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National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: February 6, 1987

In reply refer to: A-87-3 through -7

Honorable Donald D. Engen
Administrator
Federal Aviation Administration
Washington, D.C. 20591

Since conducting its special investigation of runway incursions at controlled airports in the United States in 1985 and 1986, ^{1/} the National Transportation Safety Board has noted the continuing occurrence of air traffic control (ATC) operational errors committed by control personnel in the Chicago O'Hare International Airport control tower. As a result of its investigation of a near-collision between two air carrier airplanes at a runway intersection while both were taking off on May 17, 1986, the Safety Board issued three safety recommendations A-86-44 through -46 to the Federal Aviation Administration (FAA) on May 27, 1986. Safety Recommendations A-86-44 and A-86-46 applied generally to control tower procedures and staffing; Safety Recommendation A-86-45 applied specifically to the Chicago O'Hare control tower. The Safety Board recommended that the FAA:

A-86-45

Establish on a trial basis, for the north and for the south control operations in the Chicago O'Hare International Airport control tower, local control coordinator positions to monitor and supervise, directly, the local control positions; staff these positions whenever intersecting runways are in concurrent operation.

The objective of this recommendation was to assign a senior controller or supervisor to support the local controller and act as a human redundancy or an "extra set of eyes and ears" to detect and correct any observed human performance deficiencies. The Safety Board believes that this coordinator should wear a headset to monitor the local controller's communication frequencies and, generally, supervise the local controller's total actions. The coordinator would be responsible for detecting and resolving any performance deficiencies such as when a local controller "forgets," does not scan the runways, or fails to coordinate with other controllers in the tower cab.

Safety Recommendation A-86-46 recommended that the FAA evaluate the need for local control coordinator positions at other major airports. The FAA initially rejected the recommended use of local control coordinator positions at O'Hare. Instead, the FAA implemented a 30-minute staffing overlap policy at both local control positions.

^{1/} For more detailed information read Special Investigation Report—"Runway Incursions at Controlled Airports in the United States" (NTSB/SIR-86/01).

After this action, the Safety Board became aware of two more operational errors in the Chicago O'Hare control tower, both of which resulted in less than standard ATC separation between two air carrier airplanes shortly after takeoff and both of which were attributed to the actions of the local controllers.

The first incident occurred on June 29, 1986, shortly after both flights had been cleared by the north local controller to depart O'Hare on different runways in accordance with instrument flight rules (IFR) clearances. The incident occurred at night, with very heavy traffic activity, and in visual meteorological conditions. Air Wisconsin flight 1749, a Fokker F-27 (AW 1749), departed from runway 4L and was cleared to fly a runway heading of 040°. Shortly thereafter, United Airlines flight 628, a Boeing B-727 (UA 628) was cleared to take off on runway 9L with an initial departure heading of 070°. When AW 1749 was about 1 mile northeast of the airport the controller cleared the flight to turn right to a heading of 070° to separate it from a second departure from runway 4L. This new heading for AW 1749 placed it and UA 628 on parallel departure courses about 1 mile apart with the United jet gradually overtaking the slower turboprop airplane. The north local controller stated that he intended to use visual separation between both flights until radar separation existed. However, he transferred communications and control of both flights to the radar departure controller before implementing the required visual separation criteria. Shortly thereafter, the conflict alert was activated both in the tower and the radar room. The conflict occurred about 5 miles east of the airport. The radar departure controller then assigned new headings to provide the required separation between the airplanes.

The north local controller had assumed his position about 10 minutes before the incident. The staffing overlap policy, implemented by the FAA in response to the Safety Board's recommendations, was in effect at the time. The policy required that the controller who had been relieved to remain at his position for 30 minutes to monitor local control operations and to act as an extra set of "eyes and ears" to prevent runway incursions. The "overlap" controller was present to monitor communications and traffic on the airport; however, he did not detect the operational error as it was developing. He stated that shortly before the incident the north local controller and he had been discussing the meaning of the word "wilco" which was used by a landing flight and that this inopportune distraction may have contributed to the operational error.

