groups, Complaint Desk, Radio Operator, and Teletype, are identified; additionally, those functional blocks associated with the Dispatch Officer have been shaded for easy reference.

Telephone calls from the general public account for approximately half of all the calls answered at the Complaint Desk. The remaining calls are from other activities within the police department, and other law enforcement agencies, such as the Florida Highway Patrol and Orange County Sheriff's Department. Additionally, a small percentage of "still" alarm calls are received via a special display board.

The general public calls the Police Department when it needs emergency aid, wishes to report a crime or suspicious activity, or many times simply desires information. Dialing the Orlando Police Department "Emergency" number directly places the caller in contact with a Dispatch Officer at the Command/Control Center. Although he may never see the Dispatcher, the caller's life could depend on the officer's decisions and actions. To this citizen, the Dispatch Officer is the Police Department, and how he conducts himself reflects on all officers on the force.

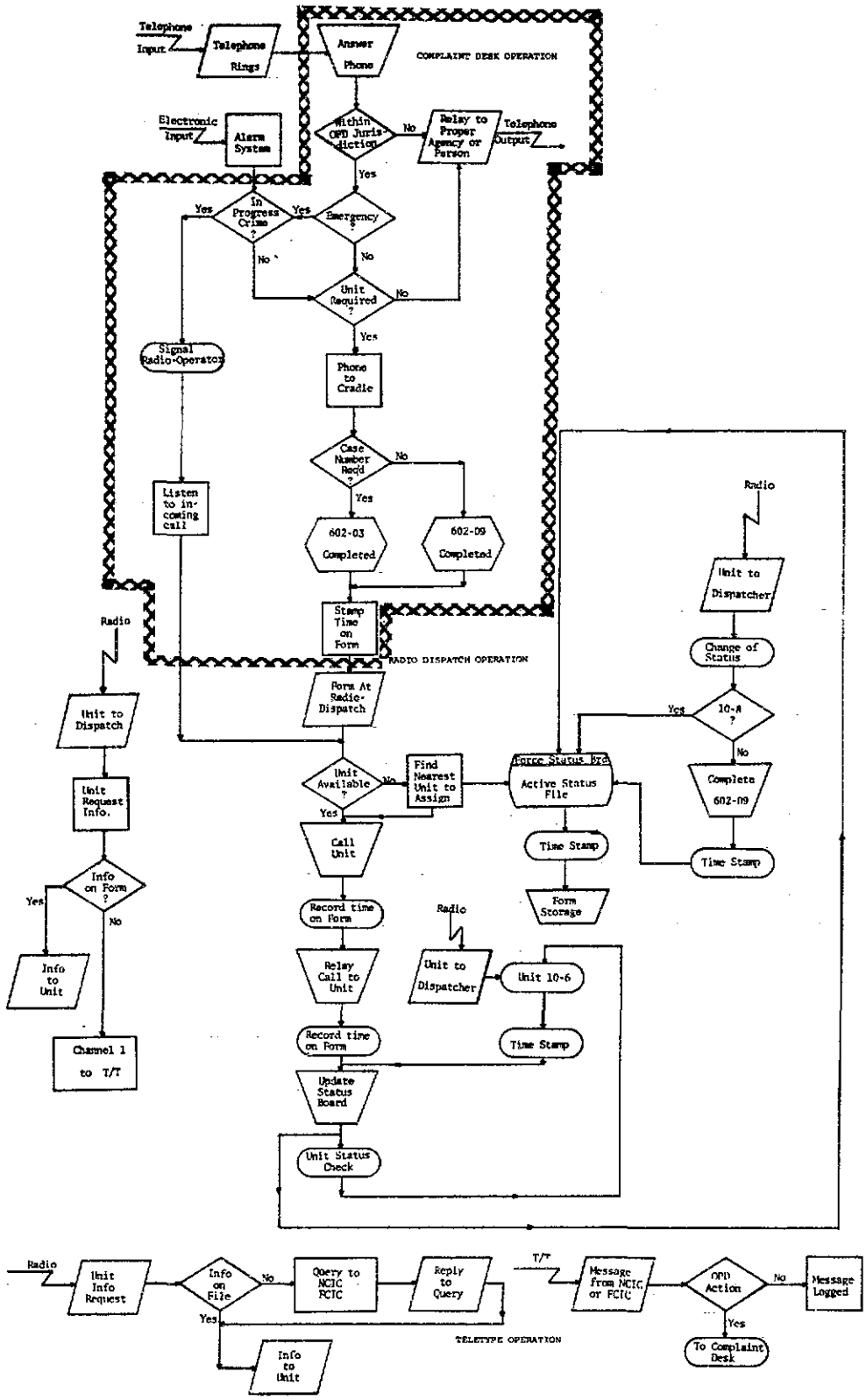


FIGURE 1: Command/Control Center Operational Flow Chart for Orlando Police Department

