Airport Sanitation

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AT the new International Airport in Miami, Fla., the Dade County Health Department has assigned to full-time duty a sanitarian, Martin Donovan, with as much responsibility for the health, comfort, and safety of the passengers as any pilot, monitor, stewardess, or ground crew. The airport is believed to be the only one in the United States with a sanitarian on duty full time.

Sanitation services were considered early in the planning of the airport by the Dade County Port Authority, established in 1945.

Even before the opening of the airport, in December 1958, Donovan spent half of his time on the installation and operation of the aircraft catering kitchens and the facilities for storing, preparing, and serving food for employees and other patrons.

Description of the Terminal

The field, on 3,000 acres in the northwest corner of Miami, handles 10 percent of all the air traffic in the Nation. During peak seasons, it employs between 25,000 and 30,000 people. In 1959 its 74 gates in 6 loading and unloading piers admitted 4,248,064 passengers, 19,020,336 pounds of airmail, and 206,273,548 pounds of express and freight. Lines using the airport included 7 domestic and 26 international carriers, 34 irregular carriers, 2 scheduled air taxis, and 1 irregular air taxi. At peak periods, the control tower handles as many as three plane movements in 1 minute.

The new terminal building and new airport facilities so far have cost more than $26,435,000. The complete planned program is expected to cost more than $8,000,000 more. A road network within the airport has cost over $3,500,000. Directional signs alone have cost $57,500.

The seven-story terminal, entirely air-conditioned, is topped by a control tower. It provides passenger service areas and administrative offices on the first two floors. The next five floors house port authority, airline, and governmental administrative offices as well as radar control equipment areas. The Airport Hotel, five floors of hotel space with 250 rooms, is a separate building which fronts the terminal and has the second level overhang of the terminal as its foundation.

Three completely independent generators, all underground, supply electricity. The load automatically shifts from one to the other in event of power failure. In the unlikely possibility that all three should fail simultaneously, small generators, capable of operating indefinitely, will take over emergency functions.

On the ground floor of the terminal building, central control boards constantly record and analyze the electrical system and warn of impending functional difficulties.

An indirect expansion system of air conditioning regulates temperature automatically throughout the building. Chilled water, circulated through miles of concealed pipes, blows to more than 100 individual units distributing cool air.

An underground system of fuel hydrants feeds either jet or conventional engine fuel at

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Mr. Alan Stewart, port authority director, Dade County Port Authority, supplied port authority statistics for use in this paper.

the rate of 25,000 gallons per hour to aircraft waiting on the ramp.

Sanitation in the Jet Age

Two sets of triturators are manned from 8:00 a.m. to 5:00 p.m., the peak periods for discharge of waste collected by soil carts from aircraft. Triturator rooms are used exclusively for emptying, cleaning, and chemical treatment of soil trucks and portable soil buckets. Triturator rooms receive hot and cold water from Clayton flotation tanks under pump pressure. A physical air break between the city water service line and the feeder for the flotation tanks eliminates any possibility of contamination of the city water supply through back siphonage.

All garbage and waste are stored in metal flytight, leakproof, rollaway containers, in sizes varying according to need. Garbage and waste at present are picked up and hauled away once or twice a day by three private contractors, under supervision of the waste division of Dade County. Additional control is also vested in the county health department and the port authority.

Potable water is fed to planes from spigots on the ramps, either through water carts or through direct hose connections to the aircraft watering system. The spigots are restricted to this use only and are so labeled.

Early Planning

As plans for the terminal were in their closing phase, the county health department requested that blueprints be submitted to it for examination by the various agencies concerned. A series of meetings were then held jointly by the Public Health Service, Florida State Board of Health, Dade County Health Department, Florida State Hotel and Restaurant Commission, Dade County Building, Zoning and Plumbing Department, and the architects.

As a result of the study by these groups, several changes and modifications were effected in the types of sanitary construction. The plans, revised according to these recommendations were then resubmitted in triplicate to the Public Health Service, the State board of health, and the county health department.

