

## FLIGHT MANAGER AND CHECK-AIRMAN TRAINING

Capt. J. E. Carroll\*

The industry, and specifically United Airlines, went through a period when things were going just about the way we wanted. It was a stable period from approximately 1970 to 1977. Things were going well operationally, but our pilots called it the period of stagnation. We had very little movement, very few promotions, very little attrition through normal retirement or people having to retire because of illness. We did realize one benefit, however, because with this stagnation we were building up a very high level of experience in our cockpits. As a result of this lack of movement people were in the same airplane, the same seat for a long period of time. And obviously, when you do the same thing over and over again you should become more proficient and there should be fewer incidents and accidents.

However, in spite of things going so well we found we were beginning to get a little uneasy. Things were really going very well, but we began to worry just a little bit because they were going so well. We reasoned that if it's going this well, the only way it can go is down. Every airline, as J. D. Smith, our resident expert says, has a safety footprint, and what it tells us is that in a certain period of time you can anticipate that you're going to have an accident. It varies between airlines, but you can look at the record and say in "x" number of months or years you're going to have a major accident.

On United Airlines we had a safety footprint of 4 years between major accidents. At this time we had gone 4 years and hadn't had a major accident, so with each succeeding month we wondered just what we were doing so well, or what was about to happen.

Other things were giving concern. We were becoming, as far as the crews were concerned, rather complacent — perhaps because so many things were being done for us. The automated flight planning, the extensive radar vectoring, INS systems; all of the conveniences and the advances of technology were really leading us into the position of taking for granted that things were going to be "okay." As an example, I think mention was made in one or more of the presentations in the last day or so of the Dulles incident when a crew took a vector and an altitude for granted.

All these things started to cause a vague concern, and then we found that the situation was about to be compounded. We passed the period of stagnation, and we started to expand. The attrition rate was beginning to increase and we started what Bill Traub referred to as the new-hire program. We anticipated, as we approached the new-hire program, an addition of 1,800 persons over a 5-year period, or roughly 360 persons a year. With this movement we found we were losing the advantage that we had of stability

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and experience, because with the pot being stirred we had new people in all of our seats in all of our airplanes.

We could conceivably, and I'm quite sure it will continue that way for some time, find within a cockpit a captain brand new to the airplane, a first officer flying his first trip after having moved up from second officer, and a new-hire second officer in the third seat. And the new second officer could in this case be a female. Depending on the attitude of the crew, that could exacerbate the situation a little more.

So we all of a sudden went from a position of stability and experience to one of mobility and low experience.

Toward the end of this period of growth, we also found a lot of incidents beginning to occur. The winter of 1976-77 on United Airlines was the worst winter we had had for a long, long time. There was ground damage to equipment, off-the-side-of-the-runway excursions, with no big damage to the airplane, but at much too great a frequency, blowing out windows in the terminal, going off the end of runways — we would go 3 or 4 feet off the end of the runway with no damage to the airplane, but more than a little embarrassment to the crew.

We were apprised by our Western Division vice president who attended a meeting in Hong Kong that Japan Air Lines said they had had exactly the same experience about that time, with an increasing number of incidents. We were not unique, and there was an overall concern in the industry.

We then conducted what we call a road show, taking all of this to the field to tell people about it and what we thought they could do about it. And we'd like to believe, since we spent three quarters of a million dollars doing that, that the road show was very beneficial because our performance the next winter was a big improvement.

We had one accident at that particular time, the one at Salt Lake City, and it was in the vein of what we've been talking about here — poor resource management and taking for granted what you were told.

But we at least thought that the road show had helped us in the area of minimizing, if not eliminating, our incidents.

And then the winter of 1978-79 turned right around, and we had a problem all over again, with one more accident that involved resource management, we believe. I realize the final report isn't out, but the preliminary report, which Bob Helmreich quoted although he didn't identify the accident, indicated that that was perhaps a contributing factor to the accident.