Until it is determined otherwise, a call to the Complaint Desk must be considered an emergency. The call must be answered, information obtained, all requisite forms completed and a patrol unit dispatched, if required, within the shortest possible time. How the information is obtained is based on training and experience; but the same general information is required of every incoming call before any decisions may be made. The Dispatch Officer must determine:

- Name and location and telephone number of the caller;
- Location of the incident;
- Nature of the call, that is, to report a crime or disturbance, to report an accident, or to request information;
- Names of any involved persons;
- Whether the call required immediate or emergency assistance, such as an ambulance.

With this information, the Dispatch Officer can determine if the site is within the Orlando Police Department jurisdiction, whether a patrol unit should be sent, an ambulance or other assistance should be dispatched, and if a case number for a permanent police record is required. These decisions are made for all incoming calls, although the order in which they are made vary by Dispatch Officer. If a call does require a police unit, the Dispatch Officer completes either a 602-09 or a 602-03 form. These forms summarize the information pertinent to the call and enable the officer to indicate the patrol district and patrol unit to be assigned, if available.

The 602-03 form has a sequenced record number in the top right corner and is completed when a police report file will be created on the incident. When either form is used, the time of day and date are electronically stamped on the card before it is deposited in a conveyer belt which transports it to the Radio Operator.

Table I, shown on the following page, lists the responsibilities of the Dispatch Officer, and shows that he has duties other than answering the telephone. All "messages" or "local-look-outs" must be approved by the Dispatch Officer. This is done to minimize the broadcasting of repetitive information to the field units. He is also responsible for informing owners of businesses where burglaries have been attempted, and notifying other law enforcement agencies of the incdient which could affect communities outside of Orlando. He is the advisor as to which units to dispatch and the source of information to the field unit relative to the incident, such as the general mood of the caller. The Dispatch Officer interfaces with all other functions within the Command/Control Center, the Orlando Police Department, other safety agencies, and the general public. He is the focal point of force status and complaint information which is the heart of the Command/ Control operation.

TABLE I

LIST OF FUNCTIONS PERFORMED

BY DISPATCH OFFICER IN

DISCHARGING HIS RESPONSIBILITIES

- MONITOR AND ANSWER ALL PHONE EXTENSIONS WITHIN A SPECIFIC NUMBER OF RINGS
- ASCERTAIN NATURE OF CALL
- ASCERTAIN JURISDICTION
- DETERMINE THE NATURE OF ASSISTANCE REQUIRED
- COMPLETE 602-03 OR 602-09
- LOCATE DISTRICT IN WHICH REPORT PERTAINED
- RECORD TIME RECEIVED AND TIME GIVEN TO RADIO OPERATOR
- COMPLETE 602-03 FROM FIELD REQUEST
- CONTACT RESPONSIBLE PERSONS OF BURGLAR ALARMS OR REPORTED B & E'S AT THEIR PLACE OF BUSINESS
- NOTIFY LAW ENFORCEMENT AGENCIES OF SERIOUS CRIMES
- COMPLETE "LOCAL-LOOK-OUT" FORM FROM T/T OR PHONE INFORMATION
- SIGN T/T "MESSAGE" FORMS FOR BROADCAST
- CONTACT LOCAL NEWS MEDIA OF INFORMATION FOR BROADCAST TO PUBLIC TO ASSIST POLICE

DEVELOPING THE TRAINING SIMULATOR MODEL

A Dispatch Officer Training Simulator was developed for Orlando Police Department[4] to demonstrate its feasibility as a means of training new recruits, and also to maintain and upgrade the decision-making capabilities of on-board Command/Control personnel.

Although a simulation model cannot duplicate the real-world conditions, care was taken to include the important functions and stress conditions. The Game Model integrated the real-world operating situation of the Complaint Desk position with a series of controlled tactical situations which were designed to evaluate the examinee's ability to handle difficult situations, and his reaction to stress. It begins with a simulated complainant calling the examinee to present him with a tactical situation, and ends with the evaluation of his performance in the form of a quantitative performance rating.

