CAPTAIN DEVELOPMENT TRAINING AT US AIR

Stan Fickes, USAir

CAPT. FICKES: Well, I'm Doc's front man, so I go first. I'm really pleased that our cardboard trainers that we use at USAir are still in vogue. We use them a great deal, and they are very effective.

It's been an interesting morning. The entire agenda that John and Dick and their associates have put together is going to be of interest to all of you. I am proud to be here. I am pleased to be involved with your program.

And by the way, this is the commercial portion of it. USAir, as many of you are aware, has a very strong association with your organization. We date back to 1967 with Association of Commuter Airlines. There are now 12 in our group, and we strongly support your activities. End of commercial.

It was about four years ago that I was seated in the audience of a very similar seminar on resource management up in San Francisco, frantically taking notes and wondering how in the hell am I ever going to develop something that will be effective for our pilots, our macho pilots that eat training programs. They subsist on training programs.

So, really what I think the next couple of presentations will deal with is methodology, and that's really the secret. We all know what we want to do. It's how you do it. And I think once you determine that you'll go home and you'll do something, and it will be effective. Believe me, whatever you do is effective. Once you do do the program, then John calls you up and invites you to come out here and present your brand of magic.

So without further ado, I'll really get into the meat of our full presentation. It's broken down into two parts. First, I'll provide a brief overview and background of our training program, and then Doc Sellards -- as I say, I'm really his front man -- will really get into program activities, the curriculum and tell you some of our experiences in the past four years.

Late in the 70's, USAir began to enjoy a return of growth and expansion which had stagnated for several years due to the energy and economic conditions. When it became

apparent USAir would begin a long range upgrade training program for captains, management recognized an opportunity to introduce specialized training in leadership, stress management, interpersonal skills and subordinate assertiveness.

Our industry was aware of the air carrier accidents revealing a principal factor to be the lack of effective flight deck management of available resources by the flight crew members. The industry had experienced numerous accidents in which the crew concept had failed because of lack of coordinated effort and crew member lack of communications of their observations.

Following the 1979 NASA industry workshop, Resource Management on the Flight Deck, we felt enough information was available to develop an effective training program. Our customer services department had several training programs, which I reviewed along with several proposals from outside consultants. Also during this time, I had discussion with our ALPA Training Committee to keep them informed of progress and to get their inputs.

Union support of and participation in any important element acceptance of innovative training is very necessary. You have to get the union behind you, if they are a factor in your particular operation.

We launched our first program for review by a committee of 16 supervisory pilots and our ALPA training committee using a consultant who had modified a customer contact proposal. Well, unfortunately it sank very quickly into a sea of criticism. The proposal was very general. It was designed, as I say, for customer contact, a lot of philosophical approaches and not, what we would call back in Pennsylvania, meat and potatoes. Pilots are technically oriented, highly instrumented, and you just cannot feed them a lot of philosophy.

About that time, I met Dr. Sellards through contact with the local university, and we had some rather lengthy discussions on what we were trying to do, the objectives. He reviewed all of the material that was available at that time, and there is lots of it out there. Material from workshop, from IATA, flight safety, FAA and accident reviews.

It was interesting to note that Doc immediately drew a parallel between pilots and physicians. His background included teaching medical students to deal with the God-like role they are forced to play under stress situations.

After we had gone through the study and determined what

we wanted to do, I then arranged for Doc to spend several days out on the line flying in the normal line environment. I might tell you I was particularly happy his first morning when he arrived at the airport -- and this was not by design; it was just by circumstance -- there was a cold front going through. So he pounded through that cold front three times in one day, ended up in Providence rather than Newark, got up the next morning at 5 o'clock and ferried the airplane down to Newark to begin their day's activities, and had a first-hand view of what flying operations are like. Not a lot of theory but a lot of practice.

Well, following this period of orientation for Doc, in which it was not only the line operation but simulator and ground school and so forth, we developed our initial program which was designed for supervisory pilots. We determined that it was important that we start with the supervisory pilots, give them a course that would deal specifically with their role as instructors. And we gained a lot of experience and feedback information from that particular program. It is a requirement that all supervisory and check engineers go through this particular course.

Our next phase was to introduce a three-day training course for student captains. We felt that that was prime ground to begin our training, to introduce it. We got a salty old captain that has 30 years; that's "old Joe," quote, unquote. He's been doing it well for 30 years, and it's going to be very difficult to win him over, certainly in an initial program. So we felt that we were right to work with the student captains.