Throughout this period uneasiness was growing in the industry, and the ATA Training Committee came up with the expressed need for what they called a more meaningful line check. Due to a feeling at that time that perhaps we

were not being as attentive to our line-check supervision as we should, that because of the stagnation — the same crews, the same people working with the same check-airman — we were becoming comfortable with each other, and weren't addressing as attentively as we might, the need for correction.

We put all of these things together with the recognition that with the sudden turnaround and the expansion we were having, we were also assigning a lot of new supervisory people, new flight managers as we call them. They were having to work with a lot of new crewmembers in a new environment for those crewmembers, while they themselves were new to the job.

Now, what we recognized at that particular time also was that our approach to career planning had been based primarily on what Bill Traub covered by saying that when we hired someone we hired a captain. We looked at them in the past and said, "When we hire you it's in anticipation that you're going to be a captain, so we're trying to hire good people." Our career planning and succession planning, as far as management was concerned, only carried it one step further. If you hire a good captain, naturally you're going to have a good manager. That's a rather false philosophy, but nevertheless I think that's what we premised it on. And we really didn't carry it much further than that.

I think we also recognized that what we had done in the past as a way of selecting our managers was more political than it was objective. It was a buddy system to a degree. It was a case of who knew whom in what particular area, and they then became the manager, again premised on the fact that if they were good captains they would be good managers.

With the recognition of all of these problems we decided that with the numbers of people that we had on our airline (we have 9 bases, 6,000 pilots, a few more than 2,000 captains) — that to try to address directly to the crewmembers the curing of a lot of these things was probably just too much to bite off at one time.

But we could take it down to a smaller group of people — our flight management. And if we did what we should have done a long time ago for them, trained them better, then they would be in a position to pass on what they could to the flight crews.

So the subject of what I'll be covering today is twofold. One program was the specialized education and training of our flight management people. And the thrust was to aid our managers in helping our professional pilots be more professional. We weren't going on a witch hunt, we weren't out to get people, we weren't out to try and crack the whip, we were just trying to smooth out our operations by helping professionals be more professional. That was the thrust behind our management training program.

The second thing that we recognized, for a variety of reasons I'll cover later, was the rather urgent need of our crew members for some training in command or resource management. We initially termed it, and we are adjusting our thinking now, as command training for pilots.

Management recognized this need, the flight crewmembers themselves recognized it. It was being asked for to a degree that was disturbing, because obviously it point out to management that we hadn't fulfilled a need. First, however, I'll review the program we evolved for the training of our managers.

To understand where this fits, let me give you a very brief description of how United Airlines operates. We have, as I said, 9 bases. We divide them into 3 divisions, with a division vice president. Each one of those division vice presidents then has three bases reporting to him, headed up by a director of flight operations who has flight managers working for him. In a couple of our bigger bases we have an intermediate level called flight operations manager who have some of the flight managers reporting to them.

As early as 1973 we recognized that from the second level of management on up we had 25 persons, all but one of whom were going to retire in 9 years. That's a pretty good turnover.

We also recognized that as we started to expand we would have even more people pumping in at the bottom with a need to be trained. So, hopefully, whatever training we could give would help them, as they progressed in management, to help others who would eventually work for them.

Initially, and going back to the period of time when I was selected as a manager we used to have essentially a simple way of picking managers. He had to be and this, of course, is self-fulfilling, a better than average pilot. He had to have some skills in interpersonal relationships which would have been evidenced through ALPA activity and in some cases, also applicable to myself, in continuing military activity, and have a reputation of being a good commander and one that people could work with.

With that as a list of criteria to use, I reported to the flight office and my manager said, "Good morning, it's nice to have you with us." I said, "Fine, what would you like me to do?" He said, "Your desk is back there, go to work."

And there was my indoctrination, there was my training, there was my selection, and I was told I now had 70 crewmembers assigned to me and I should supervise them.