For purpose of discussion, the Training Simulator can be described as a system where the Dispatch Officer (examinee) is a transform function who must act on a given input within a selected environment to produce a desired output. This concept is illustrated by the block diagram in Figure 2 which views the training model as a system and shows the sequence of interrelated activities which combine to determine a performance rating for the examinee. In this model, a phone call to the examinee is the input which triggers the system. The phone call is made by the game instructor and/or his assistant(s) who simulate a complainant in a typical situation. The typical situation scenario generally contains the following information:

* Type of incident for which the phone call is being made, i.e., robbery, auto accident, etc.;

* Description of the caller and his or her characteristics, such as female; intoxicated; voice is soft, raspy; speech is incoherent, with hostile attitude;

* Description of the incident, in detail, which the caller has available to furnish the Dispatch Officer, if he is asked to do so;

* The procedural steps involved in the solution of that situational incident which should be followed by the examinee;

* Instructions to the examiner for administering the situation;

* Copy of the correctly completed form(s) which the situation would require in the real-life environment.

* Evaluation procedures and evaluation sheets for grading the examinee performance on that situation.

The examiner, or instructor, is responsible for directing the execution of the game situation according to the instructions in the situation scenario. The instructor may be assisted by up to three personnel at any one examination session, depending upon the complexity of the scenario. These assistants need not be personnel experienced in Command/Control; but would be selected on their ability to imitate, according to written instructions, various types of complainants.

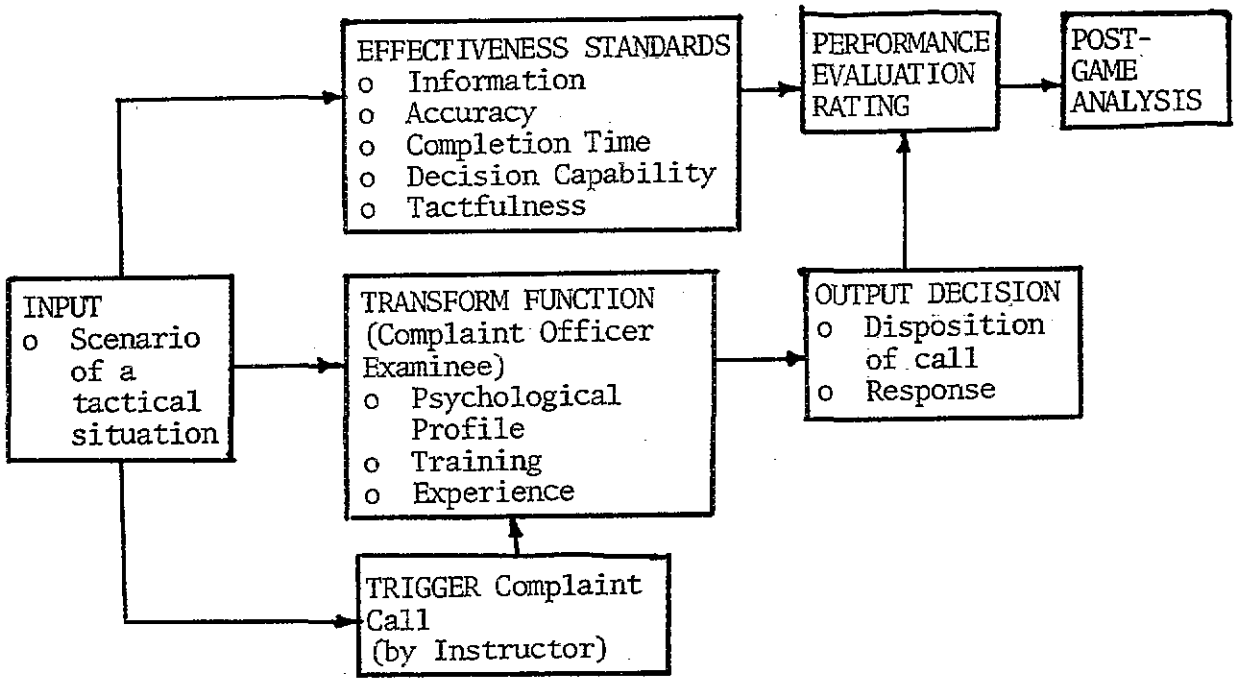


Figure 2. The Block Diagram of the Operation Training Model as a System Shows the Interrelated Activities of the Participants

Execution of a game session begins with the seating of the examinee in the Examination Room adjacent to the Control Room. The instructor then briefs him on the equipment he will use and the criteria on which he will be graded, such as speed, accuracy, decision-making ability, and tactfulness. The instructor does not reveal any other information. The examinee is also provided with text describing the operational environment and model Force Status Board reflecting the field situation at the time of the incident. sequence. After the examinee has assimilated the situational information, the game commences with the first call. The instructor is stationed in the Control Room behind a one-way mirror to continually observe the examinee's behavior. The exercise ceases when the examinee has completed all forms and required actions on the sequence of calls. A post-game analysis is then conducted by the instructor during which the examinee is appraised of his mistakes and their corrections, and reinforced on his efficiencies.