Our first day consists of a brief review of technical subjects, and we use a couple of buzz words here, technical and nontechnical training for our students. We deal with the flight ops manual, op specs, FARs, weather minima, that sort of thing. Then we have visitations from key personnel in the various departments; i.e., our air traffic factors, maintenance, systems control, customer services, station personnel, to really present an overview of their functions, the interaction and the relationship and where the breakdown of the system occurs between flight crew members and the particular department.

We also include with that first day's presentation a considerable amount of handout material. We've developed a handbook; it's called "The Captain's Handbook." It deals with a lot of information that he will find useful during training procedures, et cetera, et cetera. Doc has developed a handout that is a fairly lengthy book entitled "Behavioral Sciences for Flight Crew Members." We have self analysis testing in there, and I'm not going to really get into that too deep because I thing Doc will, but that type of information is contained in the handbook along with

testing and information on weather minima.

Really, the first day material is a review, and it is designed to give him information to get back home and do a home study course.

The second day begins with a presentation by one of our senior supervisory captains on various management styles, and it includes a managerial grid which he has designed for captains. He then discusses several accidents which we believe involved goal oriented versus group oriented captains. This presentation serves as an introduction into Dr. Sellards's lecture on leadership and resource management.

The third day, the director of flight training opens our session with a presentation on safety and an audio-visual review of several air carrier accidents. He attempts to project the class into scenarios in order to develop and foster a discussion of their views on crew concept and interaction. This is well received and generates a wonderful learning process for the group. It also serves as an excellent introduction into Dr. Sellards's second presentation.

That's a brief overview of our captain development training. We feel that it is a very effective program. Partially it's gauged by the student response. Hopefully, it will prevent accidents. As I say, we believe it is an effective program. It reinforces our flight training where we stress the importance of crew concept. To date approximately 350 captains or a little more than one-third of our captain roster has completed this training.

I'd like to conclude with just a few brief observations which I made during our program that may be of benefit to you. The first one is that strong support for nontechnical training must exist at all levels of management as well as union support. The second is that flight crew members may have difficulty understanding the application of nontechnical training into their cockpit environment. However, they do have a very strong interest in behavioral science which can be applied to the domestic situation. Students quickly identify where training would be of merit in their personal lives; i.e., in many cases they may have children at this point that are in their late teens or a girlfriend that is giving them a problem or a wife or whatever, but they do very quickly leap over into the cockpit situation.

Another point is that supervisory personnel should receive additional specialized training that deals with their role as instructor and their interaction during training.

Training should be conducted in a nonthreatening environment. This is very, very important. For example, the self-assessment type of test must be just that. You've got to use a nonthreatening format, let the student do his own testing, look at his own results.

Another point is that you should not evaluate student action or develop profiles of individuals during this type of classroom training. At the end of our program, we use an anonymous type of assessment form for the students to evaluate the effect of the training, their particular recommendations and so forth. We feel that that is also very valuable information.

That's about all I really would like to say at this point. I think we'll let Doc come down and do his presentation, and then we will entertain questions.

DR. SELLARDS: Basically the reason that we have put the program in was to try to cut down on loss of life because of the high correlation between the human factor, pilot error (whatever that means) and accidents. That's our bottom line. That's what our goal is. We're doing some research which I can get to later.

As Stan mentioned, originally we ask for an anonymous questionnaire at the end of the period, and then we go out later and ask for questionnaires down the pike. Right now we are very pleased with what we are getting.

As I go through now, I'm going to draw some key points that I've found over the last 15 years in working with pilots from Vietnam and up until now. With that I'll go ahead and get some slides to show you here.

I want to show you that we did do some research looking up ex-pilots to basically get some history of pilots. And this is one guy we talked to. The other problem we found with pilots is sometimes the self-image -- well, first of all, this is another ex-pilot we found who was over in Vietnam. He had retired over there and moved on in a better field.

The other thing we find, the image of a pilot sometimes is important because pilots tend to view themselves one way sometimes, and then the problem is as viewed by the rest of the people, and that sometimes leads to a problem which we call cognitive dissonance. So we try to address those kind of issues and look at them. So we have this problem with pilots, as I say, the self-image, or the image they project and how other people see them.

Another thing that comes up periodically is how difficult it is to teach pilots human factors. I did all this to draw a visual cue in the past, because sometimes it's very difficult to get pilots to look at the human factor. I think this is one of the problems that plays into the total training program that is very difficult.