I said, "What specifically would you like me to do?" He said, "Well, most of your work is going to be going out and giving line checks. You have taken them — go out and give them."

That was our program. They paid people a lot of money to do that sort of thing. If they did that in any other industry, I think they'd fall all over themselves with laughter that you paid that kind of money and gave that kind of training to somebody in that position.

But we now recognized, very forcefully, that we needed a flight management training program. We put it together in five phases. Phase one, as we call it, was devoted to the basic operational concerns of a flight manager in dealing with his people, plus some industrial relations work and some philosophy and psychology that would address itself to the supervision of people.

We decided we would basically want to put together a course for management candidates but we had the recognition that there would be problems if we threw these neophytes into the field with all this highfalutin training, philosophy and theory we had given them, and they then got into a domicile with some of the old hands, the managers who had been around awhile who would say to them, "What are you doing?" "Why are you pursuing this particular area in this way?" And they'd say, "That's what they taught me." They'd be told, "Oh, ignore that, we don't do it that way."

So what we did was cycle our incumbent managers through first. But ultimately it will be a course for management candidates.

With known attrition, in a given year we will train the number of candidates that we anticipate we will have to put into the system in the following year or 6 months. We have put some candidates and some incumbent managers through these classes and the mix has been good because the exchange is good. The group shares experience with the incumbent managers, and they get the enthusiasm of the candidates.

Briefly, what we cover in the course is first, an introduction by the senior vice president of operations to attest to the importance of the program. We do some training in the job of managing given by some professional teachers and instructors that we have in our headquarters training group. We also cover what we basically call our "den concept."

We call our flight managers "den mothers." We assign 70-some people, up as high as 90 or 100 depending on the domicile, to one manager and he's responsible for all their activities. We treat what we call the "whole man concept," not only operationally, but personally. The flight managers are concerned with their personal problems as well as their education in other areas.

During the training we have a "hangar flying" session on one of the evenings in which people get a little more relaxed, (the attitude adjustment hour), and exchange opinions. We also go into some personnel policy so that they can learn to handle the personnel situations.

We review the process of evaluation which at first is a theory-type approach. We cover three operational areas that we call the operational approach to checking, which is given by our director of flight standards and procedures, or one of his flight managers. There we emphasize the need for objectivity in checking on proficiency checks and rating rides, which our managers will handle at some time. We point out that when you do take an

operational approach to a check, you ask questions on orals and approach the subject from the cockpit out rather than the system in; that is, "What can you do about it?" "What's your ability to handle a particular situation?" We encourage them to ask the questions in that way rather than esoterically, and to avoid getting deeply into a system over which they have no control.

We cover — and I have handled this myself — we cover enroute checks, and then move on to that more meaningful line check. The reason I handled this one initially with the incumbent managers, quite candidly, is to emphasize how seriously the company felt about what we were after, that we really meant what we were saying. The senior vice president felt that this was best done by having an officer of the company convey the information.

We wanted a little more professional approach to enroute checking. "Call them as you see them." "Record what you see." "Bring to people's attention the necessity for change." Not just to write things up, just to put something in the record. As most of us who are in this business recognize, the worst thing in the world we can have is something in our record that somebody can go back and look at.

So we bring to their attention that this approach is what we want to avoid. But given the recognition that these sorts of things will take place, we point out that unless we record them when we do see them we sometimes don't get people's attention.

We all indulge in an ego trip too many times I think. I can only speak for United Airlines people, but it's probably true of everyone. When you supervise pilots, everyone thinks he's the world's greatest pilot. You know, "You can't be, I am."

But when you take that approach as far as supervision of people is concerned, the ego spreads to the point where you say, "I notice this, I recognize this. But I'm so good that I'm going to be able to bring to this individual the recognition of what he has to do to change, and he will change because I'm giving it to him, and he'll be better for it."