ESTABLISHING PERFORMANCE EVALUATION CRITERIA

A set of Performance Evaluation Criteria, or performance measures, which define the major functions of the Complaint Officer, is required so that the performance of the examinee can be measured and evaluated. The major evaluation criteria selected to describe the Complaint Desk function were Information Accuracy, Form Completion or Unit Deployment Time, Decision Capability, and Tactfulness. The four performance criteria were then weighted to reflect their relative importance. The sum of the weighted criteria ratings were used to determine the overall performance of the examinee.

Performance measures are requisite for successful management of any system. They provide the means to measure system output so that it can be compared to set objectives and corrective action taken to ensure meeting these objectives. In the case of the Dispatch Officer function, this is a difficult task since it requires measurement of cognitive action. These actions are typically associated with decision-making capability and cannot be measured directly. Indirect measures are required which will indicate the relative performance. In addition, it must be recognized that each evaluation criteria selected must also be assigned a relative value which it contributes to the overall performance.

Accordingly, the general approach was to initially observe the operation and detect factors which might be measurable and thereby provide a good indication of actual performance. This information was augmented by interview of the Dispatch Officers and their supervisory personnel to determine what factors they considered were important to discharge the responsibility of the Complaint Desk function. The resulting factors were analyzed and four were selected; these are listed in order of their relative importance in Table II.

Form Completion Time is an important measurement of effectiveness. This is especially true since one of the primary objectives of the Command/Control system is to minimize response time for a complaint call. Therefore, it is important for the trainee to develop a sense of timeliness in his information gathering.

Information Accuracy is also important. If the information obtained from a complaint call is inaccurate or incomplete, the dispatched order could create a serious or emergency situation. Information extraction can become a complex

TABLE II

LIST OF PERFORMANCE EVALUATION CRITERIA

FOR DISPATCH OFFICER POSITION

Criteria	Description
Form Completion	Quantitative measure of the total elapsed time between the time of the first telephone ring and when the form (602-03, 09) is completed or unit dispatch is initiated; whichever comes first.
Information Accuracy	Quantitative measure based on the number of discrepancies between the information given by the complainant and the information listed by the examinee.
Decision	Judgmental measure of the examinee ability to determine which type of call he is handling in order to extract the necessary information and also his ability to decide on the proper field unit assignment.
Tact	Judgmental measure of the examinee ability to tactfully handle difficult situations presented by the complainant.

The performance of a Dispatch Officer has been defined as a function of a number of criteria which can be scored individually and summed to determine his overall performance rating. This approach must also recognize that each individual criteria typically contributes a different amount to the total performance. Mathematically this could be expressed,

$$V_{performance} = \sum_{1}^{n} f(X_i)\, X_i$$

Where V = the total performance rating value

X = the individual performance criteria

$f(X_i)$ = the weighting or relative value contributed by each criteria, so that

$$\sum_{1}^{n} f(X_i) = 1.0$$

n = the number of criteria

The third method explored was the arithmetic averaging of the relative weights assigned by experts. Table III shows that all three methods produced very similar relative weight distributions to the performance criteria. Although all methods produce comparable results, Nightengale's was selected on the basis that it was the most appropriate for this particular case.

ESTABLISHING PERFORMANCE STANDARDS

Performance standards are an important part of any job description and subsequent evaluation procedure, and must be specifically defined so that they can be measured. It is not enough, for example, to state that a Dispatch Officer must be an efficient data gatherer. How fast must he extract information to be efficient? What specific information is needed? Performance standards must be stated in explicit quantitative terms to effectively evaluate the level of performance of an examinee.

Table IV shows the points assigned to each criteria on the basis of the relative weighting scale established earlier and the scoring techniques to be used in grading the examinee. A committee of proficient Complaint Desk personnel was used to design a series of situation scenarios together with their respective performance standards. Performance standards varied slightly with the degree of complexity of a game situation, but generally adhered to the guidelines discussed here.