Part of what I think is the key to training is that in the human factor we are really talking about education, not training. That means that you have to bring the pilots into a situation; it's a classroom situation. I consider that to be line-oriented training. It's not done in a simulator, and I don't think it has to be done in a simulator. The leap will be made from classroom to real life. Everybody makes leaps every day in their lives. So we try to arrange the program so that the beginning of it is not a compulsory situation.

One of the things we are looking at is that when you

look at the human factor, the professional flying skill -- now we are talking about a large percentage, whatever percentage you want to put that at, whether it's 50 percent, 25, 90 percent of the accidents you have, this professional flying skill plays only a partial part of it, and the big part is the human factor.

And that's what we are talking about here. We are talking about educating pilots to look at the human factor in the cockpit; two people not talking together, nobody flying the plane, it could go on and on. It's very hard to see the pilot error, and no one can really identify it, because people are not trained or educated in that way. So that's kind of my message of what I've seen over the years.

The other thing has to do with the self-deception, if you want to go back to the way you see yourself and the way others see you. What we find in the class a lot of times, one guy calls the captain an SOB maybe, it isn't as effective as if 20 people call him that. So he kind of gets the idea, and the bell starts to ring, that maybe the way his style in the cockpit, he starts to say, hey, maybe I should look at that. That goes on periodically in the classroom, this idea of self-deception.

There was an article that came out about one flight, which I'm sure you've seen. Now this pointed out that if you have a pilot that hopefully has not participated in a crash but let's say has marriage problems, investment, business, everything is going down the tube, then the hypothesis is this pilot may have a problem in the cockpit, because you don't just leave it here when you enter the cockpit. And that's the human factor. So we try to address some of those issues, which that article did, by the way.

The other thing is pilots are very technically trained. The equivalent would be how you work with physicians when you train physicians. They are technically oriented people. They want to get a technical answer and there sometimes isn't one. I think that's the key point. In working with people you don't always have a cookbook that you can work with. When I'm working with my eight-year-old boy, I can't always pick up the book and say, okay, he did this today, then the manual says I do this with him, because that's not the way my 8 year old tracks; and my wife doesn't track that way either. Consequently it leads me to have a problem sometimes, and those are the issues that we are talking about in the program.

And when you look at the brain, you can look at the right-left brain situation. Are pilots that way because they selected that occupation? If you want to look at the physiology, then you can look at issues of right and left

brain concepts. There is a lot of stuff written on that. So we get involved with some of those kinds of things. So the physical aspect may play a part in one human factor in accidents.

Some of the things that we found about pilots is -- and this is nothing new; you know about this -- it is the most checked profession of any. There is no profession that is checked like pilots are checked. Like for example, if I go to a medical convention or something, I can just sign in and play golf for three days as long as I register, whereas that's not the case with pilots. These are issues that we found that play a key part in a program.

Like number 6 on the slide, we find that pilots spend time, you know, strange beds, strange people sometimes in those beds, food, those kind of issues. The circadian issue thing, the whole thing with the clock being upset when you are flying, that kind of issue. It doesn't necessarily mean there has to be a three-hour time zone change. A lot of these problems stay hidden. And that's what we try to bring out, that people have problems and what you are experiencing as a pilot's are no different from somebody else's problems. But it has never been looked at in the education of pilots, the same way it's never been looked at in the education of physicians until the last few years.

And then you have the whole change in medicine in that we are changing over to more family practice. That's what you see, 80 percent of the people coming out of med school are in family practice.

It also takes a special kind of wife to adjust to a pilot. You have to have a special kind of a person when a guy comes off a four day trip not to say let's go out to eat, because that can be very trying sometimes, and of course jet flying overall is stressful.

Also here again, and this I think we touched on, but the whole mechanical reaction type of situation, and I've already kind of drawn this point out, but I want to reinforce the fact that you have to get away from this. It's very difficult, at least in what I've experienced, to train physicians and/or pilots in a simulator to handle human factors. There has to be a prior step before stepping into the simulator to talk about things like the human factor. You can't start in that type of environment. No educational process does that, so you can't do it in aviation. You don't start out saying, okay, Doc, we're going to put you in the operating room; you start doing open heart surgery and as you are working through it we're going to look at what your variables are as to how you are operating in that operating room. You have to go through an

educational process before they step into the cockpit.

As I said right here you're seeing a whole shift to family practice, and there has been a shift in medicine back to the total person. We've gone from the general practitioner all the way around now to the family practice where 80 percent of your med school graduates are coming out with that training, because you have to look at the total person. And so consequently you've seen that whole shift. And aviation is going through that process and has been for the last few years.