The second operational error occurred on July 2, 1986, after two flights had been cleared by different controllers to depart O'Hare on different runways in accordance with IFR clearances. The incident occurred about 2 miles west of the airport at an altitude of 2,500 feet with light traffic and both airplanes were in instrument meteorological conditions. The tower controllers for the day shift were in the process of relieving midnight shift controllers. Noise abatement procedures 2/ were required to be used until 0700 3/ unless suspended earlier by a supervisor due to heavy traffic or safety considerations. Although traffic was light, the midnight shift controller, who was working north and south local positions combined, had stopped using noise abatement procedures

2/ Facility procedures to be used between 2200 and 0700 to provide noise relief to communities around O'Hare. The procedures include the use of preferential arrival and departure runways and for departures, specific headings to be flown until reaching 3,000 feet. For departures from runway 32R, airplanes are cleared to fly a heading of 300° until 3,000 feet and for departures from runway 27L to fly a heading of 290° until 3,000 feet.

3/ All times are central daylight time and based on the 24-hour clock.

before being relieved about 0638. The first day shift controller assumed the combined local control position from the midnight shift controller who indicated that he was not using noise abatement procedures. The new day shift controller then cleared the flight to takeoff on runway 32R and to make an immediate right turn to a heading of 040° (non-noise abatement). At 0646 the local controller positions were separated and the first day shift controller remained at the south local control position, and a second day shift controller assumed the duties of local control north. The new north local controller stated that during the position relief briefing the south local controller did not state whether she was applying noise abatement procedures; however, she did point out that the turbojet airplane taking off on runway 32R was cleared to make an immediate right turn to 040°. The controller, who assumed the north local control position, stated that based on the clearance given to the airplane departing on runway 32R, he concluded that noise abatement procedures were not being applied. Also, during the briefing the south local controller agreed to coordinate any westbound departures that she had with the north local controller who was responsible for all airspace from 270° clockwise to 090°.

However, on the next departure from runway 27L, the south local controller cleared United Airlines flight 762 (UA 762), a Boeing B-737, to fly a noise abatement heading of 290° after takeoff. She did not coordinate this departure heading with the north local controller. Almost simultaneously, the north local controller cleared Western Airlines flight 89, a Boeing B-727 (WA 89), for takeoff on runway 32R with an immediate left turn to 270°, the normal non-noise abatement departure procedure. Both airplanes were cleared to contact the radar departure controller. The two airplanes converged about 2 miles west of the airport to within about 400 feet vertical and about 1/2 mile horizontal separation. The two local controllers did not observe the conflict because of the low ceilings. The departure controller recognized the conflict based on radar returns and cleared UA 762 for an immediate left turn to resolve the conflict.

Although on July 9, 1986, the FAA implemented a staffing change in the O'Hare control tower that required the use of one local control coordinator in the tower during periods of moderate to heavy traffic (which partially fulfilled the intent of Safety Recommendation A-86-45), the Safety Board learned that there had been 14 ATC operational errors at O'Hare between January 1 and July 2, 1986. The analysis of these 14 operational errors and the investigation of the June 29 and July 2 incidents prompted the Safety Board to focus on deficiencies related to ATC operations that, although not unique to O'Hare, are believed responsible for the steady increase in operational errors at the facility. These deficiencies included problems with the general adequacy of the air traffic controller staffing level, the merit promotion and supervisory selection process, the flow control program with regard to its ability to cope with peak traffic loads, controller recertification, and the quality assurance and training program. The Safety Board also reviewed the FAA's actions to implement previously issued Safety Board safety recommendations.

Air Traffic Controller Staffing and Qualifications

Safety Board investigators reviewed the staffing levels and qualifications of the controller work force at O'Hare during the investigation of the June 29 and July 2, 1986, operational errors. The FAA was requested to provide statistics on the number of authorized controllers and the number of actual controllers and their qualifications at O'Hare at the time of the incidents. The FAA's two distinct sources on the authorized number of controllers for O'Hare are the fiscal year (FY) budget document and a separate authorization issued by the Great Lakes Region. The FAA's FY 1986 budget authorized 81

full performance level (FPL) 4/ controllers while the Great Lakes Region, in a memorandum dated June 13, 1986, authorized 94 FPL controllers for O'Hare. The FAA provided staffing data which indicated that, as of July 30, 1986, there were 52 FPL controllers and 39 developmental 5/ controllers at O'Hare. The 52 FPL controllers was significantly below the number of 81 authorized FPL controllers (or 94 FPL controllers depending on the source used) and indicated a serious staffing problem. The percent of actual to authorized FPL controllers at O'Hare (64 percent using FAA's figure, 55 percent using Great Lakes Region's figure) is far below the 73 percent levels that existed at the 54 busiest facilities in the continental States as reported in the General Accounting Office (GAO) Report 6/ of September 30, 1985.