Information Accuracy Standards were established by defining all necessary data entries for each situation. The total number of necessary data entries, plus one, for selection of the correct format were assigned equal value points which total 35, the possible score of the criteria. If a data entry was omitted or incorrect, the examinee received zero for that item.

The standards for Form Completion Time were determined by testing proficient Complaint Desk personnel (excluding committee members) against a newly designed situation. The recorded times were then used to establish a standard by assuming a normal distribution, finding the mean (μ^0) and standard deviation (σ). The grading scale was designed such that a recorded time of less one standard deviation above the mean time would give the examinee a maximum score of thirty points. For each additional standard deviation above the mean the examinee was penalized ten points, up to maximum of three standard deviations. This would yield a thirty point penalty, or zero points score, for the Form Completion Time criteria. Three standard deviations were considered maximum since statistically only about .1% of the examiness could be expected to exceed this limit.

Decision Capability standards were established based on identifying those decisions which would affect the successful response of the dispatched unit. Each decision was assigned a relative weighting to reflect its importance. These values were determined by the committee using the Nightengale method previously referenced.

process because of the physiological state or characteristics of the complainant. Example problems would be intoxication, hysteria, ethnic dialects, and speech impediments. The degree of difficulty is frequently increased by verbal abuse exhibited by the complainant.

Decision Capability is reflected in the ability to determine the type of call, which affects the amount of information and the type to be gathered, and to apply the proper procedure for selecting the field unit(s) for response. There are four types of calls which the trainee must be capable of recognizing to ensure selection of the correct procedure. These are keyed to the Operational Modes defined as Routine, Incident, Emergency, and Internal. Upon identification of the type of call, the Dispatch Officer must then make a decision on the procedure to be followed and the necessary unit assignment.

Although Tact is listed last, it is also important. This is a subjectively evaluated criteria to measure the ability to successfully handle difficult situations presented by the complainant.

The validity of this approach hinges on identifying all criteria contributing significantly to the performance, and defining them in such a way that they are independent. In addition, some method of assigning the relative importance, or weight, to teach must be devised.

Three methods of "weighting objectives" were examined prior to selecting what was considered the appropriate weight distribution. The results of this effort are summarized in Table III with weighting values identified by method for relative comparisons. Each method was applied by a group of "experts" consisting of experienced Complaint Desk personnel and their immediate supervisors.

The first technique is described by C. West Churchman.[2] His procedure fundamentally consists of a systematic check on relative judgments by a process of successive comparisons. Operationally, this method involves the programmed questioning of an individual's personal weighting of the criteria involved. He is subjected to two tests, or sets of questioning. Initially, the individual assigns tentative weighting quantities between 0.00 and 100. to the criteria. He is then presented with questions about his preferences involving combinations and/or exclusions of criteria. For example, would he weight criteria A or the combination of B, C, and D, higher. A similar comparison is then conducted using B versus C, and D, etc., until all pertinent combinations have been considered. The method includes the means for revising the individual's first biased weighting assignments.

The second method applied was a technique devised by M. Eugene Nightengale[11] to aid in making decisions under uncertainty. His purpose was to remove some of the uncertainty from the decision process by utilizing the opinions of experts. The method begins by asking each "expert" to subjectively rank each criteria in order of decreasing importance. According to Nightengale, the responses are assumed to form a normal distribution. The percentage of times that criteria x_i is ranked more likely to occur than criteria x_j is transformed with the use of the normal probability distribution into standard measurements of separation. This is then used to generate a relative importance weighting for each criteria.

TABLE III

COMPARISON OF

PERFORMANCE CRITERIA WEIGHTING VALUES,

BY METHOD

Performance Criteria	Assigned Weights		A Priori
	Churchman Method	Nightengale Method	Expert Values
Information Accuracy	29	35	32
Form Completion Time	26	30	25
Decision Capability	23	20	22
Tact	22	15	21
TOTAL	100	100	100

