

Record Group TC6/ Series 1995

Massachusetts Port Authority Public hearing files, 1970-1986

Preliminary master plan meeting in Chelsea, April 30, 1973 Tape 2

(Continued from Tape 1)

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Richard Mooney: Not with the type of separation that we could get here. I'm not familiar with any operations like that. I think that a proposal that they have had in Los Angeles is when the winds are calm or when there's less than a, I forget offhand, a 10 knot wind that aircraft will take off downwind, so that what they've got is an aircraft landing from over the water and taking off over the water during certain hours it's late night. But this is a--- this is an opportunity that they have in Los Angeles, two reasons: one they have a very continuous prevailing wind there, and also the characteristic of the area is for the winds to drop very considerably at night, and also these runways are substantially further apart. They have parallel runways that are only seven to eight hundred feet apart, but they've got the two sets of them. So, they can't operate that way on those close parallels, but they can operate on one on each side of the terminal area but there has to be very---

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Jack Larson: They have to have that---

Mooney: They aren't--- I don't think those are going to be done so---

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Larson: They'd have to have instrument and they'd have to counter rotate the traffic. But I'm not sure whether at the present time the impact of noise is greater than a taking off or a landing airplane because the landing airplane is usually lower and the taking off airplanes higher so that the ambient noise on the ground is about even. But at any rate, all of these other runways route people--- route taking off aircraft over populated places whereas the seaward runway routes are taking off aircraft to seaward. So considering that those people vote too, I think that Chelsea would be in a fool's paradise to assume that aircraft will not continue to land, make their landing approaches, over Chelsea and in substantial numbers, particularly when the wind is from the east. Now so I do think that looking ahead 20-25 years for our schools here that it really is up to the Port Authority and the city of Chelsea to get together and solve the school problem. And I think that's--- I just wanted to ask another question. Has hovercraft been considered at all as a method of access to the airport from the city of Boston?

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Mooney: Well I can't say specifically on hovercraft, I know that the hydrofoil has and just plain other types of boats. Now actually because of the distance---

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Larson: Well the beauty of the hovercraft, of course, is that it can operate on your airport, deliver the passengers to the airplane and deliver them also to a dock in town, but I'd never seen it mentioned and I just wondered if it ever had been. There seems to be some particular problems with respect to patents on hovercraft and so forth and I---

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Mooney: I think probably that one of the biggest problem that we saw was not on the airport side but rather the on the city side. The question is to whether or not someone would go to a waterfront area. In the downtown area, of course, is the parking problem and the how do you get to that point. And like admittedly yes I---

00:04:03,500 --> 00:04:17,000

Larson: I could come from Weymouth Air Station also.

Mooney: Well but I think that---

Larson: Alright, I think that my point was just how dead is this parallel runway?

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Mooney: Well I don't know ---

Larson: I mean it's all there I think it's laid right out on the map.

Mooney: --- how dead you can make it. The fact is that it was on the plan for years and years and years. It was on from '59 when the port authority took over, and it was on when the state had it, it was on a piece of paper. It hasn't been built yet, and I'll have to admit that we were serious about it when we made the proposal and it hasn't gone any place and I don't think anyone's fighting in that direction. Now we obviously can't say that things couldn't change and people would change their minds 10 years from now, but just the staff wanting it or even the Port Authority wanting it does not make it necessarily possible and so the facts are that the there was a lot of opposition to it and it's as dead as dead can be at this time.

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Larson: Thank you.

00:05:29,360 --> 00:05:31,000

Callaghan: Are there any more questions or comments?

00:05:31,500 --> 00:07:20,080

Anna Cohen: I would like to ask just one question for my own enlightenment. I wonder why the planes fly so low. I live on [inaudible] and it seems to me that the, I have a loud voice, and it seems to me that the planes are practically on my roof, and of course they fly 24 hours a day. I'll stay up till 12-1 hoping that the planes will stop so that I can go to bed, but it doesn't do one bit of good. They're flying at three and four and six, and really I think that we should have some peace of mind. There should be some kind of a limit I'll make sure, and why are they flying so low? They're they--- I expect them to hit my roof or my tree any day, and they're continually, I have timed them, I would say which a minute between each plane that goes by my house. And it's really very unbearable and it's detrimental to my health. I'm a nervous wreck because I do try to stay up as late as I can hoping that they will stop flying. Now something should be done by the Mass Authority. There should be a limit to the flying. After all, I think if we had an industrial plant here in the city and they were a nuisance after 12 o'clock they would immediately be stopped now why can't we do something about the airlines? After all we are a community here I've been here myself over 50 years, and I don't want to move. I like this place, I know everyone, and I'm happy here. Now some--- I think that this should be taken into consideration, as the father has said, the human part of it. We have no objection to the airport I use the airlines I'm very happy with them, but we have to have some peace of mind here.