The low number of FPL controllers at O'Hare required the facility to make several adjustments in order to meet their operational shift coverage. One of these adjustments required both facility staff specialists and staff officers to work operational positions for a substantial amount of time. For example, during June 1986, staff specialists and staff officers spent 37.9 percent and 17.7 percent of their time, respectively, working on operational positions. Also, on-the-job training (OJT) had been curtailed to provide adequate position coverage, particularly during the summer and other prime time vacation periods. Finally, these staffing problems required many controllers to work at their positions for excessive time periods before receiving a relief break. For example, the facility staff officers stated that it is desirable for controllers to work no more than 2 hours on a control position before receiving a break. However, the facility manager stated that his informal checks of time on position showed that on busy and peak traffic count days some controllers had been required to work from 4 1/2 to 5 hours on position before being relieved.

The facility manager stated that staffing of FPL controllers has been a continuous problem at O'Hare. He stated that the percent of actual to authorized FPL controllers generally ranged from 55 to 60 percent even before the ATC strike in August 1981. For example, in July 1981, the facility was authorized 113 FPL controllers. The actual number of FPL controllers was 73 (65 percent of authorized) and there were 27 additional developmental controllers in various stages of training. The facility manager believed that the staffing rate has remained low because of factors such as the difficulty in recruiting controllers to work the high volume and complex traffic at O'Hare, the reluctance of controllers to live in the severe winter weather of the Great Lakes area, and the high rate of training failures and turnover among the controllers. He further stated that the curtailment in availability of the funds for permanent transfer during the first part of fiscal year 1986 had an adverse effect on recruiting controllers for the facility.

The Safety Board believes that there is a staffing problem at O'Hare. The percent of actual to authorized FPL controllers is substantially below the level at most other major terminal facilities. This low number of FPL controllers results in several other problems including discontinuing OJT, using facility staff to work operational positions, and

4/ At the O'Hare control tower facility, a full performance level controller is a controller who has received a facility rating to work all positions of operation in the tower cab or the radar approach control.

5/ A developmental controller is not qualified at all control positions in a terminal facility; however, a developmental controller may be certified and proficient at some or most of the positions.

6/ United States General Accounting Office, Report to the Secretary of Transportation—"Serious Problems Concerning the Air Traffic Control Work Force" (GAO/RCED-82-121).

requiring controllers to work long periods on position before a relief break. In part, this staffing deficiency is the consequence of intermittent training which was sometimes suspended for extensive periods, particularly during the summer vacation period.

Once developmental controllers receive certification on two control positions they were then, quite frequently, assigned to control positions for shift coverage. As long as they were working operational positions, the developmental controllers were unable to complete their training for certification on the remaining positions required to achieve FPL status. Also, since facility staff personnel, including training specialists, were required to work operational positions frequently, they were not available to perform their assigned duty which is to administer the facility's training program. The end result was that developmental controllers did not progress through training to the FPL rating in an orderly and expeditious manner.

The Safety Board believes that the FAA should conduct a comprehensive review of the controller training program at O'Hare. This review should focus on adopting procedures which would allow controllers to receive concentrated OJT until achieving FPL status. The Safety Board believes that developmental controllers who are in training for FPL certification should not be used extensively to meet operational shift coverage except during short periods of severe personnel shortages.

Supervisor Selection Process

During the investigation of the June 29 and July 2 operational errors, the Safety Board learned that the same tower cab supervisor was on duty when both incidents occurred. The supervisor did not observe or detect either operational error as it was developing. He stated that during the June 29 incident, he was involved with general supervisory duties and did not recall his exact position in the tower when he was questioned by the area manager. The cab supervisor was also the crew supervisor of the controller who was controlling both airplanes.

On July 2, the supervisor was the first person from the day shift to arrive in the tower cab. He received a briefing from the midnight shift controller and was informed that noise abatement procedures were not being used. Even though the supervisor was aware of facility policy directing that noise abatement remain in effect until 0700 or until terminated by a supervisor, he took no action. He stated that it was not unusual to discontinue noise abatement procedures prior to 0700. The supervisor stated he did not observe the position relief briefing between the midnight shift controller and the day shift controller or between the two day shift controllers when the local control position was separated. He stated that it was not his normal practice to actively monitor position relief briefings. The Safety Board believes that these discrepancies indicate a lack of effective supervision.