You have to believe in the training. We will have pilots come out of the program and over a beer they will say well, I'm not really sure, yet on our assessment form they rate the program high. So there is a variable of playing a certain role. So some of these issues are key issues that they feel very strongly about. However, here again in the peer situation they don't always verbalize that. They'll say, well, I don't really know about transactional analysis, I don't know about that. And yet when you talk to them two years later they'll say, hey, Doc, I've been acting like a kid too much in the cockpit. I guess I've got to look at that behavior, or something like that. So that's what you are looking for, that subtle kind of a change.

The whole emphasis in pilot training has kind of been A-B-C-D. And when you get a stress situation, and this is a human factor, it doesn't track that way. So you have to educate people to look at both ways of handling situations. The fact that you are in this profession to fly because you enjoy A-B-C-D thinking; or is it the fact that neurologically your brain functions a certain way and then you get back to the left-right brain controversy or discussion. So whether you look at it from a nature or nurture argument, the fact is you are trained a certain way and you have to look at the way pilots are trained.

And the other thing you have to introduce is the A-B-X-Z-C, thinking process. And as I say, that's the way my eight year old tracks sometimes, and my wife tracks that way sometimes too. So I have to stop and look it over, because there is in fact no cookbook to handle that way of thinking. So that's a key issue that needs to be addressed.

Here again people tend to operate with blinders. That's a known thing. I thought of this today. I looked at everybody who goes downstairs here. And I just wondered, if we went up to the top exit, is there a restroom up that way also, for example? But everybody tracks a certain way under stress. That's why we see in a fire if everybody goes a certain way then you have a situation where people are trampled and die. It's not, quote, normal behavior, and

those are the kind of issues that need to be discussed in our program or any program.

People sometimes look at behavioral science as too complex. So what I try to do in a program is to help people understand it is not a complex issue. There are many issues that need to be brought out. For example, the difference between Freudian psychoanalysis and behavior modification, is not a difficult concept, but if you've never addressed it in your life it's going to be difficult. And so consequently one part of our program addresses those different theories/concepts and I think any program you institute should address those type of things so it gets away from the fact that it's not really something one can deal with.

The other thing is, that I think Dr. Bolman will touch on this - about the theory of practice and the theory of the situation - and those are issues that we need to talk about. There are other key issues that have to do with and the expressivity and the instrumentality type of thinking. You have to get a person to relook, rethink, redo, and that's in essence what we're talking about in our program. That under stress -- the things mentioned previously are the things that we found people saying causes them to have a problem when in the cockpit. And even we've had some pilots that have come through the program that have been victims of crashes, and we let them explain their situation, what happened and would they have done it differently. These are the kind of negative things we are trying to avoid in future stress situations.

Number 7 in this slide is a big one for people who have flown in the right seat for ten, fifteen years with USAir before they can make the leap over to captain. They are not really listening. It's like -- I'm on board now, pull up the ladder, once you make captain. And those kind of issues we have to address and have people go through a thought process in two days, which is kind of pushing it, so they can begin to accept some of these issues. As presented on the slide.

The program possibilities are things that I've already mentioned. What we do is at the end of one day they get a series of self-assessment tests. They take the test and other tests which have to do with their leadership style, and they have to do with things like the frustration, overload, deprivational stress; those kind of issues that play a key part in their life. And the fact that if they are having problems at home, usually pilots take that into the cockpit. There have been a lot of studies which show this, and we talk about those kind of issues and how that ties in, the whole mind-body tie in, the psychosomatic, and

also developmental patterns so they understand how people develop, and that there is not a big mystery once you get to discuss those kinds of issues.

And basically it's an educational process. It's teaching basic stuff the same thing happens in medicine, the physician has never had a chance to look at those things, and consequently in these two days we try to look at these issues so that pilots can then say, yeah, I agree with that, so when they get into the cockpit they are going to stop and think and not set up a situation like Tenerife, where you have a parent to child type communication, and the guy in the right seat cannot question what's going on, and you get five or six hundred people dead because of that. You can go on and on in different accidents that have occurred with similar scenarios.

Here in this slide we look at some of the studies that are being done. Our pilots are trying to assess their own stress level, and there have been different studies that have been done that show for example in interviews with 148 crew members and their wives in this situation trying to find out -- that what's going on at home does affect the cockpit.

So basically that's the end of my slide show. Another key thing I would say is that there is another variable, that technical versus nontechnical.

