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The Structure and Missions of Air Force Intelligence Command
Gary W. O'Shaughnessy

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Barry M. Horrowitz; Randall M. Fort; Gary W. O'Shaughnessy; Nina J. Stewart; Walter Jajko; Edward D. Sheafer; Michelle K. Van Cleave; Jerry O. Tuttle

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The Structure and Missions of the Air Force Intelligence Command

Gary W. O'Shaughnessy

Major General Gary W. O'Shaughnessy is Commander of the Air Force Intelligence Command and Director of the Joint Electronic Warfare Center. His previous positions include: Electronic Security Command; Director of Intelligence (J-2), Headquarters, United States European Command; Deputy Chief of Staff for Intelligence, Headquarters, USAF, Europe; Associate Deputy Director for Operations, National Security Agency; Commander of Electronic Security Command Pacific and parallel duties for Europe; Commander of the 6903rd Security Squadron, South Korea; Military Assistant to the Director of the National Security Agency; National Security Agency representative to the Air Staff; Intelligence Officer, Headquarters U.S. Air Force Security Service; Assistant Operations Officer, 6921st Security Wing. General O'Shaughnessy received his BA in English from Fordham University, and his MA in Education from Manhattan College, and completed Squadron Officer School, Armed Forces Staff College and the Industrial College of the Armed Forces. General O'Shaughnessy has received military decorations and awards including the Defense Superior Service Medal, Legion of Merit, Bronze Star, Meritorious Service Medal, Joint Service Commendation Medal, and Air Force Commendation Medal.

Oettinger: Good morning. We are delighted to have with us today General Gary O'Shaughnessy, who is commander of the Air Force Intelligence Command. You have all seen his biography, so I need not tell you anything about his background. I asked him before we walked in here whether he'd be agreeable to questions and interruptions, or wanted a period of uninterrupted exposition and he said he welcomed having questions right off the start. So, please feel free. He also understands well that it's easy enough, if he says so, to shut us up, especially me, if it breaks into his thread. So, go at it fearlessly, and with that, I turn it over to you, sir.

O'Shaughnessy: Okay. Thanks, Tony.

What I'd like to do for starters is to provide some step-off points for discussion areas or things that you may want me to get into in a little more detail.

But before I start, Frank [Snyder]* told a story at lunch and said to me that we are open for a joke or two, so I thought I'd start with a story about a Harvard graduate that I heard about who went up to Heaven after he died and arrived at the Pearly Gates. St. Peter was there to meet him, and coincidentally, at the same time that the student from Harvard had died, the Pope died. They both arrived at about the same time at the Pearly Gates, and St. Peter said to both of them, "Well, welcome to Heaven, and we are going to show you where we are going to be putting you for the next part of your life, for eternity." He got into the car and started driving around Heaven, and there were various neighborhoods in Heaven just like there are on Earth, I guess, and they went to this middle-class neighborhood with

*Frank M. Snyder, *Command and Control: The Literature and Commentaries*. Washington: National Defense University Press, 1993.

apartments about six stories high and St. Peter said to the Pope, "Your Holiness, this is where you are going to stay. You are up on the fourth floor, that corner room up there." The Pope looked and said, "Thank you very much, St. Peter," and got out, took his luggage, and walked into the apartment.

The Harvard student stayed in the car and they drove around and they came into this very plush neighborhood, much like the Chevy Chase environment in Washington, with very palatial mansions, large houses, a lot of acreage around them. St. Peter said to the Harvard student, "This is where you're going to stay," and the Harvard student looked at him and said, "My God, this is really a very nice place." He said, "How come I deserve something as palatial as this and the Pope is in that apartment down the street?" And St. Peter said to him, "Well, we get a lot of Popes up here, but this is the first time we ever had a Harvard student arrive in Heaven, so we wanted to treat you well."

So, I hope I'll treat you well during this presentation and give you some insights as to what is going on in the Air Force intelligence world. It's probably at a level that's a little bit lower than the broad intelligence picture that you may receive from Barry [Horowitz] and other guest speakers around here. We are going to focus more on the operational level in terms of how we use intelligence in the Air Force, and some of the structures that we have created to do it a little bit better. As we do that, we'll take a look at some of the tools that we have within Air Force Intelligence Command (AFIC). What is intelligence in the Air Force? What do I have in terms of assets to play around with? I'll show you, maybe, what some of the problems were, and what we've tried to fix by creating an Air Force Intelligence Command, which has only been in existence now for about a year-and-a-half. So, we are still cutting our teeth on how to do intelligence in the Air Force in a way that we haven't done before. I'll make an assessment with you and you can be a judge, too, as to did it solve our problem when we changed the way Air Force does intelligence business, or do we still have a lot of work to do? And maybe we'll conclude with some of the things that are coming down the pike in intelligence across the military, that certainly will have an impact on Air Force Intelligence, if not an impact on the way everybody in the Department of Defense does intelligence in the future.