The supervisor stated that he became aware of the incident when he overheard both controllers discussing a "problem" they had and, at the same time, he received a telephone call from the radar room concerning the separation between UA 762 and WA 89. Both controllers involved in the July 2 incident were on the tower supervisor's crew. The supervisor was a newly appointed tower supervisor; he had been selected for this supervisory position in January 1986 and had just been certified on the local control positions 2 weeks before the June 29 operational error. His previous experience was as a controller at the Chicago Air Route Traffic Center and more recently, for 8 years, he was a controller at the O'Hare terminal radar control facility (TRACON). He had had no previous FAA tower cab experience.

The Safety Board believes that the supervisor should have been more effective in monitoring the overall safety of operations during the time that both operational errors occurred. His performance probably was attributable to his limited experience in the tower cab. The Safety Board is concerned that this individual was selected as a tower cab supervisor at the nation's busiest airport without any prior tower cab experience. ^{7/} He then received OJT from tower cab controllers and in a relatively short time was certified on all tower cab control positions. He then was assigned as a tower cab supervisor and became responsible for the controllers assigned to his crew some of whom had provided him with his tower cab training. Shortly thereafter, he and three controllers on his crew were involved in two operational errors. The Safety Board believes that this supervisor did not have sufficient background and experience to be a supervisor at the O'Hare tower cab and that the FAA should review and develop its personnel selection and promotion programs at O'Hare to make sure that applicants have previous tower cab experience to qualify for selection to a supervisory ATC position in the tower cab.

Flow Control Programs

During the investigations of the June 29 and July 2 operational errors, Safety Board investigators became concerned about heavy air traffic demands at O'Hare with regard to controller performance and workload. The FAA was requested to provide statistics on the number of operational errors which had occurred nationally in terminal facilities during the first 6 months of 1984 and 1985. This data reveals that operational errors had decreased nationally from 204 in 1984 to 193 in 1985. During the first 6 months of 1984, O'Hare recorded seven operational errors. The facility recorded six operational errors during the first 6 months of 1985, a decrease consistent with the national decrease. Of concern to the Safety Board, however, was that as of July 2, 1986, O'Hare had recorded 14 operational errors, which is significantly higher than any other Level V terminal facility.

In an effort to determine traffic complexity and volume, Safety Board investigators were briefed by the FAA on Flow Control Programs at O'Hare and their effect on the facility. Under the FAA's Performance Measurement System (PMS), standards were developed for major terminal facilities in the United States. Under PMS, engineered performance standards (EPS) were developed initially in 1974 to determine an airport's hourly capacity (acceptance rate) of traffic. This program was prototyped initially and implemented at six terminal facilities. The program has expanded in scope and focus to concentrate on air traffic flow management (flow control) in addition to performance measurement.

In determining each facility's EPS, that facility's statistical data are compiled. The data include runway configurations, number of aircraft handled, mix of traffic, and in some instances, large versus small aircraft. This information is used to produce a matrix which developed the acceptance rate under given conditions. This acceptance rate figure will change according to the runway configuration in use and whether operations are conducted in IFR or VFR weather conditions. This acceptance rate criteria is then

^{7/} In most terminal facilities, controllers regularly work in both the tower cab functions and the approach control functions, and they do not achieve FPL status until they have demonstrated acceptable performance in all functions. The O'Hare tower is a "split facility." Controllers are assigned permanently to either the tower cab or the TRACON and achieve FPL status in either. However, controllers assigned to the TRACON are not able to acquire tower cab experience without reversion to developmental status which would explain why the supervisor had not acquired experience in the tower cab at O'Hare before his selection as a supervisor.

approved by the Facility Manager, Regional Division Manager, and Air Traffic Division Manager. This information is made available to airlines and other system users to assist in aircraft scheduling or other aviation-related activities. These standards are only valid during peak periods of constant air traffic demand on all identified runways (configuration) with no capacity-limiting restrictions in effect. For example, O'Hare's current standards indicate a maximum EPS of 212 hourly operations in VFR conditions (72 arrivals/140 departures). This EPS involves crossing runway configurations with two runways dedicated for arrivals and four runways dedicated for departures. The FAA acknowledged that existing movement areas would quickly become saturated, which would preclude prolonged use of this configuration.