The nontechnical is the behavioral science aspect. The other thing is we want people to internalize it, because the theory is, I believe, pilots are externally driven. They rely on the manual. They rely on the simulator. We don't want them to do that in a stress situation, because that isn't going to be a positive payoff for them. And you can't, here again, look at a cookbook.

I want to make the point, that we rely on the pilots to make these educational leaps, because here again you make leaps every day from something you read in a book or something you see on TV. And you say, okay, I understand how that can apply at home. We want the same leap to be taken, because if you spoon feed people they don't tend to want to make many leaps from theory to practice.

We are trying to make the pilot struggle. Sometimes they reject it at first. We don't get the rejection on the assessment form, but we get the objection in a classroom sometimes or over a beer at a party, because they just don't want to change or show change too fast -- this guy has been a captain for fifteen years, and he is viewed as a real hardass, and he doesn't want anybody to know that he really isn't. And so consequently a lot of times that won't be up

front, but it will be on our assessment forms. And that's where we feel that we ae making movement -- we have not had any negatives so far. We have had some people that waffle on, I think, a five point scale who are at four point six, or something like that. But that really isn't the key. We know we are doing some good from the feedback we get.

So those transferences and the cues we are talking about -- it was brought up earlier -- the cues are the leadership scores, the test scores and we want those to be cues. So if your are looking at the Holmes and Rhad test and you see that you are flying with somebody and they are in the middle of a divorce and their kids are having problems and they are in a custody fight, that's the person we want to say, hey, beware of that person. They may not be tracking. They may be out of the net at a key time. And those are the things we want to stress. And our program acts as a mediator, I would say, in that regard.

I reread what Dr. Billings had written at the end of that 1979 meeting and he was saying as far as using the simulator, is it really a training tool or is it an evaluation tool? And that's a key thing. I think it is not a training tool to start with in the behavioral science. You have to start with some basic information and you move on from there.

So, basically I have drawn some key variables we found in reference to our program.

DISCUSSION

DR. LAUBER: Thank you, Bob and Stan. I see hands in the air already. We've got about a dozen of them here, so the first ones I saw were down here. We'll work our way up.

DR. BENTHAM: I'm Dr. Jack Bentham. I'm a consultant with Metro Airlines. I've put some training programs in place in the banking industry and also in the utilities. The problem that we found was that there has to be a linkage between the training impact that Dr. Sellards is talking about and the actual accountability in the measurement environment so that we are training managers.

I'm wondering in USAir if you tried and found some success or failure in trying to get the pilots then in the cockpit to actually go through some behavioral change, measure it, get in a feedback loop to them and actually modify the behavior in a practice effect.

DR. SELLARDS: I would say that basically we haven't had a lot of different kinds of research -- that's one thing we're undergoing right now. We know from the feedback we're getting, a written feedback, that a behavioral change has taken place. We know that. We've got some guys that will say "psychology sucks", but they will still come up and say, you know, Doc, I think maybe I have been too much acting like a kid in that cockpit, or I'm really not allowing that new guy a chance to talk -- so that's the kind of things we look at.

As far as the hard data, we're starting to get some of that back, and we will know a little bit more than we know now. But there is behavioral change taking place and we also -- knock on wood -- we haven't had any serious situations.

I think that's the problem with all of this stuff: Where is your assessment tool and how do you know? We know people are saying we like it, and we know from the paper feedback at one level that it's good. I know for myself there is no question. I'll bet the ranch on it. I know that over time. But as far as hard data, we've got something similar to United. We can say, hey, pilots are passing at a better rate, or whatever. But we don't have enough research, our thing is bottom line, we want to cut down on the loss of life.

DR. LAUBER: There was another one here in this row, and then Dick Norman in the back. And then down there again, I guess.

MR. FISCHER: I'm Bob Fischer of Summit Airlines.

You are wading in some fairly sensitive areas there, and I would just like to say one thing. It seems like you are dealing with two problems. One is you are teaching an old dog new tricks; i.e., you have a highly technically qualified, very competent individual who has been flying the airplane for a while and now you are going to teach him how to behave so he can communicate effectively with people around him.

And secondly, you have a new hire who you are bringing aboard, and you are going to try to evaluate this person first as an individual and what he is capable of doing. And I think we probably have a higher degree of education today than we had 30 years ago when we hired somebody off the street to be a pilot.

So the question is: Aren't we really dealing with two problems? One is how to teach an old dog some new tricks if in fact he is a good pilot but hasn't learned to be a very

good people. And secondly, can we evaluate this when we hire somebody off the street, whether we have a good mature individual we're working with?