Oettinger: Before you go on, could I ask you a question right now?

O'Shaughnessy: Sure.

Oettinger: I'm puzzled by some of the things that you left off, but also I don't know whether that's in the focus of your responsibilities. Maybe the explanation is in what you said — that what you're looking at or focusing on for this talk is intelligence that serves Air Force operations. To my knowledge, the Air Force also does a number of things as an agent for national one thing or another . . .

O'Shaughnessy: Exactly.

Oettinger: Are you encompassing that or leaving it out? And if you are leaving it out, can you just say a word so we know, a little bit better, what context . . . ?

O'Shaughnessy: I will. I will because, with my hat on, I really have two types of customers. One, I look down to help the warfighter execute the war plan, and two, I have to look up for some of the larger DOD responsibilities, and that is broader intelligence requirements that the National Command Authority, for example, may use. The beauty of collecting intelligence, I think, is that if you have an operator or a linguist at one end of the pike who is doing some type of intelligence gathering, that can be used at various levels very efficiently. It can be used today by the guy who is in the tank or in the airplane, and as it goes up the line to Washington, it can be used as part of an overall assessment as to what is going on in that battlefield, and maybe, maybe, in a projection as to what's going to go on on that battlefield in the next 24 or 48 hours. So, we do have a dual responsibility.

But there are a lot of players in intelligence. I'm going to focus on one piece of it, Air Force Intelligence. You have the State Department, you have Energy: all of those folks have intelligence pieces within them. And then you have major agencies like the Defense Intelligence Agency, the Central Intelligence Agency, the National Security Agency, who all play a role in intelligence, and some of you are very familiar with that; others will learn more about it as you go through this course. I'll touch upon the relationship Air Force's intelligence has with the other components, but, as Tony was saying, we really do touch a lot of customers when we produce an intelligence report. These are all players, as are the Navy, the Marines, and Army Intelligence, who have structures fairly similar to what I'll describe to you in the Air Force.

We have a role in the Air Force in the traditional intelligence cycle, which oversimplifies intelligence,