After construction was underway, the county health department director assigned Donovan to the terminal on a part-time basis. He daily examined plumbing installations, equipment installation in the triturator rooms, employee and public restroom facilities, food and beverage installations, airline servicing areas and intended watering points, ventilation and air-conditioning systems, as well as other phases of construction that related to public health and safety.

Any deviation from the plans or the codes covering the construction as it related to health and safety aspects was called to the attention of either the architect or the contractor or both.

Shortly before the formal opening of the new building in December 1958, the county health department assigned the sanitarian to full-time duty at the airport. This duty extends beyond responsibility for assuring that waste disposal, potable water supply, catered airline meals, meals for airport employees, and removal of wastes from aircraft chemical toilets and other facilities are operated without hazards to health and safety. It is concerned also with health cards for food handlers; rodent and insect control; animal quarantine; inspection of aircraft galleys, public drinking fountains, restaurant dishwashing and glass-cleansing equipment, and frozen food storage; vigilance against contamination of water supply; and intermittent emergencies.

Sanitarian on the Job

The airport sanitarian applies two codes. The first, the Florida State Sanitary Code, governs retail establishments in the terminal and the Consumer Service Building as well as the Airport Hotel, and restaurants, lunchrooms, cafeterias, juice stands, and liquor bars. The State code also permits control of insect and rodent problems, public and employee restroom facilities in the terminal and on the airport, sewage and waste disposal, and public water supplies.

The second is the "Handbook of Sanitation for Airlines" (PHS Publication No. 308) which notes provisions of Public Health Law 410 for the prevention and the spread of communicable diseases in interstate commerce.

Under this law, the sanitarian inspects and certifies catering companies that supply aircraft. He sees that the removal and handling of sewage and other refuse from aircraft is satisfactory. He protects the servicing areas for aircraft, especially watering points, and he inspects the maintenance and condition of aircraft water systems, galleys, and restrooms.

For example, a refurbishing company received an order to install galleys in some new prop-jet aircraft. The manufacturer installed the equipment in the first plane without submitting the plans to the Public Health Service regional office, as the contract specifically directed. When installation was completed, the airport sanitarian was requested to inspect it. He reported that the construction failed to meet requirements for easy cleaning and left many areas open to insect harborage and breeding. The manufacturer was ordered by the Service to rework the installations and bring them up to the required specifications.

The county health department and the airport sanitarian work closely with the regional office of the Public Health Service at Atlanta, particularly with respect to plans for new equipment to be used for food or beverage service aboard aircraft or in flight catering kitchens, and new equipment used in servicing aircraft drinking water systems or toilet systems. The airport sanitarian provides on-the-spot reports for the Public Health Service. He also obtains plans or designs for this type of equipment from the manufacturer or the operator and forwards them to the regional office for comment, recommendations, or approval.

The sanitarian reports through local and State channels to the regional office of the Public Health Service on certification inspections. These reports cover two specific activities: airline catering points sanitation, and airline servicing area sanitation. Inspections include the premises and procedures in places furnishing inflight meals and other food services to airline passengers and personnel; the removal of sewage and other wastes from the planes; and the general sanitation of the servicing area, including the potable water transfer and storage.

When Donovan finds that sanitary regulations are being violated, the Public Health Service is notified. If the violator is a supplier for the airlines, the regional office then notifies all carriers concerned by telephone or telegraph. After the violation has been corrected, the airlines are notified again. Periodic inspections determine whether certified suppliers remain on the Interstate Carrier Classification List.

Typical of Donovan's relations with other regulatory agencies was his survey, conducted with the Dade County Building and Zoning Department, to find and correct plumbing faults. The survey located 115 cross connections, for the most part submerged inlets in the aircraft plating shops. These hazards in acid and dye vats posed a threat of back siphonage to the municipal water supply. The cross connections were corrected by physical air breaks where possible or by installation of approved vacuum breakers and introduction of air under pressure where needed for agitation in the tanks.