TABLE IV

EVALUATION CRITERIA AND SCORING TECHNIQUES FOR PERFORMANCE STANDARDS

Evaluation Criteria	Scoring Techniques	Possible Score
Information	Let N = number of necessary data items for a given situation, P = 1 if the correct form was used, 0 otherwise, T = total items to be scored, V = point value for each item being scored, S = examinee's score Now: $T = N + P$ $V = T/35$ $S = \sum_{i=1}^{T} V_i$	35
Form	Let established mean time = μ, standard deviation = σ, and Examinee's time = x. If: — Score: $x \leq (\mu + \sigma)$ — 30 $(\mu + \sigma) \quad x \leq (\mu + 2\sigma)$ — 20 $(\mu + 2\sigma) \quad x \leq (\mu + 3\sigma)$ — 10 $x > (\mu + 3\sigma)$ — 0	30
Decision Capability	Let E = Examinee's score, N = total number of necessary decisions, $f(x_i)$ = relative value of each decision, such that $\sum_{i=1}^{N} f(x_i) = 20$, the total possible points x = individual decision Now: $E = \sum_{i=1}^{N} f(x_i)\, x_i$	20
Tactfulness	Subjective Evaluation — Score: Excellent — 15 Good — 10 Fair — 5 Poor — 0	15
	Total Possible Score	100

The standards for Tactfulness were established as a basic guide for the instructor to make his subjective evaluation of the examinee's ability to handle adverse conditions. Situational scenarios were developed which require the examinee to use different degrees of tact in handling a delicate or stress situation.

PHYSICAL LAYOUT OF TRAINING SIMULATOR

The Training Simulator was set up in two adjoining rooms, as shown in the physical layout in Figure 3. The floor plan requirements were based on the functional requirements. Privacy for the examinee was needed to prohibit distractions and to provide him with an environment similar to the real situation. A provision for observing the examinee was necessary to time the information gathering phase of the training situations and to observe the examinee as he responded.

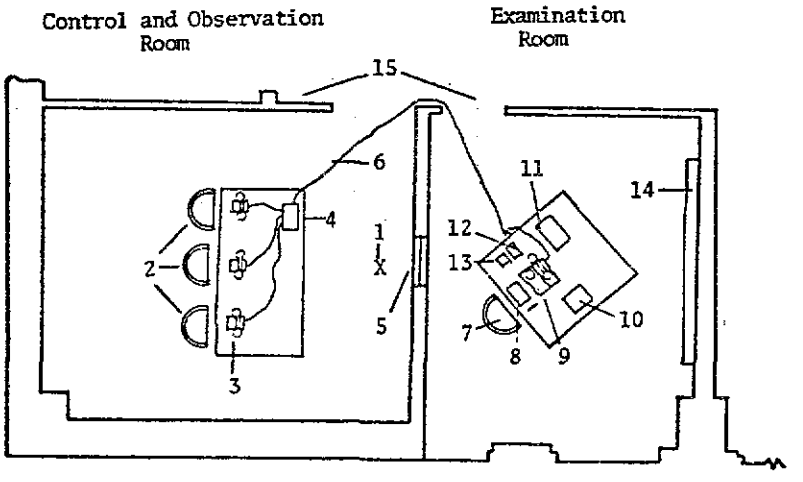
The equipment needed for performing all aspects of the game was selected on the basis of its simulation fidelity and the ease with which it could be installed and revised. This latter requirement was necessary since the rooms could not be assigned on a permanent basis. As shown in Figure 3, it consisted of three single-line telephones, a power supply for the room-to-room phone system, and a clipboard with stopwatch. Three phones were needed to subject the examinee to three calls simultaneously, which is the average maximum number he will face at any single moment as a Dispatch Officer.

The examination room was equipped with a 4- by 6-foot detailed street map of the City, a telephone with three lines to the control room, a map book, a shift duty roster, a supply of 602-03 and 602-09 forms, scratch paper, and pencil. The city map was divided into police districts which duplicate those on the wall map used in the Command/Control Center. The map book was provided to locate specific areas for a more detailed inspection. All materials were those utilized by the Dispatch Officer in his daily activities.

VALIDATION OF THE MODEL

The Training Model was tested for validity and applicability by administering three selected scenarios to about half of the Complaint Desk personnel. Although the goal of testing all Complaint Desk personnel was not achieved, the results obtained were considered significant. One observation was that the training game can be used to effectively evaluate the proficiency of experienced Complaint Desk personnel as well as trainees.

The tests consisted of a three scenario, time sequence of incidents. Initially the examinee was given a routine internal mode operational problem consisting of a call from Investigation Division to locate one of their officers in the field. The second call was timed 30 seconds after the first, and described a traffic accident requiring ambulance, fire department, and power company support. The final incident was a robbery in progress which was timed 90 seconds after the accident call. Each incident required the examinee to extract certain information and respond with decisive actions within a given time frame.