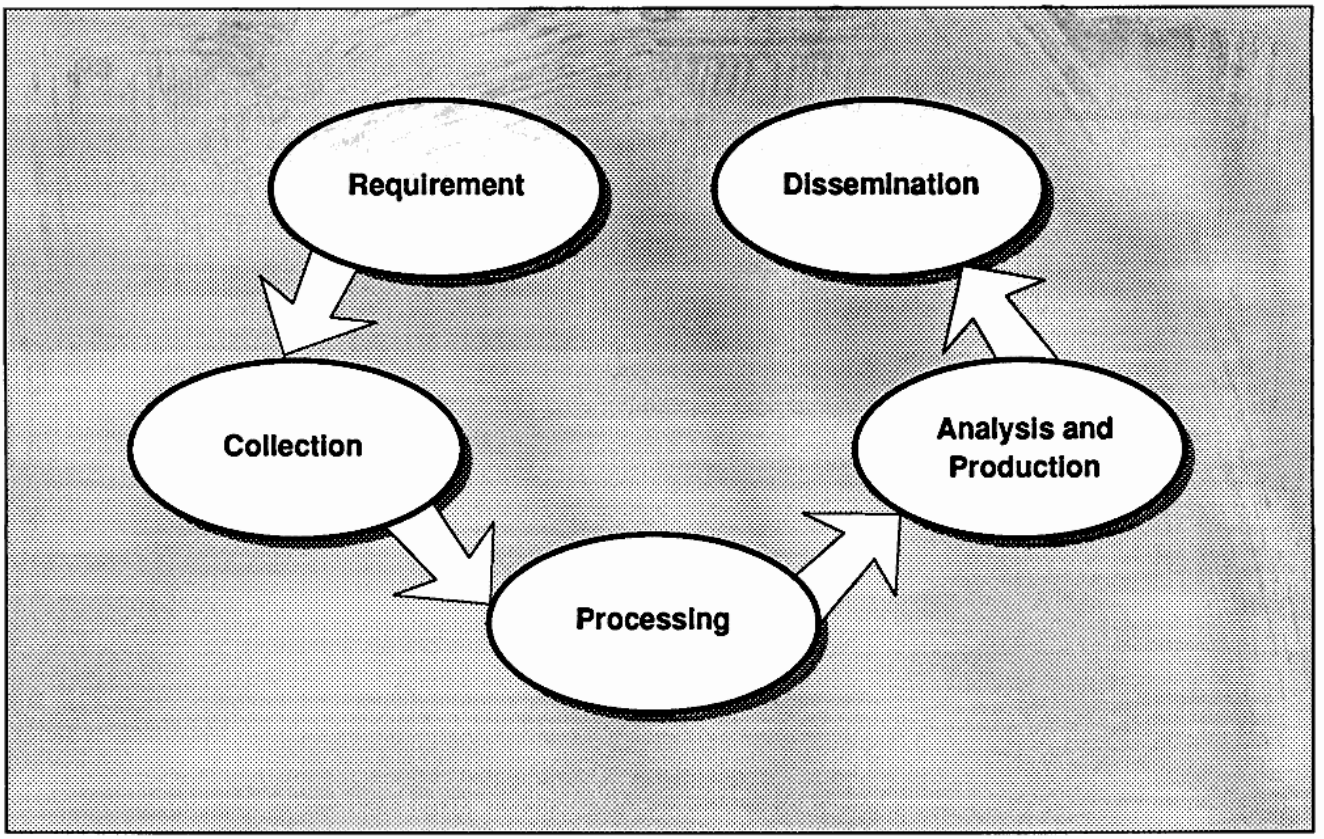


Figure 1
Intelligence Cycle

but that is the process that you go through (figure 1). We develop our requirements and we satisfy our requirements in Air Force intelligence. We spend a lot of time in collection. We have a lot of airmen and NCOs (noncommissioned officers), sergeants, and young officers around the world who are on the collection side, gathering the intelligence, and I'll show you pieces of that.

Processing. Those of us who had lunch together discovered that we have a lot more capability in collection than we have in analysis. We collect a lot more than we can analyze and process, which means reporting it and filtering it and getting it out to the right person. So, that's an area that we continuously have to put emphasis on.

Processing and analysis and production kind of go together. You process, analyze, and produce. Getting it out is the communication side of this cycle, where I deal with how I can communicate the intelligence to a broad range of customers, where there are systems that are interoperable, so that if I produce some sort of intelligence or collect it in one area, I can make sure that the Navy pilots, who need it just as much as the Air Force pilots, are able to receive that intelligence. The dissemination side and the communication side are not trivial chores.

What are the tools in my locker to do intelligence in the Air Force? I would briefly step through some of these — HUMINT, SIGINT, IMINT, Scientific and Technical Intelligence — and if you see anything that sparks your attention as I go through these four categories, don't hesitate to ask, and I can go into a lot more detail on them. I'm just giving you a kind of broad brush treatment as to what is in each one of these types of intelligence. You'll see as we get through this that the imagery side is the one in Air Force intelligence that probably needs a lot more attention because it's not part of AFIC yet, and I'll talk to you a little bit about maybe where we are going with imagery, because it has been put on the back burner for us.

In the HUMINT world, this is when you use agents to go out and gather intelligence or you have folks in the Air Force who are controlling people in key areas around the world who may be able to provide you with intelligence. In the Air Force, that is a very small contingent. We do mostly overt intelligence, and that means you identify who you are. You say, "I'm with Air Force Intelligence and I need some help." The covert side is when you are controlling an agent or somebody who may work for a company in Iran and comes out every once in a while and goes to seminars at Harvard, or has an exchange in some scientific community, and you and he have a relationship and you can generate data on what is going on in that particular scientific endeavor in that country that you are interested in. That's a very small part of the Air Force intelligence. The CIA controls a large part of that, and when we do get into what we call covert intelligence, there is an elaborate, and I mean an *elaborate*, process to coordinate that. We don't have any authority on our own to say, "Okay, here's an opportunity that I'd like to exploit," without going back through the CIA, and know that they are saying, "Is this acceptable, can we do this to make sure that we don't step on each other's toes in an area that could be very, very embarrassing?" So, our effort is predominantly in the overt side of the house.