If you indulge in this ego trip, almost every time you do, the first ride is for free, because you always say to yourself, "The poor guy never had the opportunity to be given what I can bring to him, nobody else ever told him this I know, and now that I have told him, it will never happen again."

I'm going to digress for a moment on this ego factor. Lee Bolman might know this story, I don't know. I like to tell it because I think its very apropos of the ego that we all indulge in.

This has to do with John Kenneth Galbraith. When I went to the Advanced Management Program at Harvard, I heard this from one of the Harvard professors. John Kenneth Galbraith is supposed to be the biggest egomaniac

in the world, and I guess his students were aware of this to a very high degree, and they got a little sick of it after awhile. One of them, trying to bring to his attention that he was very egotistical, chose Christmas to send him a birthday card. But he was not at all taken aback. Coming back to class after the holidays he apprised the group of students that he had received a birthday card, but obviously somebody made a mistake — they should have sent it to his son.

Now, sadly enough a lot of management people indulge in the same type of ego trip. "I can handle anything as long as I have the opportunity, and they will be better for it." Then he forgets that the individual may change to another airplane, to another supervisor, and start the process all over again. Or, as one of our enterprising flight officers found, all he had to do was transfer from domicile to domicile to get out from under the problem.

At any rate, we do cover all of this; we also cover overall evaluations. At the end of the year we write what we call a "green sheet" — it's a personnel evaluation.

And at that point we emphasize again the need, in handling these 70 or more people assigned to us, for calling them as we see them, for having an objective appraisal at that particular time, because the only thing that remains with the man through his career is that annual appraisal.

We also train in industrial relations, which Rod Gilstrap has handled many times, and so has Bob Crump. And that's a very interesting day and a half session. We cover contract interpretation, discipline and grievance, and a new one, the employee assistance program, which is the approach to problems of people who are involved in alcohol dependency.

We get into management counseling skills, with role playing, so they can see how they handle themselves in situations or how they should handle themselves.

We review accident and incident investigation, so that it's done correctly and we learn from it, not just go through the paper work. John Perkinson is involved in our safety department and can attest to the fact that too many times we have put together an accident or incident investigation, and it's just been a case of getting the paper work out of the way. We haven't really learned from it, or disseminated what we did learn to the rest of the crews.

To wrap it up, another session is led by the senior vice president to get the reactions of the people; the reactions so far have been very, very fine. What they say is, "We have needed this for a long time; no one ever told us this before."

We include a little precourse study and a little homework while they're there during the week. It's in our Training Center in Chicago, so it's away from home, and they can address themselves more intensely to the subject.

The second phase of our management training is check-airman training. We usually give that just prior to the assignment of the man as a manager. He spends 5 to 7 days in Denver learning how to be a check-airman giving proficiency checks and rating rides.

If you have never thought about it, it's a very tough thing the first time you appraise a flight crew. The only thing most of us could ever bring to an appraisal of a flight crew is our own standards, the way *we* fly.

Consider that most of our people who are assigned as managers are well above average pilots so that they can have credibility in the operational supervision of other people. When you do approach the task you have a very high set of standards, but you really are only looking for a passing performance of an average pilot.

No pilot wants to be called average. It's the worst thing in the world you could put down, "He did a good, average job." That goes crossways in your throat. But you have to get into the atmosphere and recognize what it is that is a good solid performance, and it is a learning experience. You also have to learn how to communicate with the people in a positive sense, so that it's constructive and you'll be able then to transmit reinforcement to the individual so he can benefit by it.

The reactions to that phase of training are always very positive. They're always a little shaky, because it's a little tough the first time people go through it. But it's a very beneficial thing.

We also give them right seat time — offset approaches so that when they're out shot-gunning people, they're in a position to recognize what they should be looking for and how to correct for it.

The third phase of our training is what we call our Executive Offices Seminar. This is similar to what a lot of you have discussed in the past day or so, in which we cover all of the other departments in the company.

