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## Commercial Operations Session (2nd Bird Control Seminar)

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. . . Short recess . . .

DR. JACKSON: We are now moving into one of several sessions which will be considering actual control management operations. For this afternoon, we are dealing with some of the aspects of commercial operations, the operations of the pest control men. As the moderator of this panel, we have asked Dr. Lee Truman, President of the National Pest Control Association, to ride herd on his cohorts.

MODERATOR TRUMAN: Thank you, Bill. They kind of pulled a double curve on me. Bill come up to me last year - it was back in March or some such time -- and asked me if I would moderate a session up here. Well, moderating a session is easy. You can do pretty much as you please. Then it comes out on the program stating Dr. Lee Truman is the first man on the program. So you have a moderator who is going to have to do some talking, too.

I want you to know that in addition to representing the National Pest Control Association, I am also representing my own pest control firm, and many of the things I am saying here this afternoon are my own personal opinions and not necessarily the policy of the National Pest Control Association. I will let Dr. Spear take care of the policy and I will take care of the opinions.

The rest of your panel - on the end is Dr. Shuyler who operates Nice Pest Control Service, from Kansas City.

Next is Dr. Phil Spear, from Elizabeth, New Jersey, representing the National Pest Control Association.

Next to him is Jim Steckel, who operates Torco Pest Control in Columbus, Ohio, and has been very active on the bird control committee of our association for many years.

This business of commercial pest control work gets down, I think, to some of the meat and potatoes of what has been talked about here today. It is one thing to talk about bird control, in theory. It is another thing to do it in practice. Many of the things that seem very nice as far as our laws that we have talked about this morning, and so far as the things the food and drug people are concerned with, so far as the public relations people are concerned with, are real nice to talk about, but it is something altogether different to get out into the field and have to put them into practice.

I am supposed to talk about the "New Problems" in bird control. I have been in bird control work in one way or another, I suspect, for the last ten years, and after that first year, I haven't found any new problems. I only find the old ones magnified.

I suspect the only new problem is that new chemicals and devices are coming onto the market from time to time and you have to decide whether you are going to go with this one or whether you are going to let it go. The biggest problem we have, of course -- and I say this with all due respect to my friends in government and education-- but almost everybody tends to look on the pest control operator as the boggy man when it comes to doing some of this work. Theoretically the pest control operator is only interested in the money he would like to make out of the thing. I would like to assure you that this isn't true. So far as I am concerned, anyone who has been doing any bird control work for the last several years must be interested in something other than the money in it. They may have sold some good contracts, and they may have taken in some money, but every one of them that I know has spent more time experimenting for free than he has spent on jobs for which he was paid, and I think it is high time that some people realize this.

Pest control operators aren't any different than anyone else. Sure they want money. They have to feed their families just as you do. But they are also interested in the public welfare just as you are, because citizens are citizens; and I don't care who they are, or what they do, good citizens do have an interest in the welfare of the communities in which they operate.

The problems we have fall into four general categories. We have our public relations and legal problems as have been outlined so far today. We have our technical problems which I suspect will be outlined further tomorrow, and then we have our financial problems. Some of these, I think are not of real concern to too many of the people here today. When I say financial, I mean simply the fact that bird control work, in general, has had to be so high priced that much of it just couldn't be sold.

Now, you may say we are not salesmen, but you should see some of the jobs of one kind or another that some of these people have sold, and then you would appreciate it when they are turned down on bird jobs. Some of these jobs do become high priced because they take much labor; they take considerable material; they take more time than almost any other kind of work which we do in our industry.

The public relations we are talking about today are no real problem in my mind. I think most of the public relations problems we have are a lot more apparent than they are real. I think your speakers this morning pointed out that in areas where they had approached the control of birds sensibly they haven't had any real problem except that they have gotten a lot more calls than ever before, wanting them to kill off some more birds.

I know in Indianapolis, some ten or twelve years ago, someone wanted to poison some birds, and the word "poison" was taboo, but the health director was not exactly a stupid individual. He talked to the newspaper reporters and he talked to them about all of these diseases you have heard about and some that you never did hear about, and he had those newspaper reporters for about a month carry articles about diseases that people might get from birds. Some people got the impression over not too long a period of time that our pigeon flocks were pretty badly diseased. So when they did go out and put out poison seed and pigeons dropped dead all over the streets, instead of people getting up in arms, they said, "Boy, look, the health director is a smart person. Look at all of those sick pigeons dying."

I am not convinced that in every area you can ignore the public when you do a project of this sort. In a smaller town, maybe, I don't know. I do know that in the larger towns, you have too many bird feeders; and they catch on to what is going on, and a program must be at least somewhat public. You have to bring the program out into the open, because if you don't, someone will bring it out from behind the door and that is really bad. You have to bring it out when you start.

We have our legal problems, and the legal problems again were partially outlined this morning. We have protected birds; we have songbirds. Now don't misunderstand what I am about to say. I am all for protecting birds, I like to hunt, so I like game birds. I like to listen to the robin sing in the morning. But by like token, I think it is time that we decide along the way, what is more important here, one robin, or ten thousand starlings? Somewhere along the line, we have to get away from some of these absolutes, that songbirds are absolutely protected, that game birds are absolutely prohibited.

I think somewhere we have to think of the people who need to be protected - and again don't misunderstand what I am saying there, I am not advocating destroying these birds, but it is a very impractical thing, in a municipality, to put out bait for pigeons and sparrows and maybe not get yourselves a robin once in awhile. It is not only impractical, it is impossible, and somewhere along the line we arrive at a balance between what the law permits and what the law doesn't permit. I am not going to argue what our present laws do. I

am just thinking some of our present laws need some changes.

I was just discussing this with the public health man from Detroit. I know we are bound by laws, but I think some of these laws should be changed, and I am not too sure but that some of the people in the bureaus concerned might not be the people who could help us do it. I am all for what they are doing, but we must have some balance here.

We had a couple of very wise statements made this morning. Dr. Jones said that control is not necessarily the elimination of a species of bird, but control, to quote him, is to modify the condition to innocuousness.

I am quite certain that in Indianapolis, if we were to reduce our bird population in the downtown area to one thousand birds, there would be no problem in a downtown area the size of ours. But when you have 15,000 or 50,000, I don't know how many -- I have never been able to determine quite how you count a flying flock of birds-- there are an awful lot of birds. When you get it reduced to a reasonable level, then you don't really have a problem.

Dr. Jackson made another statement which I think is most pertinent on this thing, and that is that decisions are becoming harder and harder to make, and that is what makes more problems; because things get complicated. We have had Rachael Carson, and while again I don't agree with many things she said, her basic premise that we must use chemicals safely is something none of us can dispute. We must use them safely. Whether or not some of the ways she had of doing this are practical, I don't know.

The research in bird work generally is being done by governmental agencies. There is some being done by commercial firms, but a great deal of it is being done by governmental agencies. One of the things that concern us in the National Association is that we want to make certain that we get the fullest cooperation between those people in our industry who are interested in bird control work and the governmental agencies which are doing the research work. It seems to me that in an area when a governmental agency takes over a large program for one reason or another -- and I am not here to argue whether they should or should not take over an area program -- but if they do take it over, it seems to me that it would be good judgment to ask of the various people in the pest control industry in that area if they are interested. At least let them ride along on the project as observers, because if you don't do this, you are going to end up with the government going to have to do all of this work, because they will be nobody else who knows how to do it. The government can teach the pest control operators a lot of things, because they can frequently get a project over an area and involving many buildings and businesses that a pest control operator couldn't conceivably sell, so they can do some project experimentally that a pest control operator might find completely impossible to do in a commercial way. So I think that this problem of how to transfer over some of this experimental work from the government to the commercial operator, which should be a formal transition, is something that we should start working on right now.

Now, I know John Beck here in this area has worked very closely with some pest control operators in the area. I know that in other areas, they have ignored the pest control operators completely, because you should see some of the correspondence that we get when a project starts and the people in the area don't even know it is going on. This should transfer over.