During IFR conditions, using parallel Category IIIA ILS runways, the EPS for O'Hare would vary from 65-100 depending on the arrival and departure mix. A review of random daily PMS Summary worksheets for the first 6 months of calendar year 1986, which were provided by the O'Hare ATC facility, disclosed that the applicable EPS was never significantly exceeded. For the most part, the hourly traffic count ranged from 95 to 105 percent of the applicable EPS standard for the runway configuration in use. Safety Board investigators were told by FAA that the capabilities of typical air traffic controllers to safely handle various traffic flow complexities are not directly considered during the development of these standards. The Safety Board recognizes that even if the facility is fully staffed with qualified controllers and equipped with the most advanced automation system, the number of aircraft which could be accommodated in a volume of airspace or cleared past a given position during a defined period of time would be limited by the prescribed separation between aircraft. However, the Safety Board believes that the FAA should review the methodology used to establish airport EPS at Chicago's O'Hare Air Traffic Control Facility to ensure that manning levels and air traffic controller performance limitations are accounted for appropriately and that the controller team capabilities are not exceeded during peak traffic periods.

Additionally, the Chicago O'Hare airport is designated a high density traffic airport under Federal Aviation Regulations (FAR), Part 93, "Special Air Traffic Rules and Airport Traffic Patterns." These rules, known as the High Density Rule, apply to the maximum hourly number of allocated IFR operations (takeoffs and landings) that may be reserved for specified classes of users (air carriers, commuters, other) for that airport. However, in accordance with FAR 93.129 and 93.133, this rule does not apply to operators of nonscheduled flights if they can be accommodated safely by ATC or between the hours of 2115 to 0644. The FAA imposed this program on a trial basis in 1969, and it became permanently effective in 1973.

In accordance with policy announced by the FAA at the time of adoption, this rule is periodically reviewed to determine if these quotas are accurate or whether modification is necessary to reflect changing circumstances. On a petition for rulemaking filed on September 7, 1981, by United Airlines, there were 111 comments made or submitted at the public hearings on the proposal to rescind the High Density Rule as it applied to the O'Hare International Airport. A majority of those comments favored rescinding the rule, although a large number opposed the proposed action. A summary of that petition was published in the Federal Register on December 28, 1981, (46 FR 82664) and the comments received were discussed in Notice No. 83-2. Prior to April 1984, the High Density Rule for O'Hare had been 135 IFR operations per hour. Following an evaluation of the comments, the FAA increased the quota to 155 operations per hour at O'Hare based upon "airport and air traffic system changes since the rule was first promulgated," rather than rescind the High Density Rule.

The Safety Board is aware of a current 13-year expansion program at O'Hare, financed by the city and the major air carriers, which is expected to increase passenger handling capacity from approximately 49 million at present to 80 million annually by 1992 without adding new runways to the airport complex. Although using larger airplanes may accommodate this expected increase in passenger demand without a corresponding increase in hourly operations, there is evidence to indicate that the airlines will request the FAA to increase the current criteria of 155 operations per hour in the future. Therefore, the Safety Board is concerned that potential IFR traffic volume could attain an hourly level which could exceed the controllers' capabilities or expected performance in a complex environment. Of nine available runway configurations at O'Hare, seven configurations involve the use of crossing runways. This complexity is compounded during adverse weather conditions, crosswind conditions, or other abnormalities which would otherwise affect the normal operations of the airport.

The Safety Board believes that the FAA should review the criteria used to establish the current High Density Rule as it applies to O'Hare Airport to ensure that controller performance is considered and controller capabilities and experience are not exceeded during heavy and peak traffic periods.

Controller Recertification and Quality Assurance and Training Program

During the investigation of the June 29 and July 2 operational errors, Safety Board investigators became concerned about the procedures used to recertify the controllers who had been involved in the operational errors. The investigators determined the procedures were not in accordance with those required by the FAA's Facility Operation and Administration Handbook, 7210.3G (Facility Handbook). In both incidents, neither the facility quality assurance and training staff, nor the controllers' immediate supervisor contributed to or participated in the recertification process. Also, the training files of the controllers did not document the employee's role in the operational error; the actions that were discussed with the employee to preclude a repetition of the error; the remedial training that was completed, including an over-the-shoulder examination; and the requalification of the employee to return to operation duty. All these items should be recorded in the employee's training file according to the FAA's Air Traffic Training Handbook, 3120.4G.