There are many external players, as I've said. If you want to do something on your own, it's hardly possible in the HUMINT side. There is a lot of coordination, and there are a lot of folks who have to say, "Yes," right in the Air Force, before it even gets outside the Pentagon and goes across the street to CIA. Since it's such a small organization, as you have probably read in the paper, we are going through some massive cuts in the Department of Defense and we are losing a lot of people. We have tried to preserve what little HUMINT capability we have and take the reductions in some of the other disciplines because that's a pretty small number when you think of the Air Force in general. There are only about 415 people in Air Force HUMINT — they're very language intensive because they do a lot of debriefings. When you talk about emigrés, today that's a very lucrative source of intelligence because so many borders have been opened and there are people now moving across borders at a much more rapid pace. We find ourselves spending more time screening emigrés to find which ones we may want to sit down and talk to, to see if they have any valuable intelligence that we can use or pursue. The screening process alone is taking up a tremendous amount of resources.

We do that with our allies around the world, where we have close relationships with other countries with whom we have what we call "joint interrogation centers" and we help each other in trying to screen out what we need. If you remember that requirements bubble up in the Air Force, there is a process where all those who have an interest in gaining information through this kind of a source are able to contribute to a requirements process and say, "Okay, I need more information on the computer technology that's emerging in Iran." So, with that in mind and a list of requirements as these emigrés come out, they question them initially, and say, "What's your occupation, where did you work, how long have you been there, what kind of a degree do you have?" We can say, "Okay, he goes on that pile, he goes on this pile." Then you have a pile of folks who may be able to answer some of those requirements that have been generated by many of the customers, both within the Air Force and outside the Air Force.

Another very lucrative source nowadays for intelligence is our own people, because we go across a lot of borders now that we weren't able to go across before. I know the Air Force has almost a sister-city relationship. We have a sister-wing relationship with the Russians now, and we have a wing over in Russia that is a partner with a wing, say, in Texas, and they exchange visits all the time. We come over and they let us fly some of their planes, and we allow them to come over and look at some of our planes. . . .

As a result, there are all sorts of opportunities to gain insights into what other countries are doing, and that's just an example. It goes across the board in Poland and other areas. So, when Air Force senior personnel who visit these countries come back, our guys will sit down with them and debrief them. Most of them are willing enough to do this, and before they go, if we have something that we can think of that is important, we'll ask them to take a look at these particular areas: "If you happen to be in this factory, see if you can gather some information for us." So, we are finding our own forces, both military and civilian, provide a great source of intelligence now that the world has changed so dramatically.

Another big role for the smaller number of HUMINT sources is foreign material acquisition. That's kind of a strange term, but it means trying to get a piece of equipment out of a hostile country that

can give us some insights as to how good their technology is and what we need to do to compete with that technology, to do a better job of defeating it with jamming, or destroying it, or doing something that makes it inefficient in the battlefield. So, we use these folks, once we get a contact, to try and get that equipment from behind those enemy lines or from behind the borders.

When you switch the HUMINT guys and gals to wartime, they go from emigré interrogation to interrogating prisoners of war. We do a lot of that. We try to capture as many documents as we can to see whether or not there's data in those documents during wartime that can give us some insight as to what the enemy's tactics would be — for example, their ground maneuver tactics, their airborne tactics — and translate those documents. Sometimes we are able to translate these with computers now. We just put in a Russian document, for example, and the English translation pops out on the other side. We are getting very sophisticated with that.

Again, during wartime, if you can find a weapon system or an aircraft that was shot down, as we did in the desert, we try to get the pieces out of that aircraft — the airborne warning receivers that tell the pilots that a missile is coming, or their weapon systems that actually send the weapon against an aircraft — and finely tune and look at that technology to see if there is a way of defeating it. So, a lot of that goes on during a war to try and capture as much enemy equipment as you can to analyze it.

A lot of things are going on regarding the future of HUMINT. You'll find that after Desert Storm a lot of the emphasis in the CIA and other places is that we probably need to put more emphasis on HUMINT, because HUMINT is one of the few ways where you can get into the guy's mind and find out what his intentions are. You have to know what is he going to do next, and some of the other technical measures you use may not get you to that level of detail. So there is a general perception in the intelligence community that we need to put more emphasis on HUMINT. It is a declining art and one that we probably should be paying more attention to.