I take a little exception to this - if you have your programs handy, over on the next page, you will find that starting out tomorrow morning we talk about non-commercial operations. I feel that practically every bird control operation, potentially at least, is a commercial operation. It may be or it may not be, I suppose, the way it finally works out, but potentially, everyone is a commercial operation, because I am one of those old-time folks who feels that the government shouldn't be in business. I think the government should be in government, and business men should be in business.

Now, it may take the government to show the business men how to be in business, but we have been doing that for a long time, and this is something that I think we should give some serious thought to. I am not too sure that control of birds around an airport is a governmental function. Control of bird's around an airport may well be a commercial function and this is something that I think we should give some consideration to. This is a real problem to our industry.

The thing that occurs to me is that our biggest problems all stem from several things. We have brought out here this morning certain things that I think are the basic axioms of bird control. We have shown, for instance - it has been shown repeatedly that birds carry disease, disease organisms thriving in bird feces even where the birds do not carry the disease. We have found that these ailments can be transmitted to man and his domestic animals. We have admitted that in many instances, we don't know the mechanism of the transmission, but I think if you were to talk to our public health officials, you would find on their part no doubt that this takes place. They have enough evidence that they believe and they feel that they know that it does occur. It is simply a matter of finding out exactly how it happens. We have shown that this is a health hazard.

No one argues the economic loss from many of these birds. Today we have talked mostly about pigeons and sparrows and starlings, but there are lots of other birds - some birds that I don't even know - but blackbirds, in various parts of the country; crows; seagulls; you know them. Some place they are a problem. These birds cause great economic loss. There is no question of economic loss when birds cause the crash of an airplane. There is no question of an economic loss when birds destroy a rice crop. There is no question of an economic loss to building owners in my town when birds live on the roof and the acid from their excretions works on the copper drain pipes and every three or four years they have to put in several thousand dollars worth of drain pipes. There is no question in the mind of the gentleman whose hat was defaced that this is an economic loss to him. Economic loss alone doesn't justify a lot of things, but it is something that we should consider.

Your food and drug people have mentioned that food must be produced under sanitary conditions, and, of course, at this meeting, while they broached on some other things, they are talking particularly of bird control.

I was on a bird problem just a few weeks ago in a food plant and I can tell you, unless they rebuild that plant, there is no way to keep the birds out of the plant, unless they come up with some better method of control than we have now. There are some real problems here, but we have these things which must be produced under sanitary conditions, under our laws.

The food and drug people have today the attitude that if you can't produce food under sanitary conditions, then you should close down, you shouldn't produce food. Now, this is pretty hard potatoes for the people in the food industry to take. This is the same as if they come in and tell you that you have to do something in your operation and if you can't do it, close up. I don't disagree with the idea necessarily, but it is hard for them to take; and it is something that we must seek all avenues of escape before we do take this kind of position. We have a lot of things here which say we have to control birds, and yet I don't believe really that we have decided yet that we have to control birds, because many times I think that we keep batting our heads up against a brick wall and refusing to do the things that have to be done to control birds if we are going to do it.

In the first place, how are we going to control birds? Chase them, as I say; repel them, as the commercial people say; or are we going to kill them? If we are going to reach Dr. Jones' control where we modify the conditions to the point where they are innocuous, somehow or other we are either going to have to reduce the number of birds, or we are going to have to chase them to some place else where they won't bother anything.

I have heard people this morning talking about birds moving, changing the ecology – and don't misunderstand me, I think there is a great future in the biological control of birds, in the changing of the habitat of the birds somewhat, but I don't believe it is something we are going to do in the immediate future. I think it takes a lot more study and understanding than we have ever had before. In the first place, birds don't change the ecology anywhere they live. They don't move to a different ecological situation. They may die because there is no good situation available, but only over long periods of time, and in very few species does an actual change, the ability to live in a different, actually different ecological situation occur. Then you have evolution.

But generally, when the bird moves, the ecological situation moves with it. You may not understand the situation that moves with him. There were chimney swifts and barn swallows long before there were chimneys and barns. There were pigeons long before there were downtown buildings for them to live on. The situation which they require has nothing to do with the buildings; it has to do with the kind of place where he likes to sit down, put his nest, or feed. You will find, if you get a bunch of birds that move from this area to that area, that whatever condition is necessary for their

existence is present in both areas, even though it may not be obvious.

We need a lot of studies on the ecology of these things. I was talking with one of the suppliers this morning, and he was promoting this idea. It seems to me, however, that it is one thing to eliminate the feed in a feed lot in Colorado, for instance, for three or four million starlings, and it is yet another thing to do the same thing in Ohio or Indiana. If you eliminate the feed lot on which this starling population depends for its food in Colorado, where do they go? They go out in the prairie and die. There is no place else for them to go. But if you do it in Ohio or Indiana where you can literally stand in the porch of one farmhouse and throw a ball onto the front porch of the next farmhouse, where do you stop? Some of these things are fine in theory, but in practice they don't always work. You drive the pigeons from downtown Indianapolis, and where do they go? They go out and sit on the houses. We work with the architects and try to get them to build houses without ledges, but it is a long-term proposition. There is nothing that is going to help us now.

Repelling birds is a real fine thing, but so I chase them out of my stockyards in Indianapolis – I am looking at this from a commercial viewpoint – and I can chase them out of the stockyards, I understand, with chemicals that are now becoming available. So where do they go? They go up town, and where do they roost? They roost on the tallest buildings in town, and these are all owned by members of the Downtown Building Owners Association, who are also my good customers. You might not believe it, but they take a dim view of this sort of thing, so I am not convinced that chasing the birds is always the answer.

I think that this thing is so much in its infancy that programs such as this, I think, should be even far more bull-sessioned sometimes than they are, because, to my mind, chemical-wise, technical-wise, we are groping. We have tried everything. We have done what we know how to do. But we haven't yet arrived at a good solution on how to do it. My own opinion is that if you are going to reduce the number of birds, somehow you have to reduce the number of birds. You can't just chase them away. You have to reduce the number, and this means kill them in one way or another. It makes very little difference to me whether you remove their feeding area, so they go out in the country and die where nobody sees them. But somehow or other you have to actually reduce the number of birds to a manageable point.

As someone mentioned this morning this involves what happens when we remove the birds. The rice crop was destroyed by parasites after they removed the birds. So removing the birds wasn't such a good idea, because as they removed the birds, sure, they got rid of the birds; but they go no rice instead of some rice. At least with the birds they got some. So we have to decide how we are going to do this; and if we kill birds, it seems to me that along the way, somewhere, somebody is going to kill a few of the desirable species. I don't know how this is to be avoided.

It seems to me that in considering our chemicals and in considering our

methods that we must think in terms of what is the best interest of the greatest number of people involved. What is the thing that is in the best interest of our own people, which is what we are concerned with. Chemicals are hazardous, as you all know. I believe that the chemicals we use do have some hazard. I think unless we find something specific, that some of them will unquestionably have hazardous effects or some other forms of life. The question is: how much hazard? Because even today rat poison that we use has some hazard to some other form of life. Every insecticide we use has some hazard on some other form of life.

I don't advocate killing other forms of life, but somewhere along the line, we must hold a man responsible who uses a chemical. Many a chemical which is hazardous in itself, if applied properly may not be hazardous; and I think we have to put more and more emphasis on the application of the chemical, and then hold absolutely responsible the man who applies it. He may have an accident. There are several "physicians" here today. You all know that you handle some drugs that given in just a slight overdose are quite deadly, and you also know if you were to prescribe these in an improper dosage you would have a rough time with your medical society. They hold you responsible for it. They know they are hazardous. They see that you know how and what to do with it, and then they hold you responsible for it. They don't eliminate the drug, because the end benefits are too great for this.

And I think on bird control, in view of the economic loss, the sanitation factors, the disease factors, I think these, too, are sufficient, that somewhere along the line, we must decide what is safe, who is to use it, how he is to use it, and how he is to be responsible for it.