00:07:20:800 --> 00:07:29,000

Callaghan: Thank you very much. Would you give your name just to keep the---

Cohen: My name's Anna Cohen, I live at seven Cottage Street.

Callaghan: Thank you very much.

Cohen: I'm quite prominent here in the city. Thank you.

00:07:29,500 --> 00:12:14,000

Callaghan: Thank you. Well I wouldn't want anyone to think that the port authority is not concerned with human beings. Let me just cite a couple of things if I may. Number one, and we're not trying to make excuses, we're the airport operator we're the ones that--- we are the one that has to come and try to reconcile the operation of the FAA and the airlines, excuse me, and everyone else along with our own responsibilities, but we're assuming that burden and we're trying to do the best we can. Now we are not pretending that aircraft noise is not a darn disagreeable thing. What we are doing is trying to reduce it as much as we possibly can, and at the same time cooperate with the FAA and the airlines to make the airport as safe as possible and the safety of aircraft is the safety of people that are being overflown, so that the problem is a difficult one it is not solved as yet. Most of us believe that it is being solved, but I don't think enough effort was put into it ten years ago to have it in a tolerable situation today. But those who know the types of aircraft that are coming into operation: the 747, the DC-10, Lockheed

1011, will grant that these aircraft are quieter than the old aircraft: the 727's, and DC-9's, and the 707's, and DC-8's, so that there is that hope and general evidence that the aircraft noise problem is being resolved. Now at the same time, I trust that you won't mind if we speak of other people's responsibilities such as the consideration of a second major airport. We are not the ones to determine that there should be a second major airport. That is a responsibility of higher authorities. It is also the responsibility of higher authorities, federal government, to have research on quieting these jet engines, retrofitting the older aircraft with soundproof coverings, and to generally try to set standards of certification for new aircraft that are going to make it quieter. Now the port authority and the entire airport community sit around every month trying to do something in terms of either the control of ground noise taxing APU's, auxiliary power units, and ground power units and that sort of thing and in flight operations. But as I've said before, when you have diesel locomotives going over people's houses there's nothing that the port authority can do to make that a very pleasant thing. But we're here to let you know what we are trying to do, and I would ask your indulgence to take a look at a film which Dr. Daugherty has brought along which shows one of the tremendous responsibilities of the airport. The airport has to try to keep all of these aircraft operating in safe circumstances, and one of the one of the matters which we would want to make safer is the mixture of small aircraft and large aircraft. And the reason particularly, or one of the major reasons for this stole general aviation runway that you've heard spoken of tonight down at Bird Island Flats 3,800 feet, this runway down here, is to allow small aircraft, not just the very small but small and let's say medium-sized aircraft, and have the commercial aircraft on that particular runway. Dr. Doherty has a film which shows the hazards of the turbulence that these large aircraft build up, and perhaps you'd care to take a look at it for a few minutes.

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Dr. Doherty: Well as I mentioned I'm here representing Executive Airlines, I'm the director of safety for Executive Airlines, and I think that what I say now can apply just as well to other community airlines. Can we turn that film on please? The reason why we want that parallel runway, the small one that you saw not the one you've heard about talked about in the past, but the short take-off and landing runway, is so that our planes will not have to land and take off on the same runway as the large jets which are using 1533 and which you've heard flying over Chelsea tonight. You'll see here the wake of a DC-3. Now this is a relatively small airplane, and when this DC-3 goes by the, winds from the right to the left as you look at it here, after he goes by his vortices will be blown downwind to come across this smoke and you'll see the small tornadoes created by large sized airplanes as they take off and land. Now there's a fairly powerful air current there and the larger the plane that creates the jet vortices the longer it lasts. In the case of a 707 or 747 they last many minutes and later you'll see what happens when planes try to fly through the jet vortices of such aircraft. Here's another picture of just