The local controller who was involved in the June 29 incident was also involved in the operational error on May 17, 1986, in which a USAir DC-9 and an American Airlines B-727 nearly collided during simultaneous takeoffs on different runways at O'Hare. Following the May 17 incident, the controller was removed from operational duty. He then received 6 1/2 hours of over-the-shoulder training under the direction of his immediate supervisor. This training took place over a period of 10 days with the controller having been monitored on the local control position during periods when the traffic density was heavy to very heavy and the control complexity was difficult to very difficult. The controller was subsequently requalified and then recertified for return to operational duty on May 27, 1986.

On June 29, 1986, the controller was involved in another operational error. He was removed again from operational duty. Two days after the incident he received training on the local control position for about 1 1/2 hours while under the guidance of another FPL controller. Following this training, the controller's performance on the position was rated satisfactory, and he was recertified and approved to return to operational duty by another tower supervisor who was not his immediate supervisor. The controller was not counseled about the incident by any of the facility's quality assurance and training staff, and his immediate supervisor was not involved in any part of his recertification.

Safety Board investigators were advised that immediately following the July 2, incident, the area manager conducted a preliminary investigation which included listening to the communications tapes and interviewing the controllers. As a result of his investigation, the area manager removed both the north and south local controllers from operational duties. Then, just 2 hours after the incident, the area manager made arrangements with the tower supervisor to conduct over-the-shoulder evaluations of both controllers on the local control positions. The evaluations were monitored by two other FPL controllers and the area manager, who was in the tower part of the time but did not wear a headset to listen to the radio communications. The area manager received a recommendation for recertification from the two FPL controllers who were monitoring the decertified controllers and then requalified and recertified both controllers for return to operational duty. Once again, the facility's quality assurance and training staff and the controllers' immediate supervisor did not participate in the recertification process.

The Safety Board is concerned that the process to recertify controllers who have been involved in an operational error at O'Hare is not standardized and is not in accordance with requirements of the FAA's Facility Operation and Administration Handbook. Specifically, the Safety Board is concerned that: the immediate supervisor of each controller did not participate in the recertification process; the facility's quality assurance and training staff did not participate in any of the recertifications; FPL controllers conducted over-the-shoulder evaluations instead of appropriate supervisory personnel; and the recertification training was not recorded in the employee's training file on a timely basis.

In one case, the area manager conducted the recertification actions; in another case, the controller received only 1 1/2 hours of training after his second operational error in a month, while in another case both controllers were recertified only a few hours after the operational errors occurred. The Safety Board believes that the FAA should review and revise as necessary the quality assurance program at O'Hare to make sure that controllers who have been involved in an operational error are counseled, trained, and recertified as required by the Facility Handbook and that controller's training records are updated to reflect these actions.

Review of Previous FAA Evaluations

To further examine the Quality Assurance and Training Program at O'Hare, Safety Board investigators reviewed two FAA evaluations that were completed at the facility during the past year and a half. The first evaluation, a Management and Operational Effectiveness Evaluation, was conducted from May 13 through 17, 1985, by the Quality Assurance Staff (AAT-60) from Washington headquarters. The evaluation report listed numerous problems. Of particular note under the managerial effectiveness section was problem number 5 which stated: "The facility has not implemented a quality assurance program as required by 7210.3G." There were further problems identified as relating to operational effectiveness which included nonstandard inter- and intra-facility coordination between controllers, use of improper ATC phraseology, incorrect application of visual separation by local controllers, and incomplete position relief briefings and transfer of position responsibility.

The second evaluation, an Operational Error Prevention Evaluation, was conducted from April 28 to May 8, 1986, by the Great Lakes Region Quality Assurance Staff (AGL-506). The evaluation report listed operational problems which included use of nonstandard ATC phraseology, failure to use proper position relief procedures, incomplete coordination between controllers, and a lack of supervisory involvement in both the tower

and TRACON. Training problem areas noted that crew briefings on previous operational errors were conducted as much as 4 to 6 months after the error occurred; tape talks were not conducted as required; training folders were as much as 6 months out of date and did not contain causal factors or documentation about controller recertification after involvement in operation errors; and poor OJT pertaining to coordination between controllers.