I know some people in our industry wouldn't like me saying too much. They would have to be absolutely responsible for what they put out. I think most of them would, but some of them wouldn't; but a man must stand responsible for what he does. These chemicals must be looked at under their conditions of use, not some other way.

I don't know that chemicals alone are the answer. I don't know that ecology alone is the answer, but I do know that our big problem today is trying to put out something which will get rid of the birds in one way or another, that will work, and that is economically feasible to put out, and I can't really see that if I kill a dove, and it is a protected bird, but I get rid of ten thousand starlings, I can't really see that I haven't put something on the plus side of the ledger for the community when I do this.

These huge colonies of birds are really something, and they are a problem. All of this is going to call for a great deal of cooperation - I think even more than we have had in the past. I know in our Association, we have had splendid cooperation between ours and governmental agencies. I don't know of very many industries that have had the wholehearted cooperation as our industry has had, from research people and educators. I think it is not

going to call for more cooperation, but more intensified efforts on our part to define what can be done with some of these things.

I have put bird glue on buildings - I was told I shouldn't use those words "bird glue," I should say, "chemical," So, all right, I have put chemical on buildings, but it kind of irritates me to see a building sandblasted and then to put any kind of chemical right on those brand new ledges. This kind of irritates me a bit, particularly when it would be so easy, even with present techniques, such as strychnine seed, to get rid of most of those birds. Somehow or other, we are missing connections. We are not sitting down and getting things talked over - I am speaking a little off the cuff here - as I say, I am not expressing the policy of our Association - but somewhere we are missing the connection in how these things should be done.

You get into some towns,, you can kill pigeons. You get in somewhere else they are protected, someone mentioned earlier this afternoon, you run into the next problem of what is humane, and this is a real problem. For instance, I maintain that strychnine seed is quite humane, because given at a proper dosage; a bird takes some, flies ten feet in the air, and falls flat on his nose. He is dead, boom, like that. Not all of them, but most of them. To me this is humane. It is more humane, I would suggest, than trapping them, putting them into tight containers and taking them out some place and wringing their necks which a lot of humane societies will approve when they won't approve poisoning.

These problems that we have, to my mind, are basically problems in understanding, and I think that is why the industry has been invited here today to talk about these problems. We don't have, I believe, the proper tools to get rid of the thing, but aside from this, our problems mainly are with people - what you think, as opposed to what I think. I long ago got over the idea that just because you disagree with me, you are smarter or any more stupid than I am. You have a different viewpoint, because no doubt you have a different background, and why shouldn't you think of things differently?

I understand this is the second of these meetings. It has been held every other year. I think there should be more of them. As Phil Spear knows, I have been complaining that there are too many meetings to go to, but bird management is a wide open field to our industry. We can be of use to the public as well as the public being of some use to us. These are our problems. They are problems of people, of misunderstanding, for the most part, of the chemicals we can handle. If we have to train people to handle more hazardous materials, we can do it. If we have to control them, we can do it, and if we have to put them out of business for improper handling, we can do it. These things all can be done and should be done.

Now, I have tried not to step on the toes of any of the three people who are following me here. Dr. Spear is going to talk on "New Materials," and I have purposely avoided mentioning any of the materials. I am speaking very generally. I don't want anyone to think that anything I have said is an insult to your chemicals. I think a lot of ingenuity has gone into the chemicals and

the devices, but the new materials technically can be handled better by Dr. Spear than by me, so I will turn the mike over to him.

DR. SPEAR: Thank you, President Lee. It is not an easy task to follow Lee in any presentation, and then when he tells me that I am the one that is to talk policy and he, as President of the Association and Chairman of the Board of Directors, knows very well that we don't have any particular policy in this field, I could almost sit down now, couldn't I?

Well, there are further problems. The topic that I have been assigned is "New Materials," and I can't cite one material which I can tell you to go out and use and which I can mention by a common name that was not discussed at this meeting two years ago. So we have some problems to be surmounted before I get through my presentation. So I have tacked a bit onto my title and have said, "New Materials and the Attention Given Them by NPCA."

First, I am here representing the NPCA staff. We make an effort to obtain advice of responsible authorities and relay this advice to our members. Our staff makes some effort to remain attuned to industry's needs and to maintain contacts with those federal and state agencies who have responsibilities in this area and who have competent biologists or other specialists who can guide us. It happens that both Dr. Heal and myself are entomologists, but we are dealing in many problems outside of the field of entomology, such as bird control, so that we have to rely on these specialists to give us guidance.

We maintain as best we can our commercial contacts, and we are happy to say that we have approximately a hundred members of the Association in the allied category. These are suppliers of products or services to our industry, and through our mailings and through attendance, at meetings, they learn our needs and we have opportunity to communicate with them. Many of them come in and visit us on special trips for this purpose. There are limitations, however, because some commercial firms keep information confidential and to themselves for their own good reasons. Decisions made on a commercial basis indicate to them that it is best. For example, the Phillips people felt that it was to their commercial interest to limit, the distribution of the products which they are handling in the bird control field. This was a decision which they took and with which we have no quarrel; but it does indicate to us that since these products are not available to the industry-at-large and not available to the membership-at-large, it is not a subject for discussion by a trade association, which must serve an entire membership-at-large.

Our membership now is considerably in excess of a thousand member firms, so the few firms, who handle a specific product, cannot expect to have service on a product which is limited to a few individuals.

On the other hand — and again like Lee, I am not trying to praise or damn any particular product, but it is easy to use examples. Some time ago we had an insecticide, Bayer 29493, come along which was found by our insecticide committee to be an invaluable insecticide. In reviewing the data which was to be presented on this material it became apparent that there was a

certain amount of specific action against birds so that there was differential toxicity, with birds being much more susceptible than most higher animals. It appeared that there was here an opportunity to employ this material in bird control.

There followed many discussions, much trial and error and most useful of all, a research project under Dr. Jackson here at Bowling Green. It put this chemical under practical field test, using material supplied by the manufacturer. This research helps the manufacturer to supply the data which John Ludeman's group in Pesticide Regulation needs in order to review a label. The material now known for this purpose is Queletox, and I understand it is progressing well through the torturous channels towards registration. Although not yet accomplished, we hope that the Association's work through the information accumulated by individual members and the research that our Association's research fund has been able to sponsor here has helped along that way.

There are limitations to be overcome as we take almost any of these products into the field. New problems turn up. We have seen that in the past with insecticides, and no doubt we will see it with bird control materials as well. As an example, there are problems of temperature. At some temperatures you can use a material with one effect or good effect and another material with another effect or no effect. These things, in large part, can be determined from experience before registration, but even so, after registration there is an opportunity for more information to be supplied.

In our Association, through its committees,, and in this case the Bird Management Committee, we serve as an exchange for good information, for useful information, whether it be from successful use or unsuccessful use, or just simply mistakes in use, Jim Steckel is not listed on your program, but I am sure that President Truman will properly identify him. This year Jim Steckel has been general chairman of our Bird Management Committee. There are five sub areas: northeast, southeast, central midwest, southwest and Pacific Coast, in which separate groups of members have an opportunity to serve the Association by exchanging information, so the successes and the mistakes of members can be consolidated through, in this case, our Bird Management Committee, to provide useful information.

The Association's Bird Management Committee, as with any of our committees, has a number of other opportunities for service in dealing with new materials. Surveys De-maps show needs, materials being used; workshops are practical affairs in which techniques can be compared. There are a few here who have suffered through one of George Hockenyos' 6:00 p.m. to 5:00 a.m. workshops on a cold night in Illinois -- this is an experience in many ways -- but from these, there comes a fellowship, and opportunity to put information right to the test of practical use.

The committee also has an opportunity to prepare what we call good practice statements. This is a rather new term for us. We have had good practice statements in fumigation; a similar arrangement for the termite field, an

approved reference procedures for termite control is used in many areas. And now the full value of it is just being realized. The Bird Management Committee at present and in the future has an opportunity for service in setting up these statements dealing with new materials.