Who is behind that voice on the phone, who can you call about a situation. Also the total recognition that — again, going back to the ego position — most of the flight operations people have. "You are not the only ones in the world who run this airline, it takes a lot of people to bring that product to you. And when they do bring it to you, you have to do a good job so you can bring the passengers back again."

All of those things and all of the departments in the company are brought to their attention in the week of training at our headquarters in Chicago. It is done either just before their assignment as a manager or within the first 6 months of their assignment.

Phase four of the training for managers, which we are working on right now, has to do with enhancement modules. This covers material in the course that perhaps they would not have been in the position to absorb initially,

and that they wouldn't have been assigned responsibility for in their initial assignment as a manager. Such things as hijacking situations, the identification and selection of future management candidates, motivation and productivity — a lot of things preparing some of our people for second-level positions. We cover industry and agency media involvement, and business principles, since they start getting involved in budgets, etc. Also, some hazardous materials training.

The final phase of our training, and one that we have gone into very little so far, is going to be devoted primarily to the people who show real potential for advancement to other positions and who are going to be given outside training. Such things as the advanced management program at Harvard or Stanford — a course run by Chicago University to which some people have been sent and, of course, Michigan. We weren't too enthralled with the one at Michigan but in case anybody's here from Michigan, it's only because it didn't serve our purpose. But we are taking advantage of outside training. So much for the flight management aspect of training.

Now to the need for command training. As you have probably recognized if you have worked at it, and if you have a program at the present time, a lot of the things that you people had in your command courses we are giving in a different way. Our EXO seminar covers the rest of the company. Some of you people have that included in your command training, but we are referring to the specific subject of command, human resource management.

We at United have been talking about it for a year and a half. Corporate approaches to things being what they are, priorities being what they are, it takes time to get people's attention. We talked about it in February of 1978 but it wasn't until February of 1979 that we had our first meeting of the task force put together by the senior vice president of flight operations to address this particular problem.

We found, finally, that not only was management aware of the need for this command training, but also that the last two accidents we had had highlighted the need. Some ingredients in both of them suggested that the management of resources within the cockpit perhaps could have precluded the accident. The second accident really got our attention, so we started to work on it.

Then the strike intervened, and we really weren't able to do very much until the strike was over. We finally had the third meeting of our task force here, Monday, of this week, and we intend to meet again tomorrow morning for an hour or more and then again tomorrow afternoon at the conclusion of the conference to condense what we have been able to pick up from you and what we perhaps might want to use in our approach to command training.

We have asked a lot of questions. We took a sampling of our people and we had personal letters from some people indicating the need for this training. We put all this together and went out with a questionnaire, and the answers we got back were rather easy to follow.

Some of the general conclusions were that people believe the ability to command or to lead can be enhanced. They believe that a command or leadership learning experience should include philosophy, psychology, and interpersonal relationships skills. Also some of the basic management and human resources management skills, and decision making and problem analysis skills.

Specifically and in descending order of priority the responses state

1. That it was necessary to have an understanding of people.
2. There had to be a willingness on the part of the commander to use the rest of his crew, and of the crew to participate, cooperate, and communicate.
3. Interpersonal relationships skills are obviously very necessary.
4. There had to be a recognition of the necessity to accept responsibility. The knowledge of job procedures, the operational aspects were very low on the list.

Let's consider where we are right now and what we're going to be doing. It is a big problem to make 6,000 people aware of the environment and atmosphere necessary for good command. I recently picked up an expression, "When you're going to have to eat an elephant, the best way is one little bite at a time." We have an elephant here, with 6,000 people plus the cabin crew people to increase their awareness of the problems.

We anticipate that probably the first people we are going to train are, again, our managers. When they are aware of what it is that is necessary, they can look for it, better assess it, and then more constructively communicate the need for adjustment on the part of others. We will take it in steps. Perhaps we will do it next with our new captains, and then take it on from there.