vortices created by a relatively small transport airplane the DC-3. Now I don't want you to think I'm bringing up something that's just a maybe sort of a problem, it's a real problem in everyday aviation. Every day in aviation or every year many many lives are lost when small aircraft attempt to use the same runway as large planes because they fly through these vortices which without smoke are invisible you won't see them until they come over and strike the smoke. Now the Executive Airlines and the other commuter airlines in this region primarily use a plane called the Twin Otter, and so that you'll know that it's a real problem for the twin otter about 18 months ago a twin otter crashed at JFK killing the crew and passengers as a result of flying through one of these vortices. One of the things that I wish is that the, one of the speakers, the priest from Chelsea had been here because I could have assured him that the planes he heard taking off and landing and climbing up so quickly, weren't--- and making so much noise, weren't the STOL airplanes that he thought would be using this runway. A STOL airplane is one that takes off in a very short distance, not one that climbs very fast. In fact, our planes aren't great climbers. They don't climb nearly as fast as the jet airplanes which out climb us at a rate of five to ten to one. Here you see a much larger plane going by and you see a much more extensive smoke system from several points on a tower to show how much larger the vortices are created by this large aircraft. You won't see them until they get into the smoke. They'll come from left to right here, and very suddenly you'll see the clouds start to whip around, and if you were a plane landing that was caught in that vortex you could be thrown down the runway with quite a bit of force. And we of course have a very selfish interest in wanting to have that runway, but we think it's an overriding one. Whenever instrument conditions prevail at Logan Airport, we're forced to use the same runway as the large aircraft at a considerable hazard we think. This is just to show that all kinds of aircraft create them, however when small planes like a helicopter create them they don't last nearly so long. They're very violent at first, but don't last long the helicopter has gone by. You see how it's already started to dissipate, whereas with a large aircraft it persisted for quite a while. This one's good in a way, because it shows how the vortices have to go downwind, have to flow with the air, before they get to the smoke and create the disruption. That helicopter actually flew by some distance off to the left. And where you have your greatest hazard is in still air. If you've got--- if you've got a crosswind like this it blows them away from the runway, but when you have still air as you do in instrument conditions, the vortices lie right there in the runway at the very path that you're going to have to fly through. And during instrument weather you typically have a much stiller air than you do on clear days. They're going to show that here again in a minute and show how turbulent air will cause the vortices to disrupt. First they'll have a C-47, that's a DC-3 airliner, fly by and leave a train of smoke and calm air and you'll see how it lasts and that's the kind of air, you don't get calm air very often on clear days, but you'll see how long the trail of smoke persists on a day with still air, and it's the day with still air that we have to land on the same runway with the large aircraft. You can see what a smooth trail of smoke is leaving behind, and those vortices that are leaving behind are staying

right there surrounding that cloud of smoke and not drifting away. You'll see what a big help it is to a pilot to have rough air as you have on most clear days because the sun heats the ground and causes air to rise and dissipate the vortices, that's in the next flyby. Here's the flyby in the gusty air and you'll see that these vortices are being dissipated very quickly and this is the case on the clear day, but on the clear day we don't have to land on the same runway as the large aircraft. They're being dissipated much more quickly and blown away by the turbulent air from the ground. You can see some of that when you look at the across the ground and see the shimmering of the heat waves. Now the interesting part of this film is coming up after this flyby because you'll get to see what happens to airplanes attempt to fly in the core of these kind of wind currents. I've got to apologize a little bit for the quality of some of the film to come because it, some of it, was taken with videotape. Now this is a fairly large aircraft and this is the most startling example of wake turbulence here involving a large size aircraft, the rest are somewhat smaller. Here you see a 747 fly by and then a fairly large passenger jet's going to try to fly by after it, and you'll see the hazard that I'm speaking of because it is much more resistant to those vortices that you see created in the smoke. It's much more resistant than planes we fly. The camera's going to zoom back so you can watch the 737 try to fly through there. It's been a fair while now since that 747 went through, and you no longer can see the vortices in the smoke. The next sequence of films is to show how large size helps protect the aircraft from wake vortices. In the first case we're going to have a Convair 990, which is a four engine jet, follow the large aircraft. They're using a C5A, which is a military transport it's a very large plane and leaves substantial vortices in its wake, and you'll see this is really quite a large airplane. Now it's quite a ways out there, and in its wake is an attempt of a Convair 990 to fly through the vortices that this aircraft has left and they're fairly well marked by the plume that the engines have left behind. It's flying from three and a half to four and a half miles behind the C5A. It bounces around a fair amount, but it never really gets upset. Now if you're a passenger on that plane you might get pretty queasy, but in terms of controlling the plane the pilot's able to do it. And that's why runway 15 and 33 is safe for the large planes to use because they can get along with each other fairly well, even though there are substantial wake vortices and even though the pilot has to get pretty busy sometimes during a landing because of these air currents, for a large plane it's not that big a hazard. You can see that this plane can keep control of itself pretty well. Now when we go to the DC-9 which comes next you'll see it's not so simple. Now this DC-9 is following over five--- if on the C5A at a distance of over five miles, 170 knots, why that's three miles a minute. It's a couple of minutes, almost roughly a couple minutes back, behind the C5A. This is where the quality is not so good because it's taken of the videotape, but you can certainly see what's happening to the DC-9 here in a minute because he's going to have substantial trouble keeping control of his airplane. And remember that DC-9 is a lot larger than the planes that the commuter airlines use, the twin otter, much larger. It couldn't take off and land on the STOL runway we're talking about. It's going to be relegated to or continue to use