1 Game Examiner's Position
2 Examiner's Assistants' Positions
3 3-one Line Telephones
4 Power Supply For Phone System
5 2-way Mirror
6 Phone Cable
7 Examinee's Position
8 Scratch Paper & Pen
9 6-button Phone (3 Active Lines Only)
10 Map Book Of Orlando
11 Duty Roster Of Field Units Assignment
12 602-03 Forms
13 602-09 Forms
14 Large Scale Map Of Orlando

FIGURE 3: Physical Layout and the Equipment Used In the Command/Control Dispatch Officer Training Simulator

The resulting scores of five participants are listed in Table V. The first significant finding, after applying the game model, was that the ranking of examinees with respect to their operational proficiencies determined by the game was almost identical to the ordering of the examinees by personal evaluation from their supervisor. A comparison of the two orderings, game rated and subjectively rated, is made in Table VI. It is noted that in making the subjective rating the supervisor did not have prior knowledge of each examinee's score.

Additional significant results were discovered in analyzing the scores of each examinee. Certain items in the game caused point deductions for the majority, and in some cases all, of the examinees. Examples of common problems included failure to detect that Incident 3 should be classified as an In-Progress robbery, even though the complainant told each examinee that the robbers had just left the store and were presently fleeing; all five examinees failed to question the complainant on any possible injuries or shots fired resulting from the armed robbery.

COMPUTER ASSISTED TRAINING MODEL

There are numerous training devices in use today which utilize computers. These include training in tasks related to the operation of aircraft, spacecraft, air traffic control, and others, where it is important to dynamically control all aspects of a complex operation in a real time. Computer Assisted Training (CAT) techniques and computer equipment can be applied to the Complaint Desk Personnel Training Simulator.

Although CAT systems today are used primarily in military training applications, technological advancements have reduced computer costs such that commercial applications are becoming more numerous. One such system is the Computer Assisted Training Project[9] of the Los Angeles Police Department. This system is being designed for the LAPD to train and evaluate recruits in their police academy. The system will provide individualized programmed learning, situation simulation, trainee examination and evaluation, and trainee record management. Simulation training provides a method to train effectively, safely, and at less cost when compared to on-the-job training.

Computer augmented applications of the OPD Training Model were investigated. Initially the computer might be used to handle the accounting functions and control execution of the game. By further sophistication, it could present the scenarios and receive the examinee inputs.

The Computer Augmented Training Model can be viewed as a system of three distinct entities, Instructor, Examinee, and Computer, interacting on a real time basis. Figure 4 is a functional block diagram showing the information flow occurring between these three entities under computer control. Interaction between the instructor and the computer, and between the examinee and the computer, would be through keyboard data terminals. Interaction between the instructor and examinee would be via telephone.

TABLE V

SCORES FROM THE INITIAL APPLICATION

OF THE TRAINING MODEL

GAME SCENARIOS

		1	2	3	Examinee Mean Scale
	1	95	97.5	90.8	94.4
	2	95	87.0	72.8	84.9
Examinee	3	95	100	95.6	96.9
	4	95	89.5	78.4	87.6
	5	65	90	75.6	76.9
Mean		89	94.6	82.6	88.1

TABLE VI

COMPARISON OF

SUBJECTIVE EVALUATION

AND

TRAINING MODEL RANKING

		Training Model	Subjective Evaluation
	1	#3	#1, #3 equal
	2	#1	
Ranking Order	3	#4	#4
	4	#2	#2
	5	#5	#5

The mode of interaction between the examinee and the computer via the data terminal would represent a high fidelity simulation of a proposed future mode of Complaint Desk input. Under a proposed computerized Command/Control input mode of incident receipt and processing, all incoming incident reports will be received by the Dispatch Officer and keyed on the terminal for computer input. The incident data would then be processed and translated for display on a Tactical Force Status Board and simultaneously exhibited by CRT at the dispatcher's console. Further refinement of an automated Command/Control System would incorporate automatic digital assignment of units by the computer.

The computerized game logic flow would begin with the manual selection, by the instructor, of a situation from a prepared list stored in the computer on-line files. The instructor's selection would be based on whether the examinee is receiving procedural incident training or performance evaluation. In either case, the instructor would make his selection and then key-in on his terminal the appropriate instructions to select and begin execution of the game.