We think one of the things that's going to enhance our ability to do this sort of thing is the fact that we have the CDC PLATO system, which American Airlines is also involved in using. We have gotten approval from our Board of Directors to buy our own computer and put in our own in-house program. If you're not familiar with the PLATO system, it's a computer-managed and computer-assisted program with which we can do individualized training. We are going to extend its use to our domiciles where we'll install terminals. We anticipate starting that the first of next year. Once we have the terminals on the scene in the domiciles, then we will have the ability to bring in groups of people without having to bring them to one central location, and we'll be able to do it much quicker and get better exposure.

Obviously, what we teach is going to have to be different for each group of people. But, nevertheless, we anticipate that will enhance our ability to do it.

Right now we are first reviewing the question of what we'll include in this course. As I said, it will be theory, psychology, the practice of command on United Airlines. Then the methods that we perhaps can use to give this kind of training, including role playing since that strikes us as being one of the best ways to proceed. We might even have films to show at the domiciles.

But we do believe without question that it has to be done with all of the people who are involved in the operation of the airplane, the cockpit *and* the cabin crew, so that they will all recognize that command is a very lonely position, and that when it comes times to make a decision, it may not always be popular with everyone. But if we can educate all of the crew members to the recognition of what it means to be a commander, and what it takes on the part of the rest of the crew to help that commander, the position will not be quite so lonely. When it comes times to make a decision, support will be more readily available — more cooperation will be evident.

In closing, one of the things that I have recognized in listening to what a lot of you have given us as the benefit of your knowledge and experience, is that there are distinctions to be made between airlines. What can and can't be done depends on the economic constraints that a lot of us are confronted with, and also the size of our airlines.

I've always been one who has great admiration for the Swiss. Anything they do they approach with great finesse, great skill, great attention to detail. Anything they manufacture they do on a limited basis so they can control the quality of the product. In their case, Nick Grob indicates that he handles 24 captains a year, and he uses, I believe, 50 route-qualifying captains. If I equate that with my operation I'd be putting through 15 times as many captains a year, and I would need 15 times as many route-qualifying captains. Also, I do it in 6 weeks, and he takes 9 months. I'm afraid my quality control is not quite as good as his. I also have different economic constraints in being a private organization. But we are all after the same end result — we're looking for the best product we can possibly turn out.

We hope that the two programs that I have outlined here today will be as good as the best, and in not too long a period of time.

#### DISCUSSION

CAPT. BEACH, Eastern Airlines: Talking about recruiting managers, and the idea of someone who knows someone who would be a good one, we have probably all done that since year 1. Since you find that less than acceptable, how do you recruit? Where do your managers come from?

CAPT. CARROLL: We have in our group here today at least one man who has not been at the job too long, and he may correct me when I say this. What we do now, in recognition of how bad our system has been in the past, is

screen the people in each den. Each group of pilots assigned to a manager is screened by that manager for the potential that he sees in the individual for being a manager. The next step is to discuss them with his director. If there is no objection by the director to the use of that individual as a potential manager, then an interview is conducted to find out what his interest is. If he is interested, then we will process him through a management evaluation by our people in Chicago, psychological testing, etc. Not too dissimilar to what we're talking about with the new hire approach, except this is new management. If this all pans out — we get good feedback from the psychologist and the candidate is still interested — we then put him through this management training program. It could be that currently the best candidate for a vacancy is from Miami and the vacancy is in Seattle. This would mean tearing up the individual and his family, paying for the move on the part of the company to get him out to Seattle and then perhaps when he gets into the job discover that it wasn't his cup of tea. He didn't like being a manager.

So, to avoid this, we are still in the position of using primarily people from within a domicile as much as we always have, but now we do it on the basis of a much more selective, much more detailed approach. Not that, "I've known Joe all my life and we play golf together and we go to cocktail parties together and we're good friends and, therefore, I'd like him to work for me." That's how most of it was done in the past, including second, third, and fourth level promotions, but not anymore.