DR. SELLARDS: The first thing was old dog, new trick. Illinois University did an assessment on pilot error related to age. They (and I) don't think age is a variable. Age is not a variable in behavior, because you can be an ---- at 25 or at 65. Okay, so age is not a variable. The variable is personality type. We've kind of even addressed that old dog, new dog. To me I'm not sure that's valid. I'm saying I've heard that, you know, but that's more or less, I'd say, a behavioral situation that personality not age is the variable. You have raised two excellent points.

The point on teaching somebody who comes into that classroom. One guy who is going to retire in two months, we were just talking, that kind of a guy, he buys it but not on the surface, because he has family problems, and he is struggling with some personal issues. Now in answer to that, we find a lot of problems from guys who are 45, 50, 55 years old. There is a saying, the troublesome person is a troubled person. Nobody wants to fly with them and yet they are the kind of people who are struggling. So sometimes they are looking for an answer. So I think that's part of the problem and our program helps them.

You raised an excellent point. I'm not trying to skirt around it. I don't really know. Behaviorally old dog, new tricks; I'm not sure what that means, because a person will buy it at any age if they are receptive to it personality-wise, if they are ready for looking at their life for whatever reason.

The other issue is new hires. We haven't run through the new hires in this program yet. Part of the reason this program has been accepted, I think, is that the older captains see a difference between them and the new people and want to bridge the gap. And you've hit on education as being one of the things. So they are also looking for tools to bridge that gap, and I think that's the other positive part of this.

DR. LAUBER: Dick Norman.

CAPT. NORMAN: Dick Norman, chairman of pilot training committee for ALPA.

I've just got to -- I just can't hold back anymore -- and stand up here and get with you gentlemen. You are such a fine group of people. I do want to talk with Paul and Al later in some of these workshops in reference to the flight crew training technology and conditions in the country, as I

can see it and our committee do, throughout our working with all the airlines both commuter and of course the regionals.

Stan, both you and Robert, especially Stan there, the captain development training that you have developed, I think, is absolutely excellent. Our committee and myself personally have been through many of these training areas, especially with United, and I can see the effect of this captain development training and also the human factors portion that enters into it and the training that is so very important.

The question that I have may be directed more towards John, I guess, is just where are we going to go and how we can get this training distributed throughout the industry and what affect we can have through the FAA to require this. I think it is so very important in training.

All you gentlemen have seen so far this morning in what has been presented to you, is extremely important in the cockpit area. I've developed a paper here entitled "Training Pilots in the Area of Judgment, Decision-making and Cockpit Management" which I intend to present before the SAE symposium in Long Beach. It is copyrighted, and I wish I could distribute it right away, because it is in line exactly with both what these gentlemen have been discussing. It's a very important issue from the many years experience I've had in operation of aircraft as a pilot with Pan American. And the cockpit conditions I can see it is so very important what these people are talking about.

And my question, I guess, is really directed towards you, John. What we can do and what direction and what clout is necessary to go in this so we can bring this out to the industry? It's so very important.

DR. LAUBER: I'll give a very quick answer to that, Dick. I think we are in the process of doing just that by meetings such as this. I think that we've found, that as a result of being able to get industry people together to discuss these issues at meetings like this and then generating reports and disseminating those to the industry, that we've generated a great deal of awareness of the problems and the issues within the industry and I'm not sure what we can do beyond the kinds of things that we are doing now to speed up the process. I think there are many things that enter into it.

I think the industry has traditionally been relatively conservative with regard to changes in flight crew training, and I think there are very good reasons for that that apply in this case as well. I think we are just learning how to do these things. So I guess my answer is that so far as I

can see, Dick, we're doing it. And if anybody has any further suggestions as to how we can do more, we're open to hearing it.

We have several questions. Let's take one here in the back row.

MR. SKOUGAARD: I'm Dennis Skougaard of Big Sky Airlines. I remember reading a few years ago that Lufthansa had a program using biorhythms, and if they found pilots on the low side of the biorhythm scale they grounded them. What I am wondering is: In your program, if you have people that are under stress themselves or recognize people in their cockpit that are under a great deal of stress, do you encourage them to ground themselves or to come to you and say maybe so and so shouldn't be flying under the circumstances he's got to deal with?

CAPT. FICKES: Yes, sir, we very much encourage people to understand -- that's part of this education process for the individual who is going through some stressful experience to understand and come to us, and we will make arrangements for him to remove himself from duty. There are all kinds of ways you can do that. I can remember flying with captains back when they were going through maybe a marital situation, and they would sit and look out the window and not talk to me for hours. That's one hell of a situation to be in.