Upon receipt of the situation selection, the computer, under program control, would retrieve from its on-line files the situation scenario data. The situation environment portion of the scenario would automatically be transmitted to the examinee terminal, and the incident and caller description portions to the instructor terminal. The computer would then place itself in a "wait-state" until a "start" command issued by the instructor would start the computer timing process and signify that the examinee is receiving the incident data. From this step in the functional sequence flow, the computer would evaluate the examinee's Information Accuracy, Information Extraction Time, and Decision Capability automatically as the examinee is carrying out his procedures for handling the particular situation. The computer evaluation would be based on the Performance Standards for that situation which would be a part of the scenario and stored on-line. After the Tactfulness grade input by the instructor, performance evaluation of the examinee would be completed by the computer and transmitted to the instructor for the Post-Game Analysis.

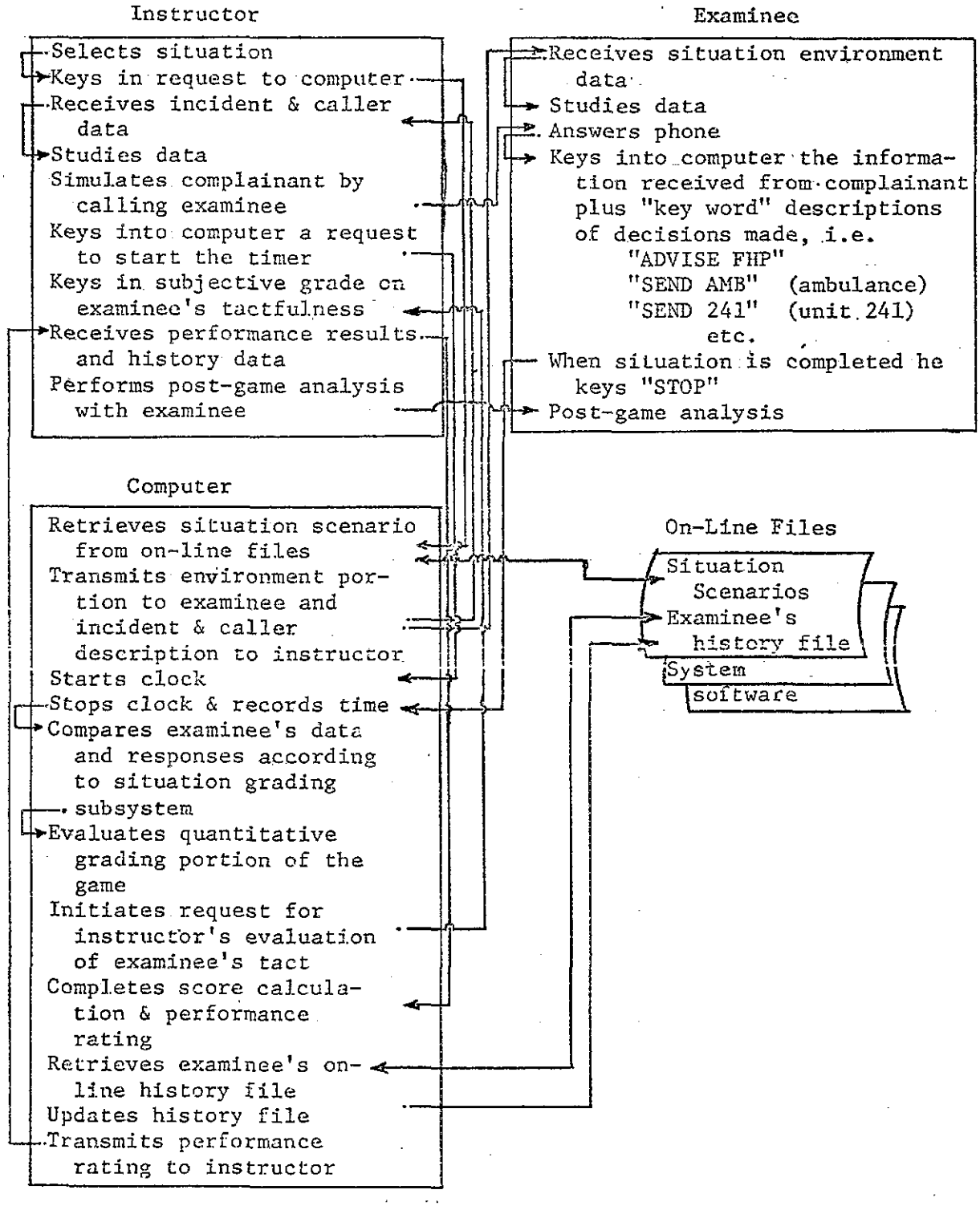


Figure 4. Functional Block Diagram Shows the Interaction and Information Flow of the Computer Augmented Training Model Concept

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