Since 1976 we have had a senior vice president who takes an entirely different approach to succession planning. The ears of people who are on that succession plan should burn because we go through a discussion several times a year on those individuals. We discuss whether they stay where they are in the plan, or whether they are moved off.

I'm very proud of the fact that we have a very fine system right now. It's been in operation for 3 years. About 5 years from now it will be what it should be. We've got it projected, on a tentative basis, 5 years into the future to account for all of the recognized attrition that's going to take place.

That's also how we program the training through various phases for a manager, based on the potential they've shown.

CAPT. BEACH: May I ask you one more question on that. When you come into the program as a bottom-level manager, have you a goal that you're looking at, or do they just float as their ability dictates?

CAPT. CARROLL: Personally they may have a goal. The company has no goal for them at that particular time, not until they prove themselves. Until they find out if they really want it, and we decide we want them to continue. It is no bad thing for an individual to go back on the line. I know your system is a rotation system. Economically there's not that much of an advantage in being a manager and there's no question the working

conditions are a lot worse from the standpoint of time off. But the company has a goal for them when they start to show potential. They'll probably recognize that they're showing that potential by the assignments they're given, by the training that they're given, by the challenges that are addressed to them. But that takes time. At least it's a formalized management program and there are products of that program in this room right now. Four of them that I can see, who have been part of that system since it started, and I think they're pretty fine people. We're doing a lot better than we were when we first started out.

JOAN GALLOS, ASSISTANT TO LEE BOLMAN: You mentioned a problem that was referred to yesterday, namely, the growing potential problem of cockpit cohesiveness with the introduction of women and also some of the minorities in the cockpit. I wonder what you're doing in the redesigning of your training program to surface and deal with some of those issues?

CAPT. CARROLL: I don't know that I can say we are addressing it specifically in the area of females and minorities, because I don't think we ever want to address it that way. I think what we want to do is address it as the cockpit. Of course, we have to have the recognition that there are ingredients that go into it, but we don't want a program that says, "For this particular manager, who may have women assigned to him, a different approach to things is needed."

So far, we have 21 women in our system and 48 or 49 minorities. I'll address myself specifically to the women. They have done an outstanding job. One of the women in our first class was the daughter of one of our DC-8 captains. At that particular time about 3,500 or 3,600 people had been processed through the system and had been tested, and she had scored the second highest of the 3,500 people.

I honestly believe they're doing a fine job. I don't know how many of you read the book "She'll Never Get Off The Ground" written by Rod Serling, but that addresses itself to the first woman airline pilot and all of the emotional involvements. The problem is there, but I don't think to the degree that it's been magnified. What we are doing to address the problem, without being specific about females and minorities, is to address the cohesiveness question in the cockpit in general. We think that as a result of our command training approach and the exposure of all the other people in the cockpit to the same information, all have an awareness of the arena in which we operate and the need for cohesiveness. We have examples of what can take place if we don't have the cohesiveness in the cockpit. So we don't specifically address that particular area, because we don't think we should. We think we should take it as one problem and not two.

MR. MURPHY, NASA: You mentioned that you either are or intend to train in decisionmaking and problem analysis. Is some of that being taught now in classes? Would you say a little more about that, what kind of success do you have?

CAPT. CARROLL: We will address it in the command course. I've been through a course on problem analysis and decision making. We will not address it as it pertains to the general question of problem analysis and decision making, but more specifically to the type of questions and problems that would arise within a cockpit.

We will present some theory on the subject, and then we'll go into role playing. To forecast the success of it, I think is something we are not going to be able to do right now. I think we'll be good at it. Not because it's us, but because of the people we're working with. All flight crewmembers, those in the cockpit specifically, are a cut above the average, in many respects. They also have had a pretty high standard of living, so they move in pretty fine circles and pick up a lot from their travels and people with whom they associate. I think they're an easily trained group and they're hungry for this kind of information. I think we should be successful.