DR. SELLARDS: I would like to say one thing on that. One thing is biorhythms, per se, there are no scientific studies to support biorhythms. Now circadian rhythms is a different situation, but biorhythms there is no scientific study. You know, I carried a lucky penny in my pocket, and that got me through Vietnam. That's my belief. But I'm saying there is no scientific study to support biorhythms. So those kind of issues we talk about. That's a self-fulfilling prophesy - I'm going to have a down day. So we talk about those kind of issues, and those are good issues to address, that's an excellent point.

And the other part is we do have phone calls from pilots who say, hey, I don't want to fly for a while. And they see me or somebody else till they get the situation straight. We are hoping for a payoff there.

DR. LAUBER: Another one right here.

MR. BLUME: Bob Blume of Imperial Airlines. You got real close to a good point, and that is when a guy comes up to you and says I'm under stress; my marriage isn't going exactly the way it should be going; or my dog died; or whatever, you pull him off the line, and he doesn't adjust

or he doesn't come back. What do you do with him? I'm sure the union would be interested in it.

CAPT. FICKES: Well, we deal with the issue. The point is that he is off the line. We've identified the problem, and we're trying to correct it. And that's not always necessary. Frequently you can have discussions and work things out just ventilating and get the gentleman back to work much quicker.

MR. BLUME: Have you ever used any of the training or any of the self-evaluation things, and, you know, to get back to what you were talking about, use it as a profile for a new hire or for an upgrade to your advantage?

DR. SELLARDS: No. We have stayed away from that whole issue.

MR. BLUME: Simply because it would be threatening to the people who are taking it?

DR. SELLARDS: Absolutely. We want the assessment to come from inside the individual. So that's an excellent point. We haven't touched that at all. In fact, when we started, that was a big thing was that we were going to psych out all these people. You can't do that, first of all.

DR. LAUBER: One here.

MR. BREWER: Chuck Brewer from Summit Airlines.

My question is: We talked earlier about instructional technology and the ability for a ground instructor not necessarily to be a mechanic but understand what he's teaching. And from the cockpit resource management concept, would you advise anybody going into this, when you start talking transactional analysis and behavioral management and changing, to have someone like yourself, a doctor, as opposed to someone on staff? It seems to be a very qualified field, in which case I think we are looking at how can we do this and what should we do to do it correctly, and can we really pull a senior captain or someone we think is a nice person. Or should we be looking at a consultant like yourself to run a program like this?

DR. SELLARDS: I think you hit on a key point that even if it's an outside person, you know, the old thing about the experts are anyone 50 miles from home. The other point is, yes, you do have to have somebody who is qualified. I think some of the programs haven't flown as well perhaps because the instructor wasn't well qualified.

So you hit on a key thing. Yes, number one, it should be an outside person and, yes, they should have credentials. When I'm flying with somebody, I don't want somebody that isn't credentialed in that left seat flying that aircraft, and I would want the same thing in a training program. Not that they are going to be that much difference perhaps, least they have a credential. They've jumped through the hoops the same way the pilot has jumped through to get credentialed for flying, so if you want to use that similarity. That's an excellent point.

DR. LAUBER: Ed Carroll.

CAPT. CARROLL: Ed Carroll from United.

I want to address something that Dick Norman raised, and I think the last point that Bob just made is indicative of what I am going to say. Each of us who are going to make an approach to this today, I think you are going to find, have slightly different approaches and interpretations of parts of the program. And with that in mind, when we put our program together I went to the FAA in Washington before we started it to make sure of two things: one, that they didn't have any real objection to what we were doing from a regulatory sense, and two, if they ever thought about making it a regulation I didn't want them to reinvent the wheel. I figured if we had something going that they could address, then they wouldn't have to start from scratch.

So I guess what I'd like to say to Dick at this point is we all believe that this kind of training should be done. But until we have resolved exactly how the training should be addressed, I don't think we want to push too hard for regulatory approach for this yet, although I really believe it will come in the next couple of years. But when we resolve our own considerations and differences, then we are in a better position to approach it; otherwise you are going to be going four different directions while you are waiting to decide what is the best way to approach it.

CAPT. FICKES: Could I just respond to Ed's statement there? I agree wholeheartedly with you. As I mentioned earlier, we are talking methodology here, gentlemen. What works for us won't work for somebody else or whatever. I think it is important that we understand the bottom line of all this, how effective it is and so forth before we all race out and start writing new rules and regulations.