We have talked strictly about chemicals, but there are also devices to be evaluated, and in the same way we have opportunity to compare the value, report experiences, through our committee work.

I hesitate to take too much of Jim's space here, but. I would be remiss if I didn't mention the great contributions that George Hockenyos here has made, in his role as presently the spark-plug for our Bird Management Manual, Here we have a couple of hundred pages, more or less, of material which George himself, or the Bird Management Committee under George's direction over a period of years, has accumulated. The committee will be able to do much more in the near future on that, we hope.

Now, I wish that I could go on and tell you about some of the numbered materials or the new materials coming along, but these are in a research status. I have reports on one or two on a confidential basis, and I just am reluctant to betray confidences. But there are new materials of interest coming along.

These are materials which do, as Dr. Truman stated, require that we exert considerable responsibility for their safe use -- use that is safe for the public and for the manufacturer. When one of our allied member firms makes one of their chemicals available to us for bird control, that firm's public relations image is on the firing line. It is with considerable trepidation that such a move is taken, and it is our responsibility to protect them. And our industry's reputation is equally at stake.

This past summer a move has really gotten underway to strengthen safe practices as official policy in handling chemicals. The gist of the statement is that for any pest control problem, public interest requires the use of the safest material which will accomplish the intended purpose. So in our search for new materials, our emphasis now -- not forgetting effectiveness -- is more and more on safety.

MODERATOR TRUMAN: Thank you, Phil.

I think you can see that we have problems from the viewpoint of chemicals and devices. There haven't been too many new ones, and as Phil mentioned, most of them were discussed at the previous meeting.

We have had in our industry some very practical work which has been done on bird control, and a sizable chunk of it has been done by your next speaker, Jim Steckel in Columbus, who I expect has put out as much bird bait and spent as many nights up watching birds as anyone around this area. So we are going to have Jim talk to you on how to prepare some of the materials and

and some of the new techniques that he has used.

MR, STECKEL: Thank you, Lee. It is a real difficult job always to follow these glib kids that spend their lives running around the country talking every day. We get called out once a year, I really felt sorry for the fellow on the panel with D. O. Jones this morning, because that pace he set was too difficult for anyone to follow. We are more fortunate than those other fellows were this morning.

I have the "Preparation of Materials and New Techniques." You have heard that there aren't any new materials. Now, I will close mine out by saying there are no new techniques. I guess there is nothing new under the sun, just revisions of old tried and true processes.

Most of the techniques we have today are things that George Hockenyos was taught back by an old professor -- and I can't remember his name. I have heard George talk about him about a dozen times, but that must have been interesting class he had back at the university in '09 or something

George is a friend of mine -- or was up until now. We can talk this way. George put a lot of these things down on paper, and we have all spent many a long weary hour at night in his hotel room listening to some of the things that he was taught many years ago, and the ideas and turns and twists that he has given them to make them into what little rough-hewn toolbox we now have for this thing called "Bird Management," and bird management is a real good name for this.

Bird control -- this is a real tough one. My wife laughs whenever I say, "Bird management," She kind of smuckers up her lips a little bit and says, "Let him ramble on; he's dreaming again." But we have a toolbox and this toolbox is getting neater and it is getting fuller, and it is getting down to the point that we are beginning to be able to take it out on a job and do a job of bird management (bird control). If there is something new in this toolbox since we were here two years ago, it is the advent of what Phil just was talking about. We have, I think, built into this thing a certain amount of safety and safe practice that we didn't have two years ago.

It has been real interesting to see the change -- especially I am thinking of strychnine. It was used at a one per cent level, and now we are down to a quarter of a per cent, and possibly going lower than that, and this is good. We are getting the job done as well. We might be getting it done better, and we are getting it done a whole lot safer. Strychnine is toxic, very toxic. A quarter of a per cent doesn't make it a whole lot safer, but it does give us a safety factor that we need, and it tells us that we are trying to get this thing down to the safest level that we can and yet do the job that needs to be done.

Well, let's talk about techniques. Technique goes back to those things that we learn about in insect control and rodent control and most any of your projects that you people work in, in public health -- it goes back to that primary thing that we are always interested in, and that is good sanitation. Sanitation is the first thing that we need to look at when we go onto a bird job. This has to be a part of that job. The removal of nests; the removal of nesting sites; the removal of food supplies and water sources. Good sanitation techniques make this place an environment that the birds find difficult to use in their normal habitat. Good sanitation will go a long ways in your bird control project or your bird control work.

The next thing that comes along -- almost one, two, three, three and a half, four steps that we use in rodent control or termite control--the next thing is structural changes. Structural changes mean closing those openings that the birds are coming through, where the spouting is bad, a piece of siding has been torn off, a door has warped out of position; those things that are normal entrance ways that allow them to get into areas, give them roosting sites, give them nesting sites, give them protection, give them access to food supplies, give them an entrance into that food processing area, where you really can't do much with them because you have some real restrictions in there. Let's keep them out of there by structural changes.

What do we do beyond structural changes? We have got some certainly real problems here, because let's say that this is a big food warehouse, and food is brought into one side of that thing from railroad cars with big docks and doors that stay open a good portion of a 24-hour day. They go out the other side in smaller trucks that can deliver to grocery stores or warehouses of smaller nature, and these doors are open a good portion of the time, We can't keep the doors shut. Work has to go on. It has to come in the back door and go out the front door. What can we do? Can we get part of them? Can we use some of our frightening device or our rotating beacons, our exploding devices? Sounds real impractical, but there is something that needs to be done here.

I am not going to pass judgment on all of these devices. I have here the proceedings of the Vertebrate Pest Conference, 1962, and one in 1964, out in California. You could read in here where each one is good, and then read on back and find out where it is not so good. So let's not ask me to pass judgment on this. I am just saying that here are some of the structural changes that we must be conscious of when we go to work in these areas.

Netting and screening certainly are applicable. We were told by somebody who was about in the same shape as this fellow who came in to see Phil here recently of the chemical derivative of the bird who was frightened. We have kind of stuck our tongue in the cheek and told him to go hunt the birds.

Well, this fellow said, "I don't think you will have any trouble with that

big doorway, if you just hang some netting down," Well, I don't know. That didn't sound so good. But we tried it, and it worked. Funny thing, the birds were a long while learning, but they learned to drop down lower and go in, or drop down and walk in.

I can remember the days of Buck Rogers, and I know my dad said, "Oh boy, you dream; you will never go to the moon." I don't know. I may not get there. I am scared to death to get on that thing. But my son is anxious to go on his way, and he might go, and there are things in this old world right now that I guess we have to take a second look at, because it seems nothing is impossible.

Repellants and irritants are another area. We have been told that there are certain things that we can do and certain things that we can't do, especially where food is being processed, stored, or being handled in open containers. If we have a bird problem in this kind of an area, there is only one thing we can do, and that is move that problem to someplace else where we can do something about it. So this is where we have an opportunity to use our repellants and our irritants, and we have a whole line of those. We have got all kinds of irritant materials and repellent materials on display over here.

We have heard and seen the lighting devices, the rotating beacons, the sound devices, the distress calls, the use of colors. There is a lot to be done about this use of color. We can demonstrate very clearly --and I am sure you can in your own home town -- if you can get a roof where pigeons are roosting on it every day, and if you will just take a nice new two-by-four and throw it on that roof, you will find they won't be there for awhile. I don't know why, but this will happen. They will get used to it and they will come back. Maybe it gets weather-worn, maybe they get used to the object, but there is something for us to learn about color, about lights, about smell, and about noise.

It seems that birds have a lot of flexibility. They are able to take these distress calls for awhile, then after awhile sit beside them, and it doesn't worry them too much. It seems like they can get used to the lights. We have people working on this every day around the country --the ultrasonics, the supersonics are things that have come onto the market and been temporarily taken off of the market, and I understand are about to come back on the market again here with revisions being made.