Management Relations

The following is a practical example of working relationships between the airlines and the county health department. Donovan objected to the drinking water facility in the aft galley of one model of aircraft. The plastic tubing used in transferring drinking water from the galley portable water container through the water spigot was fixed so as to obstruct cleaning and sanitation. At the same time, handling of the tube as it was threaded to the water container invited contamination.

It was suggested that the airline explore the possibility of using single service tubing, as on bulk milk dispensers. After discussion with the airline chief of food and catering service and the project engineer, the engineering department designed a spring tension clip-type handle to be used in connection with single service tubing and a model has been ordered for testing. If the tension spring clip operates satisfactorily in flight, the airline will convert all water containers in question to single service tubing.

Complaints by the public or employees concerning sanitary matters are reviewed by the director of the port authority, his staff, and the

sanitarian. The airlines personnel confer with Donovan on matters pertaining to aircraft galley construction, potable water trucks, soil carts and trucks, food and drink equipment used in aircraft galleys, hygiene for personnel, and food employees' food handler training programs, as related to such service aboard aircraft.

Full-time duty at the airport goes a long way to curb or prevent deliberate violations of sanitary practice by persons intent on shortcuts, whether motivated by the demands of peak traffic conditions or by a misguided sense of economy. Donovan's surveillance, characterized by daily visits, is supplemented by occasional visits on nights, Sundays, and holidays.

The informal reporting of insanitary conditions by employees is a valuable adjunct to airport sanitation, whether it concerns defective locks on toilet stalls or industrial hazards in aircraft maintenance and overhaul hangars. The nine terminal supervisors and the ramp supervisors also are alert to sanitation practices and conscientious about them.

Donovan has public education duties, too, as when he is requested by Consumer Service Building tenants to be a member of the welcoming committee at formal openings. His task is to acquaint the public with the sanitation features of the particular establishment being featured and of the terminal in general. He also consults with the representatives of the various unions representing organized labor employed at the airport.

Occasionally he acts as a guide, particularly on tours to flight kitchen operations.

When Donovan learns of protracted delays in flights owing to mechanical or weather conditions, and when high temperatures indicate possible spoilage of food without refrigeration, he orders food removed and replaced.

On one occasion, he observed and reported mosquito breeding on a roof area of the new terminal. Faulty construction had prevented drainage. The port authority corrected the condition.

The three main groups dealt with in respect to the airport sanitation, the terminal management, the airlines, and the tenants of the terminal, offer abundant evidence of their cooperation with the county health department.

The terminal management leases each of the two sets of triturator rooms to separate aircraft servicing companies operating on the field. In the contract it inserted at the request of the health department a requirement that each set of rooms have an attendant on duty for cleaning them and assisting operators of soil carts in dumping. Rooms are manned between peak hours of 8:00 a.m. to 5:00 p.m.

The port authority maintenance department promptly removes any rodent, fly, or mosquito breeding area on discovery by the health department.

Port authority regulations accept health department standards regarding the type and construction of garbage and rubbish hauling and storage equipment and mobile industrial feeding vehicles.

The management submitted for review by the health department the contract leasing concession for the cleaning and maintenance of the public areas of the terminal.

The management requires food and drink concessionaires to seek a health department review of their plans before they set up for business. It consults with the health department on all new or added construction.

The airline companies requested assistance of the county health department in the construction and design of potable water carts, potable water transferral systems, soil carts, food and drink equipment for aircraft use, and the sanitary maintenance of watering points and servicing areas.

Food and drink establishments bring in plans for construction and installation of equipment, and work with the department in training food handlers.

Unfinished Business

With an eye to future developments and to the principles of design and operation of airports, the following needs are indicated:

- Toilet facilities adequate for employees on the baggage concourse and on the piers.
- Storage space for supplies and equipment used by terminal cleaning contractors, a locker room for employees of the cleaning contractor, and convenient toilet facilities for such employees.