CAPT. NORMAN: Just a moment. I'm taking this from Paul here. I want to reply to the two gentlemen. I certainly agree with you on that. It's not the fact, as I said, we need the clout in there. It probably wasn't the right phraseology. But we do need to address this, as these

gentlemen said, and I'm addressing it by the mere fact of experience and exposure over many years and watching conditions.

And we are approaching this area, as it was just explained from our gentleman from United there, that in probably two or three years this will come about. I'm not for regulations any more than anybody else is, but I feel this is a very important area, extremely important area for air safety. So I did want to make a fact of that for the record. Here's Paul, one of my members.

MR. ISTOCK: Thanks, Dick. He's my boss; what can I say? Beside working for Dick, I fly for Delta. And I have a question for Dr. Sellards.

What is your opinion of psychological testing via interview, et cetera, before an individual is hired as a method of preventing some of problems that we are talking about?

DR. SELLARDS: I don't do this full time, but I would say you've hit on a good issue. I'm amazed that there aren't more tests done as far as identifying problem people at some point. I want to address the other point that was raised. We know some educational truths that are around us. It isn't necessarily an unknown area -- there are some firm proven methodologies. There is plenty of data out to support and answer some of the issues being discussed -- so whether you do it this way or that way, we know that there are some educational truths on how you arrive at a goal.

The other point, though, I would agree that I am amazed that there aren't more tests developed -- there are some valid and reliable tests out there to do some identification like that, and I'm amazed that we don't do that. That's an interesting point, too, because we have guys in our class say that the union protects the very people that should be thrown out of the cockpit. So that's an interesting dilemma there, too. They'll say we've got to get rid of this guy, but you've got to be caught with a smoking gun and a dead general before anything is going to be done. So that's another interesting Catch-22 in the whole process. And even in the psych testing part, I think that's written in the new union rules that there won't be any psychological testing done on pilots. Now in the med schools we are teaching physicians that a mental status report is as useful as drawing blood. So it's a good point.

DR. LAUBER: Did you have a quick comment?

MR. LIDDELL: Roland Liddell with ALPA. One comment is too that when you are talking about screen tests that people

change. And 20 years after someone is hired, many things will change in a person's personality, so that you look back and say why did we hire him?

But professional standards. Have you looked at USAir into a group of pilots that would handle problems in your cockpit, whether it be a co-pilot, flight engineer or captain or whatever, that you can refer these individuals who might have problems to a group that will try to solve these problems, and this will stay away out of the managements' information source?

In other words, within the union group do you have a group of pilots that handle problems and again the management is out of the loop, so to speak, so these problems can be dealt with completely anonymously and try to solve the problem before it gets so gigantic that it might affect someone's termination or whatever?

CAPT. FICKES: Yes. I'll respond to that. Within the ALPA group there is a professional standards committee which functions in our airline as it does, I'm sure, in every other one. Unfortunately, as Doc said, frequently it takes a smoking gun and a dead general to get any action.

In this particular program we are not interested in testing people, setting up profiles and really getting into that area. We are interested in education. We feel that there is an awful lot of ground to be ploughed in education. And you start tacking on assessments and that sort of thing and special study groups, and the first thing you know is you've got a real problem. People do not accept the program. It used to be called Fickes' charm school. Now people are trying to get in there, because we stay away from those very sensitive subjects.

DR. LAUBER: Thank you again. I'm sorry again to all of you whose questions we couldn't get to. We'll try to work them in at some point. You are about to have a unique experience, and that is eating at the Ames cafeteria.

(The noon recess was taken.)

We are going to continue on in the same vein and that is to take a look at another program that deals with the co-called nontechnical side of flight crew training.

Jim Sifford, who is director of flight standards at Piedmont Airlines, has been with Piedmont since 1959, and has flown all of the airplanes that Piedmont has flown in that period of time. He is rated on both Boeings, the 737, the 727, and he is also a member of the ATA training committee and was vice-chairman of that committee in 1982.

His colleague, Hugh Huntington is vice-president of Organizational Consultants, Inc., in Charlotte, North Carolina and is working, as a consultant for Piedmont.

He has graduate degrees in business and psychology and is principally interested in problems having to do with group dynamics and organizational behavior. I think you will be interested in the approach that Jim and Hugh have taken at Piedmont in integrating these elements into their program. He does a lot of work similar to what he's doing with Piedmont for other industrial clients, so he has a good background and good deal of experience in doing these kinds of things.

With that I'd like to turn the podium over to my friend, Captain Jim Sifford from Piedmont.