These are things that are good possibilities as far as repellants or irritants. Mist spraying - the use of ammonia as an irritant; paradichlorobenzene, orthodichlorobenzene, naphthalene, as an irritant to move them from one area to another.

We had a problem with birds messing up the top of corn storage areas, and we noticed in another area where we were having a mouse problem on one of these corn storage areas and had put a chloropicrin wick in the storage that we had no trouble with birds here either; so we tried this and it moved the birds easily. It can't be used everywhere, but it is another one of the tools that you might carry in your bag of tricks. Strychnine is one of the toxicants that we have heard most about -- maybe arsenic before that. One per cent was the standard rate on all strychnine, then down to half a per cent and now down to a quarter per cent and has possibilities of going even lower.

Thallium sulfate is one of the real high restriction toxicants that we use in our work and one that we have to use carefully and with respect, but yet it has a place in this field and it can be used at lower dosages than we had thought it might have to be used when we first started using it. This is coming down.

Sodium fluoride has come in as one of the toxicants that is being used more. The anticoagulants are now being worked with, as far as bird control is concerned. People who are making anticoagulants are receiving some pressure these days from new rodenticides coming on the market, and they are out to see what else can be done with the anticoagulants and they are looking hard at this area to see if they have something that will fit in our area of bird control and will give us a real safety factor that the anticoagulant has given the rodenticide business.

Lethal paints. These are materials that we paint on surfaces, roosting surfaces, nesting surfaces. Basically this has been made up two materials: Endrin and Entex. These materials are used and registered for use and purchase. This is an application where materials are inserted into a perch which has a wick along the top of it. It gives you a good control of a toxicant, of a real persistent toxicant, in the case of Endrin. Perches certainly have been widely used throughout our country, and again, we have areas of great success, and we have areas where success seems to be marginal. We have some people who believe in them a hundred per cent; other people who have found them to be not quite as successful in their particular species of bird. Seemingly, they are more specific to the pigeon and the sparrow than any of the other birds, but this is an improvement in our field, and is a registered material that we can use.

Now, there have been references made here to Queletox, or the material being produced by the Chemagro company. This is going to be, I guess, the name that will be given to an Entex material that is made into possibly a paste form or a paint form. It looks as though registration will demand that this be used with a tape, and two years ago when we were here, we were just starting to talk about the possibility of tape, and now it looks as though - if this product is going to be registered - it will have to include the tape application. This is putting a piece of tape that is impervious to the chemical on the surface that you are wanting to treat And then putting your paste or paint chemical on it so that can be removed at any time deemed necessary and won't leave a stain or a persistent chemical on that surface as it would without the tape.

You are familiar with the use of this, because we have been talking about it, but it is just recently that it has come into the foreground to the extent that registration is going to be pending upon this.

Energy wave length devices. These are the sound devices that attack birds at a level that isn't too distressing to the human. The supersonic, again, are in this area. The lights would even fall into this area. These are energy wave length devices that we can see here and are being developed. Some are being revised. There are at least two companies that claim that they are

within inches of coming onto the market with something that is going to be very successful. I believe Bill Jackson had an opportunity to visit one of the plants on his way back from Kansas City last year, and these people seemed to think that they are pretty close to having a commercial product available.

One of the first and probably it will be one of the last materials in our toolbox is the pyrotechnics. Pyrotechnics is a great vast group of items, but I would say that probably the one that has been used to the largest extent and probably to the most successful use is the carbide exploder. There have been some real good uses of this tool reported especially in the pacific area, and I think that, in the rice fields this has been a satisfactory thing. As I read in the report from the Vertebrate Press Conference, this has been used quite successfully in many areas. I don't know that we have one for display, but I did notice that there were two or three pictures of them over in the exhibitors' booth.

The acetylene exploder, the shell cracker, pretty well demonstrated that you can move large numbers of birds from roosts, and these are specifically the birds that group in large numbers for nesting purposes or roosting purposes -- the starling is an excellent example of this with the use of shell crackers, and if you go into a roost area four or five nights in succession you will move them with these shell crackers. You can pretty well move them from that area into another area.

Here again we are going to "move" again, and Lee Truman doesn't like to "move" birds because he has got his customers down there where they move, and I guess we all agree with him that this is true. The only thing is there are places that you have to move birds, and if you want to, this is a device that can be used.

Roman candles are still successful, although John Beck tells me that he got some pigeons down in one of these little cities in Ohio that eat these Roman candles. He said they shoot them and he says they just open their mouths and gobble them up. Roman candles are used but there is a hazard here in that they could cause fires, but they will move birds and fall in the area of pyrotechnics.

Another one of the old and reliable tools is the trapping group. Still large, large numbers of birds, in especially agricultural areas, are being caught with nets, and most of you have seen the pictures, I am sure, of the lights and nets that are available through the Fish and Wildlife Service and some of the governmental agencies where they set them up and drive these birds in at night and catch them with nets.

The cannon net where you shoot the net out over the flock of feeding birds is successful in many areas where you have large groups of birds, and it is a real fast way to pick up a good group of birds. They are used for getting test birds, or banding birds. I think that up in the northwest, up in the Dakotas, where they were trying to make a study on migrations of birds, they were able to catch and band most of their birds through catching them in the net traps.

The old screen trap that you put upon top of the building is still successful. It is slow, hard, but it will catch them. It is rather in humane, when you think of the bird going in there. He is confined in a rather small surface, Often times he runs short of food in there. He gets excited by a lot of surrounding environments that he is not used to, and he will flutter against the screening or trap or break his neck or wing. A rather inhumane way to do this, we feel, although there are many city officials who feel that this is the only way to do it, and I don't mean just city officials, many groups of officials feel that this is the way that it can be done.

Now, we have some other chemicals that go into a grouping called narcotics or anesthetizing chemicals, and I think, Phil, that this is where we would have to put our Phillips product, Avitrol.

Avitrol, one of the Phillips products, or the Phillips product, that has been kind of kept under the hood here as far as the material itself, is a psychological repellent. You treat a grain with it, pre-bait, and then give them the treated grain, much the same as you would with one of the toxic materials. They take it, and this narcotic act on them in a very wild way. They go through all kinds of contortions. They have unbalance somehow, have a very difficult time flying if they can fly at all, and spiral and tumble around and scream and holler to the extent that they pretty well move all of their flock, or all of the adjacent birds, out of that area, and they move them out in a pretty short order.

I would say probably two-thirds of the nation has used this Avitrol product in the last year. I mean it has been used pretty well through the west and southwest and down into the southeast where they use it on a rather broad spectrum of birds and bird problems, and have found this to be something of a spectacular material to use, I have seen it in cages at George's lab. I have not seen it other than that, and have not used it other than to watch this. There is a certain amount of mortality. About ten per cent of the birds get an overdose of this narcotic (Ed. antipyretic or analgesic) and the same thing happens to them that happen to us when we get an overdose of a narcotic. Eighty per cent of the birds get a sub-lethal dose and go through all of this gyration that causes the discontent within the flock and renders an area pretty well sterile to birds -- of this flock anyway -- and there is probably ten per cent of them that, for one reason or another, didn't get any bait or it didn't affect, but they are scared off by seeing all of the contortions of the others.

These are some of the narcotics. There are others. There are some anesthetizing drugs. I think this is something that is done in some of the foreign countries even to a much greater extent than it is done here again for banding and trapping purposes, where they treat grain products or meat products with anesthetizing chemicals. Then if you can pick up this bird within 20 to 30 minutes, you can normally get him; otherwise he recovers from the anesthetic and goes off on his own.

These materials are new materials. We don't see them out for use in any great numbers, or we don't have a great deal of experience with them. This is the same as another group called the chemosterilant. This is getting back into the biological controls. Lee thinks that there is a big field here in the chemosterilant and I am sure that all of us will agree with him, that this is an area that certainly looks like it is wide open. We are interested in it, and hope that some of these days we will have more to report than we have at the present time.