• Floor level waste basins to receive waste water from mops and heavy duty cleaning, in the absence of sewers.

• Hose bibs and drinking fountains along the baggage concourse.

• Hose bibs on ramps opening to ground transportation.

• Toilet facilities convenient for drivers in the taxicab pool.

• Suitable methods of moving garbage and waste from upper level to lower level holding and storage area.

• Facilities convenient for washing and sanitizing waste receptacles from aircraft galleys.

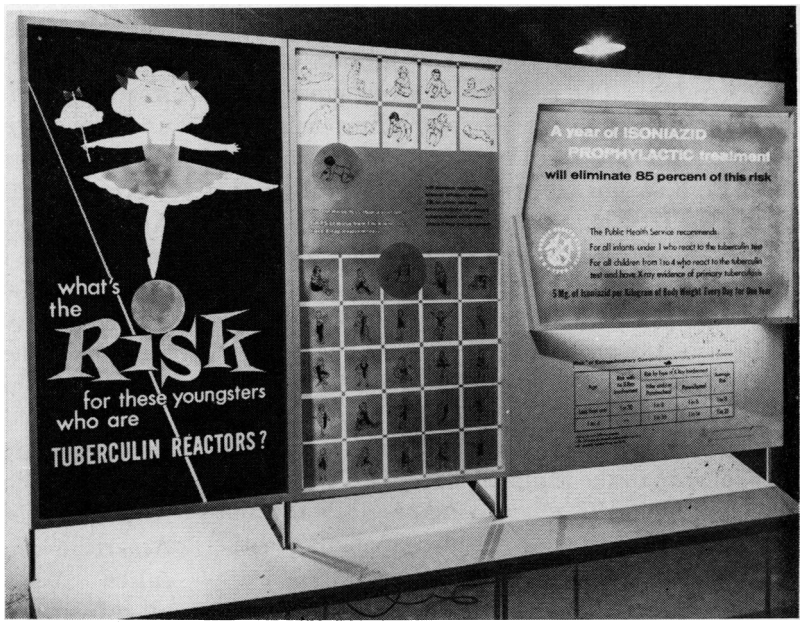
• A means of barring stray dogs from the airport and terminal buildings, and of barring all dogs, except Seeing Eye dogs, from eating and drinking places.

• Suitable food service for employees on the piers.

• A method of keeping out of the air-conditioning system the mists of oil released from jet engines. Films formed by the oil soil the terminal and contaminate the air unnecessarily.

exhibit

What's the Risk for Youngsters Who Are Tuberculin Reactors?



Specifications: A 3-panel exhibit on legs, fabricated of translucent Fiberglas and plywood with aluminum framing, 9 feet long, contained in 2 crates, shipping weight 440 pounds. One electrical outlet, 110 a.c., 1,000 watts, is needed for illumination.

Practically all the complications of primary tuberculosis can be prevented by the administration of isoniazid to infants and young children who are tuberculin positive. Because of the seriousness of the complications and of the demonstrated high risk, the Tuberculosis Program of the Public Health Service is recommending isoniazid prophylaxis for those infants and young children with special susceptibility. This exhibit is one of the means by which the program is making the recommendations known to physicians concerned with child health.

The information presented is based on a control study of 2,750 children, made by the Public Health Service in cooperation with pediatricians in 33 clinics throughout the United States. The study established that for children under 4 years who have asymptomatic primary tuberculosis the risk of extrapulmonary complications is high and that izoniazid prevents almost all of these complications. These findings as well as specific recommendations for preventive treatment are shown in the exhibit and are presented in an accompanying pamphlet which is provided free for distribution to physicians.

The exhibit is available without charge for display at national, regional, and other meetings or conferences of physicians concerned with child health. However, it must be manned by a physician and its availability will depend on whether this service can be obtained. Shipping costs for the exhibit must be paid by the borrower.

For further information write to the Tuberculosis Branch, Division of Special Health Services, Public Health Service, U.S. Department of Health, Education, and Welfare.