1533. Here he gets in one that gives him a lot of trouble. If he'd been landing then he'd have a serious problem, which is why he can't safely follow the large planes in it at a time limit of two--- only two minutes. The next sequence of films which will be the last one is going to show a plane our size and weight, which is the rear jet, following the C5A at a distance of 3.7 miles. Quality really gets poor here bear with me, but you can see the attitude of the airplane although you can't see the details. You're looking from the rear of the Learjet, so you can't see the pitch, you can't see the nose up and the nose down, but you can see the wings level problem and you'll see that he's rocking around a fair amount and bit by bit the rocking gets worse and then he loses it. There he goes, all the way over and I've have a friend that's had that happen to him in a plane on final approach to landing because he was too close to the jet vortices of the aircraft ahead. Now to let you understand what that's like to a pilot, the next sequence of films is going to let you see what it's like if you're in the cockpit of the Learjet when it undergoes that particular series of events, and here the quality of the picture improves a lot in standard code Kodachrome. Here's what that looked like from the pilot's point of view, and here he goes over which is no fun. That's the end of the film, I appreciate very much you're letting me show that. I'll be happy to answer any questions you have on it and I think you can see why the commuter airlines feel strongly that they need a separate runway from the large aircraft. Any questions?

00:27:48,880 --> 00:28:36,000

Minsk: My name is Minsk. I think one of your later pictures answered it. What I wanted to know was about how far away would with the second plane be? That is, that is it should be before it would be subjected to the they cut--- the currents, the vortex, and also the timing. Well, well it seems to me that if these situations take place now why, why shouldn't they then require that planes take off or come in at a very very decisive long time you know after?

00:28:37,000 --> 00:29:38,500

Doherty: Okay, I think the question was why don't you see to it that the time separation of the aircraft is large enough to prevent this, and the answer is there is such a regulation but it requires that human beings think each time it happens. That the controller thinks, or the pilot of the following plane thinks, or in terms of takeoffs, if you are flying on relatively close parallel runways as we are now, that the pilot think not to fly through the wake vortex. And it's hard to remember to do that in the days of airplanes that don't leave a trail of smoke behind. That was a military plane not a civil plane. The civil planes more and more are leaving no trail behind them at all, and it's very hard for pilots to remember to avoid something that's invisible. The way to engineer it out to make it impossible is to not use the same runway. If you rely on human beings to think to do this every time before long, as happened down at Kennedy, somebody forgets. It's hard--- easy to forget something that's invisible like this is. Any other questions?

00:29:38,500 --> 00:30:30,080

Callaghan: Thank you very much Dr. Doherty. Any further questions or comments? If not we want to thank all of the people who are remaining out of the 25 or so people from Chelsea who are here tonight. And we trust that you've gained something. We trust that you realize that we are attempting to present to you the ideas that will be the initial contribution to the master plan, and as I said before if anyone wants to present any additional ideas in writing over the course the next two weeks we'd be happy to receive them. Thank you all.