This pretty well covers the area. Now, a technique was the topic that I was given, and we just probably haven't talked about techniques at all, but techniques are just the same as they were two or three years ago with the exception of the safety factors. I think that I have told you, to the best of my knowledge, not maybe in the proper order, but the techniques that we, as pest control operators, believe that we should use in good bird management practices, and I will just run through the headings again on those.

First of all, we take a look at this with safety and safe practices in mind, and this is for our people who are working with these materials as well as the people who are going to be working in the area in which our materials are out.

Sanitation certainly is primary.

Structural change follows close onto its feet.

Following that, the use of repellants and irritants to get these birds into an area where we can safely do what we want to do with them, whether it is move them, remove them, or exterminate them.

Toxic agents. We have a good number of materials registered for use in the past two years, and we would like to make a real plea that you use these registered products and use them according to their label. This is the reason for all of the work that is going on in the registration section, and now that they have made materials available to use, let's use them and use them properly.

Energy wave length devices, pyrotechnics, trapping, narcotic or anesthetizing chemicals, chemosterilants, and last, but not least, good judgment and good common sense by the operator in charge will go farther in your bird management project or bird control project probably than anything else. Remember, good management and good judgment go hand in hand. Keep this in mind at all times, please. Thank you very much.

MODERATOR TRUMAN: Thank you, Jim. You know, you are young yet, boy. I always enjoy somebody who gets up and says that the two preceding speakers talk away over time and then takes more time than both of us put together.

MR. STECKEL: My subject was broader.

MODERATOR TRUMAN: You even brought in some things I haven't heard about. We have one man in our organization who has done a real. difficult, large municipal job, community job, the thing I am sure a lot of you have always thought, of in terms of something to be done by your health department or to be done by governmental agencies, and which we, or course, always turn around and think of in terms of something to be done by a commercial firm. But it has been done in a rather large town and rather successfully, and Dr. Harlan Shuyler is going to tell you how he did it and what happened.

DR. SHUYLER: President Truman, fellow members of the panel, and members of the seminar. I would hasten to say that I am in full agreement with the philosophy expounded by our NPCA president.

The question that has been, most frequently asked by those who have known of the work that, was conducted in Kansas City, two and three years ago, has been: "How did this opportunity for large scale bird control arise?" This, then, should be the starting point.

First of all, we should realize that this was a long standing problem which had been recognized for some period of time. Galen Oderkirk, recently retired Fish and Wildlife official, had visited Kansas City, upon request, twice over the years to discuss the pigeon, problem with the city officials and other civic leaders, William Fitzwater, his assistant at that time, also had been to Kansa" City on two occasions to discuss the problem with city officials. Obviously, the problem was recognized and acknowledged, but nothing had been done over these years to solve it.

Then, at a later date, two downtown merchants with relatively sizeable businesses called us and asked us to come in and talk over their problems concerning pigeon damage. We discussed the pros and cons of efficiency of control achievable, and the safety of control that was possible. Because of the cost of the program and the probable re-infestation of their buildings, if they were the only two involved in a control programs, they did not initiate service at that time. A few months later they called again and indicated that a group of downtown business men were interested in a solution to the bird problem.

For some unknown reason the membership of this group of business men had become very interested in bird control and the City Councils, as well, began to show evidence of art interest since the city buildings were also a part of the downtown area. We were told, unofficially, that Council Members had made statements indicating that they could pay perhaps twenty per cent of the cost and hinting that they ought to propose, to pay as much as forty per cent of the coats But, as it had been earlier, the matter seemed to be dropped again.

Information regarding behind-the-scenes activity would, occasionally reach us. At one time we learned that consideration of a pigeon control program had been

entirely dropped. The reason seemed to be that the necessary funds were not available. Then, about two months later, we were informed that an authorizing ordinance had been passed, granting all of the funds for this program.

It was drawn up for bids by the various firms. The bids were only available for about nine or ten days before they were to be submitted. Of course, since we had been surveying the area, it was easier for us to prepare a realistic quotation. We were awarded the work.

Work had proceeded for approximately two months, when on one occasion during a conversation with one of the downtown merchants concerning some of the peculiar problems of his building, I learned that he was "certainly glad that Mrs. Blank had been hit by a pigeon dropping right outside of a City Councilman's store."

I will probably never know for certain, gentlemen, but I feel that this was the reason this large scale bird control work was initiated in Kansas City. By happenstance a lady of influence in Kansas City Society was struck by the dropping of a pigeon just outside the entrance of a store owned by one of the City Councilmen; and, as a result, it became necessary to control pigeons, I think that is all it amounts to.

The second most frequently asked question is about the public relations problem. By chance the public relations problems were handled very adroitly. I do know that requests were made of the newspapers to handle the news stories in a rather cautious manner. What effect this had is not known, but it seems quite certain that the particular technique used was one which could be repeated in a planned manner elsewhere. The news stories were built around one of the officials of the downtown merchant's group. The articles told that this gentleman was quite concerned about pigeons splattering a lady's hat, and how he worried about her slipping on a pigeon-splattered sidewalk. It was reported that he hated the defacement of our beautiful downtown buildings, especially as seen through the eyes of our many distinguished and welcomed visitors.

And this was born, it seems, a rather clever public relations technique for bird control. It was particularly clever in that it did not mention any city or governmental official, nor did it revolve around any one particular store owner or land holder. Instead it used a nonpartisan, authoritative, news-worthy person, who did not represent any special group or interest, but who was virtually interested in the welfare of the people who worked and shopped in the downtown area. This was the prime technique used before the program began. After the initiation of the program, the same technique was used in measuring the results of control by the degree of abatement of the man's concern about peat birds. Nevertheless, it was noted that he still hated the few that were left.

Another problem was that of accomplishing pest bird control without interfering with traffic. Potential problems must be foreseen to the extent possible. It is a matter of absolute necessity to work with the person in charge of traffic whether working in a small town or a big city. In a large city one cooperates with a special man whose sole duty is the moving of traffic. Since the move-

ment of vehicular traffic is of prime importance, the first consideration must be to avoid traffic tie-up - a potential cause of accidents - due to the service firm's vehicles. There are also drivers who become so interested in watching the servicemen that they automatically slow up traffic. But these nerve-fraying incidents can be avoided and the problems surmounted by working willingly and carefully with the traffic engineers.

Interference with pedestrian traffic is another aspect of the same problem in some of the operations, but, again, by working with the traffic engineer, we were given explicit directions for solving this problem ourselves, without involving any of his people in the work.

There were many other aspects of safety that were very important: safety of the personnel doing the work, safety of the persons employed in the area, and safety of others traversing the area. With the use of rubber gloves and safety ropes for our personnel and by employing the use of warning placards, guard ropes and tarps, these hazards were surmounted.

Various techniques were used in the two separate programs in this same area over the total of a two year period. Structural charges were made where feasible. Because of the particular area involved there was not much opportunity for any sanitation changes. Contact chemicals were used extensively. There was considerable use of foods to which chemicals had been added. Limited use was made of various types of repellent techniques, including nets and tacky repellants.

In conclusion, regardless of the means by which pest-bird control services are sold, the present high cost of bird control is deemed well justified. Biologically, we are dealing with the most numerous, most mobile vertebrate animal there is. Due to the size and other characteristics of birds, "greater efforts" must be exerted (i.e., stimuli of greater magnitude must be used) in order to alter anything about them, no matter whether we are talking about killing them, moving them, or achieving any other desired result. Another influence on cost is the fact that controls must be exercised in the eyes of a not-fully-understanding public, even though there may be many elements which prevent the public from being widely aware of all of the aspects of the problem.

In view of the tremendous costs of the presence of pest birds, costs of control do not appear out of line. It is anticipated that such costs will remain high, when compared with insect control costs, at least in the foreseeable future.

The second concluding point is that, in community-wide programs, public relations must be handled differently in each program. Broad community knowledge of a control program is not an assurance that public relation problems will be avoided, although in this particular program there were none. Conversely, a lack of knowledge by the public does not insure freedom from criticism.