The Safety Board is concerned that many of the managerial, operational, and training problems identified during the 1985 evaluation had not been corrected or resolved a year later. Of particular concern is that many, if not all of these deficiencies — inadequate coordination between controllers, incomplete position relief briefings, lack of supervisory involvement, improper application of visual separation, inconsistent use of facility policies such as noise abatement, and deficient training programs and documentation — were contributing factors to the four operational errors that the Safety Board investigated at O'Hare during 1986. These same problems were also involved in several of the other 10 operational errors that have occurred at O'Hare from January 1 to July 2, 1986.

The Safety Board believes that the quality assurance and training program at O'Hare is inadequate. There is no standardized oversight of the quality of performance of the controllers and the controller initial and recurrent training is ineffective. The Safety Board learned that the staff assigned to the program were routinely being used to provide operational shift coverage. There were four individuals assigned to quality assurance and training at O'Hare—the assistant manager for training and three quality assurance and training specialists; however, they were not able to perform their assigned duties. One specialist was detailed to the Regional Office full-time to process ATC academy graduates assigned to O'Hare, and another specialist was used 40 hours per week to work operational control positions. The remaining two specialists also were used to meet shift coverage about 25 percent of their available time. Clearly, these staff members were not being used to make the quality assurance and training program effective and efficient. The Safety Board believes that the FAA should review this program to determine that the assigned staff is used effectively in support of the quality assurance and training programs and that the highest possible level of quality controller performance is maintained at O'Hare.

The Safety Board is aware that after its investigation of the June 29 and July 2, 1986, incidents, the FAA dispatched a facility evaluation team to review the O'Hare control tower operation. The FAA team identified 12 areas in which deficiencies existed, and in September 1986 established an action plan to correct the deficiencies.

The Safety Board generally agrees that the deficiencies identified in this latest FAA evaluation are similar to those identified and discussed in this letter. Nonetheless, the Safety Board believes that the occurrence of 11 more operational errors at Chicago O'Hare between July 3, 1986, and January 30, 1987, justify the highest level of FAA attention and action.

Therefore, the National Transportation Safety Board reiterates Safety Recommendation A-86-45 and further recommends that the Federal Aviation Administration:

Implement an improved and more effective air traffic controller training program at the Chicago O'Hare Air Traffic Control Facility to train developmental controllers to achieve the full performance level rating in a timely manner. (Class II, Priority Action) (A-87-3)

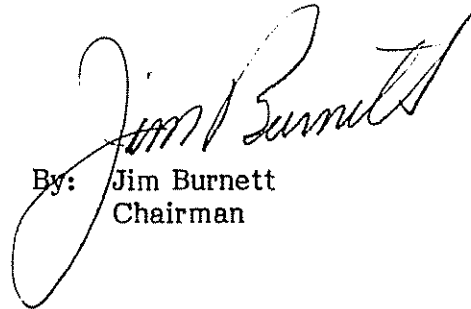
Review its personnel selection and promotion programs at the Chicago O'Hare Air Traffic Control Facility to make sure that applicants have previous experience working in a tower cab to qualify for selection to a supervisory air traffic control position in the tower cab. (Class II, Priority Action) (A-87-4)

Review the methodology used to establish airport Engineered Performance Standards and the criteria used to establish the "High Density Rule" at the Chicago O'Hare Air Traffic Control Facility to ensure that air traffic controller staffing levels and performance limitations are accounted for appropriately and that the air traffic controller team capabilities are not exceeded during peak traffic periods. (Class II, Priority Action) (A-87-5)

Review the Quality Assurance and Training Program at the Chicago O'Hare Air Traffic Control Facility to make sure the objectives of the program are met and the assigned staff is used effectively to support the program. (Class II, Priority Action) (A-87-6)

Regularly monitor the Quality Assurance and Training Program at the Chicago O'Hare Air Traffic Control Facility to require that air traffic controllers who have been involved in an operational error are counseled, trained, and recertified as required by the Facility Operation and Administration Handbook 7210.3H and that appropriate entries to reflect these actions are made in the controller's training records. (Class II, Priority Action) (A-87-7)

BURNETT, Chairman, GOLDMAN, Vice Chairman, LAUBER and NALL, Members concurred in these recommendations.

A large, stylized handwritten signature in black ink, appearing to read "Jim Burnett". The signature is written in a cursive, flowing style with a large initial "J".

By: Jim Burnett
Chairman