Finally, we must accept as fact that since the problem is created by man, it must be controlled by man. This simply means that we must reduce the numbers

of pest birds, before we can begin to manage pest birds. This conclusion seems inescapable in view of the control program discussed here and in the light of all other experience over the past fifteen years of bird control work. There is a place for those materials which influence the alighting of birds. That place is mainly as a part of a management program after reduction has been accomplished.

MODERATOR TRUMAN: Thank you, Harlan. We have some time left. Before we get on to some questions, Jim Steckel has an announcement that I don't, know where else to stick into the program.

MR. STECKEL: Thanks, Lee, for just this minute. As Phil pointed out earlier, we have underway here what we hope will be a good practices manual for bird control, and we have written out bird control or bird management committee people ahead of time and asked them if they would stay over here Thursday evening after this meeting is concluded and into Friday to help contribute toward the completion of this manual, so that we can get it printed and in your hands for your use and your knowledge just as soon as possible.

I would like to ask any and-all of you who wish to contribute, and I emphasize the work "contribute" to this, to give me your name, so that we can plan on using you as part of this little project at the completion of our meeting here tomorrow afternoon. This includes governmental agents, health officers, and any of you who are attending. We would like very much to have you who wish to contribute in helping us put together this manual or polish it off so that it can be in your hands as a text to use, as a resource book, to contact me and give me your name so that we can plan to use you in this period. Thanks very much.

MODERATOR TRUMAN: Now, we have time for some questions on any of these things. I don't know whether we have got you all sufficiently confused now, but. I think you can see from the things that we have been over this afternoon, that there are some problems in the practical application of bird control work at the present stage of the game. Do we have any questions from the floor?

MR. BENSCHOTER: I have a question in regard to safety, which I think might be brought out. I realize that Jim brought out the minimum and maximum so far that has been established in the percentages in strychnine used, and I wonder if it wouldn't be a good idea, at this time, to perhaps give out the minimum and maximum that the pest control operator should use on some of these other chemicals which they will be using anyway, and would probably be a good idea to have them use them at a safe level.

MR. STECKEL: Well, I will try, with the assistance of everyone here to help me on this. Can you be specific on some of the materials that you are talking about?

MR. BENSCHOTER: Well, the ones that you had there, like you had strychnine and thallium, sodium flouride.

MR. STECKEL: Let's try to pick them off here one at a time.

Thallium normally is used at about a two per cent level. It has been very successful down to 1.4 and down to 1.0, I believe. John, have you any information on this going below that point?

MR. BECK: Point five (0.5%).

MR. STECKEL: Point five. That is thallium sulfate. Okay, well, let's say then between 0.5 and 2.0, probably we could say very easily that it would be between 0.5 and 1.5. There might be a top on this.

Sodium fluoride, about a three per cent level. Now, how far down we can go from this we haven't determined, but it looks like this is rock bottom as far as sodium fluoride is concerned.

MR. LIEB: Small operators find it hard to mix these materials and mix them accurately. Is there any available source of supply other than commercial?

MR. STECKEL: I am sure that there are sources of supply, and we have some of them in the back of the manual. Don, I'd really hesitate to come out here and tell you, because I am afraid I would leave somebody out and it hurts. So in the back of this manual, we have a source of supply; and if you will stay here and contribute with us following this meeting why we will not only give them to you, but we will be sure that we get them all up to date. Sorry, I just don't feel adequate to do that one.

Jim, did you have some other materials? Are you thinking about contacts also? I was afraid you might be.

I have just been prompted here, if they are not registered, don't use them. Entex is registered for use in the perch, and is this at a six per cent level, Phil?

DR. SPEAR: I think it is higher than that.

DELEGATE: I think it is about eleven.

MR. STECKEL: Eleven per cent, I think the Rid-a-Bird process is the only one registered, Endrin is registered for use and registered for use in the perch only and this is just below ten per cent.

DELEGATE: About nine per cent.

MR. STECKEL: Nine per cent. The materials that are coming on to the market, Entex in the form of this Queletox -- this is going to be some place in the neighborhood of --

DELEGATE: It will be twelve, straight.

MR. STECKEL: Straight twelve per cent.

DELEGATE: Spell that.

DELEGATE: This is Q-u-e-l-e-t-o-x,

MR. STECKEL: The anticoagulants are in the experimental stage. It looks as though they are going some place in the neighborhood of five per cent.

DELEGATE: Are these all by weight?

MR. STECKEL: These are all weight measures, that is right. Did we cover all of the materials that you wanted, Jim?

MODERATOR TRUMAN: Phil Spear has a suggestion carrying on, getting into some of these chemicals. I would like to have Phil come up here a minute.

DR. SPEAR: Just as an aside, I think the background to this name Queletox - I don't know this to be a fact -- but apparently it derives from its use against probably the worst bird pest in the world, the quelequele bird which is present in Africa particularly, and I have seen statements where millions - as I recall, seventeen million in one campaign were eliminated in a single treatment of this particular pest bird.

The comment that I did want to make though is to ask if John Ludeman is still here, John, would it be appropriate to ask you whether you have figures with you and would want to comment on any of these toxicants that are presently labeled?

MR. LUDEMAN: I don't have that information with me. In fact, I don't even have a list of all of them that are registered.

DR. SPEAR: It is a rather small list, however, if I recall correctly, and again this twelve per cent, if I recall, will be labeled for a very specific technique as Jim described, on top of a tape, but not for broad use, as we might hope to have it available.

MODERATOR TRUMAN: Thank you, Phil. This matter of using the registered chemicals, I know someone mentioned here a while ago that some of this percentage information might be useful to the pest control operators. It is in my mind equally useful to the health department also. I find that not all health department people mix things according to directions, and not all exterminators do. Any other questions from the floor?

DR. JACKSON: I wonder if Harlan would be able to indicate how he decided where to put his toxicants on buildings. Did you put a little bit of something on every building, or were you restrictive in how you put it out, particularly these contact poisons?

DR. SHUYLER: Contact chemicals are what he was referring to. The question, Bill, is a good one. I will answer the latter part first. It was not indiscriminate usage.

We had had the opportunity of studying the infested areas over some period of time from - let's see -- approximately October 1 of one year until May of the next year before any work was begun; and having been asked repeatedly to come in and check with these people and the interest die out and come back up and so on, we had learned considerable about where the populations were. We tried to use the contact chemicals specifically in areas which were severely infested, regularly infested, and which in general were not easily amenable to H structural change such as use of hardware cloth or even a permanently attached net, or screening material of any sort.

We also, then, you see, were leaving for other means of control, including trapping, repellants, screening, and the food additive materials, for instance, the strychnine baits, those problems which were peculiarly -- uniquely adapted to control by other techniques. Specifically trapping -- to us, this was one of the most interesting observations we made -- trapping could be utilized for control of a few widely dispersed birds over several buildings wherein there was an area lower than most of these other buildings where a large trap could be placed; and by the use of this technique, we cleaned out in approximately six weeks with a visit a week to traps which had ample food and ample water, all of the pigeons, to the best of our knowledge, over approximately ten different large downtown buildings. We then had no more than five to six birds per large building -- I say large -- not the real big ones, but the fairly large buildings with five to six birds per building, saving an awful lot of work, and I am sure maybe we could reproduce it somewhere else some other time., You know, just according to the way you theorized it ahead of time.

DR. HOWARD: I would like to take this opportunity, if I may, Dr. Truman, of calling your attention to a progress report on starling control which has been set in the other room with the names of where you can write to obtain copies. In it, it has one very drastic error which I am sure you will pick up in testing thallium sulfate. We used from five hundredths of a milligram up to five hundred milligrams. It said that five hundred milligrams didn't kill them and that five hundredths milligrams did kill them all. The reverse is true.

MODERATOR TRUMAN: This does make a difference. Okay, you are all aware of that. Make a note of it.

MR. BORTZ: I wanted to ask Dr. Shuyler if you could be more specific in stating your contact poisons.

DR. SHUYLER: At that time, the first part of the program, I should say, the only material that we were aware of or had worked with was the material containing Endrin, and later on, particularly the second phase of

the program, the very last phase of the first program,, we were also working with Bayer 29493 (Queletox).

MR. EBNER: I am interested in two aspects of bird control: first the length of time it takes a bird to die. Is this governed by the percentage of poison it takes in at the time it feeds?

DR. SHUYLER: On the bait materials?

MR. STECKEL: What bird are you talking about first?

MR. EBNER: The pigeon. It has been stated you find most of them within ten foot of the poisoned area - around the baited area.

MR. STECKEL: Who stated that?

MR. EBNER: It was Dr. Truman that said that a bird would fly ten feet and fall.

MODERATOR TRUMAN: I was simply pointing out that birds that sit down and eat some poison don't fly very far if they eat a very heavy dose of poison. Your question was, the bird that eats more poison will die more quickly and I think this is true. I know Jim has mentioned that where he goes down to a half per cent on strychnine that the birds frequently don't die for five or six hours. Of course, I was talking about the poison at higher level and there are reasons for using either in their proper place.

MR. EBNER: In my operations I dread to put poisons on high builds ings because we have found them as far as a quarter a mile away from the places we have poisoned them, and we have observed these birds a hundred feet or a hundred fifty feet in the air, and they make quite a splatter when they come down.

MODERATOR TRUMAN: Our clean living birds out here don't fly that high.

MR. FAULKNER: If you overcoat grain you get a quicker death than if you soak it. We also do a teat on pigeons using six ounces, eight ounces, ten ounces and twelve ounces of toxicant to a hundred pounds to try to come out to a poison, figuring the pigeon will consume fifteen kernels of corn during average feeding time. We have found that in ten ounces of toxicant to a hundred pounds of corn deaths will be obtained in from eight to twelve minutes. Now, this has been work done since 1955. In the City of Boston, last year, they flew a quarter of a mile because these birds are transitory.

MR. STECKEL: Cropped or non-cropped?

MR. FAULKNER: Pigeons - start them from the crop into the system of the birds, and if you step this up to a one to four, you won't kill them any quicker, because it takes the time to dissolve the strychnine into the

bird's system, so you are wasting strychnine if you go one to six or one to eight. If you want to get less of a kill, go to one to twelve or one to fourteen.

MR, GLEASON: I notice that there hasn't been anything said about the method of poisoning the grain. I remember at one other conference it was mentioned that in soaking the grain that it would retain the poison a lot longer, and consequently be deadly for a longer period of time, for an indefinite period; whereas the dusting method or - I guess that would be it - dusting method, external treatment, a coating, yes, would wash off, with the first rains and would be harmless in case the birds didn't eat it. Is this true? Did I get that right? Could you elaborate on that, please?

MR. STECKEL: Maybe I can help him a little bit on that one.

I think we have got two principles involved: one, it has to do with the time it takes to get the toxicant off of the carrier to the bird's system, and if you have it coated on the carrier, the kernel of corn or kernel of what, it will break down and work into the system more rapidly. If it is impregnated into the grain and the grain has to be broken down before it becomes available as a toxicant, this extends your lethal period of time, or the time it takes for the bird to die from the time he has ingested this kernel of corn. And the other thing you are talking about is the safety factor. Once you have it impregnated into the kernel, it is in there, and it will stay in there for a pretty indefinite period of time. If you have it coated on the outside of the kernel of grain, or the carrier, you do have the possibility of rendering this grain non-toxic by washing or flushing or wetting it down real good. You can pretty well take that coating away from it, and it comes down to the point of a pre-bait material and this would be a safety factor.

MR, BECK: A couple of comments about this business of coating grain. If you are going to use a starch coating or lecithin coating, you can forget about, a safety factor because you just don't have it; it must be a water soluble coating that is immediately water soluble, not something like lecithin or laundry starch that requires considerable soaking.

MR. STECKEL: You are talking about corn syrup?

MR. BECK: Karo syrup or the like.

MR. HOCKENYOS: I'd like to ask Dr. Shuyler - as I recall it Harlan, it was about three years ago that this big project was carried on, and I believe there has been no continuation of the work, so I would like to know what, the general results were. How many birds came back; how long did --- we might say - the job hold up?

DR. SHUYLER: George, as you know, the question you are asking deals with the habits of birds quite specifically. I don't think there is any final answer. Part of the area is under control now by Fred Batson's firm,

who is here. His total program is fairly sizeable. I. think it is fifty blocks, Isn't it, Fred? Ours was 69, but it is mostly a different fifty-block area than our sixty-nine.

This would be -an indication,, I believe, if I remember right - there was a total of nine blocks included in your fifty, Fred, that were in the. original program. I am not sure. Do you happen to know? Do you have any recollection of this? I believe it is nine blocks. These are, as I remember of it -- four of them in one block, two in another, and then three different one-square-block areas. This would be an indication, of the amount of reinfestation, George, right there, in the fact that the city didn't choose to go ahead with the over-all program. Surprisingly, some of the buildings are still completely free of birds. The particular part that I think is the more significant, in terms of long-range bird control, is the fact that more buildings are infested now than were originally, but with only one and two-bird infestations for the most part. Yes, there were some areas of high pressure, where they have asked this continuing program to go on, and I think this indicates something to us, George, about our habit patterns. I believe it indicates that, there, is a possibility that when birds are forced to seek new habitat, and they don't have, shall we say, leaders, guides, visible evidence of other birds at a particular building, they choose any thing that is apparently suitable, and I suspect that over the years, if there is no further control in that area, I suspect that there will be some buildings again that build up high infestations and some of the current buildings infested will, be left alone entirely, I guess. But I think it will be several years in its occurrence; and there has been no control in most of these areas from May, 1962, a two and a half year period now.

MR, HOCKENYOS. It might interest the group here -- we have a city area of 69 square blocks; in Springfield, we have only 30 square blocks under contract, the downtown area, and we are in our sixth year on it; and it has gotten to be so easy, frankly, it gets a little boring. Every year the job gets easier.

We, have, dropped the price every year, too, but not quite as fast as the cost went down, because I wanted to recover a little of that research money; but the point I am trying to make is this: First of all, I am satisfied that community projects are the kind of thing - give you an example. We are taking care of the whole downtown area of Springfield this year for \$2140. Before we had downtown control, area control, the individual building operators were spending about \$5000 a year. Maybe that is not good business from our point of view, the point. of view of bird control. Even when they were spending five thousand dollars to take care of eight or ten buildings, the rest of the city was loaded with birds.

Now, the whole area is relatively free, for the cost of \$2140 a year, I firmly believe in the merits of community control, and once it is achieved, it should be continued. That is the satisfactory answer in my opinion to downtown bird control. You can go to Springfield right now. You are going to find 65 to 70 pigeons. There were about 20 last spring. In summer we

haven't got time to work on them, but by Christmas we will be back down to about 20 or 25.

DR. JACKSON: I think probably we have raised more questions than we have solved, but you are beginning, all of you, to get acquainted with some of these people who have had experience with these problems, and I hope you will begin cornering them at various points around the building around the meal tables, and begin to pick their brains as best you can. I think this is where the real exchange of knowledge will be taking place.

Tonight there will be a rather informal format. There will be a series of movies in this room. We have, starting at seven o'clock, a movie, not designed specifically for control operations. It is one of these movies of general interest, pointing out the ecological aspects of birds. It has taken the mourning dove as an object of study and goes through the whole life of the mourning dove from an ecological point of view, and I think if you have not seen this movie - it is often shown to sportsmen's clubs and this sort of thing - that it would be well worthwhile to take a look at it; and it will give you an appreciation of all of these various factors that we have been alluding to that are important in the life of a bird.

Then, about eight o'clock, we will be having a movie on histo, which is a very interesting follow-up for the discussion this morning. Then the National Bird Control Company has a movie on the use of their product which we will show, oh, about 8:30 or so.

. . . The conference adjourned at 5:10 p.m....