Student: I just wondered, before you get out of this HUMINT section: after Desert Storm, were there some critics who said that you needed to increase the Air Force HUMINT numbers because, in this age of smart bombs and whatnot, some of imagery intelligence, for example, might not be able to pick up what is in a facility, if you remember a couple of the accidents that appeared to not be weapons facilities . . .

O'Shaughnessy: Yes.

Student: . . . whatever, and then you just need to just get humans inside or some better source . . . ?

O'Shaughnessy: Exactly. That's exactly the point that I'm trying to make now, getting the intentions, getting somewhere where signals intelligence and imagery can't see or hear. You have to have an agent in place who can tell you that there is a chemical factory being built there, that they are trying to conceal it. It isn't an aspirin factory, it's a chemical or biological warfare factory.

So the recognition was, preserve and grow in HUMINT because you haven't got enough of them to do the kind of things you describe. That's very hard to do as the forces are being reduced so, especially in the military. We are taking 25 or 30 percent reductions in the intelligence forces. In this Air Force Intelligence Command that I'm describing there are today about 17,000 people, and we are going down in a very sharp decline to about 13,000. And that's on today's budget. We haven't factored in President Clinton's efforts maybe to go even deeper than that. But, again, the future is more HUMINT.

Student: General, do you consider OSI (Office of Special Investigations) a HUMINT asset? Do they have a HUMINT mission?

O'Shaughnessy: In the Air Force, OSI and intel are not together. There are a lot of advocates who say they should be under the same hat. Whereas the OSI tries to find agents who are trying to do something to us, we don't put those together. They should be together. They do the counterintelligence type of mission in the Air Force. They try to determine if somebody is trying to penetrate our systems or penetrate our areas of responsibility in the military. It's a very small effort in the Air Force, too, but one in which there has been a lot of apostles who have said that you must have the counterintelligence and the intelligence more closely knitted together. I think in the Navy they do that. Do you know, Frank? I think the Navy has their OSI in with their intelligence.

Student: I didn't know what OSI is.

O'Shaughnessy: Those are the guys that do the counterintelligence, and they are a small group in the Air Force. We actually have physically

collocated the HUMINT and the OSI because it's a marriage that we think is needed between them, although structurally they are under two different organizations. We have gone ahead and put the HUMINT guys and gals, the small group that we have, in with OSI agents so that as we are planning operations, they can tell us what that same group of guys is trying to do to us in the States to see if there is any linkage there that we can make.

Student: Sir, are we talking out two sides of our mouth a little bit by saying we need to expand our HUMINT efforts at the time we are cutting our folks?

O'Shaughnessy: Yes, we are. It's the HUMINT effort, though, that we haven't cut. When I get what they call a bogie from the Department of Defense or the Air Force, they say, "O'Shaughnessy, you have to reduce by $5 million a year for the next six years and you have to reduce 17 percent of your work force." My efforts up to this point are to find that in places other than HUMINT because other intelligence disciplines, as I'll show you, are much more robust than HUMINT. So I haven't taken anything out of the 413, and hopefully I won't have to because they're down to the bare bones anyway.

Now, on the Army side of the house, the Army has a huge HUMINT organization. They have about 1,900 military soldiers who are HUMINTers compared to 413 in the Air Force, and the Navy is smaller than both of us. So, we are about in the middle.

During Desert Storm, HUMINTers spent a lot of time interrogating prisoners of war. One of the factors that comes out that is a real bother to me is linguists. Arab linguists are a scarce resource in the United States Air Force, as in most of the services. We found that we didn't have enough. We are still in the desert and still working over there with Arab linguists, but in order for me to get an Arab linguist trained, it takes 63 weeks, minimum, to get him out of the language school and then into the field and then some more time to train him in the military side of the house. So, what we have to do in intelligence is try to project two or three years out as to where the next crisis will be, which is a real crystal ball trick to do. Nobody would have told us that we now need Serbo-Croatian linguists. If somebody predicted that three years ago, we would have been surprised, but now we do. We are starting the air drops, I think very shortly and we are going to have to have an intelligence support mechanism with Serbo-Croatian linguists as a big part of that, especially in the signal side of it. We are scrounging all over the Air Force to find out who speaks Serbo-Croatian, and I think we have come up with a total of about 26 in the whole United States Air Force.

So, the language problem is a big one and we've really experienced that in Saudi Arabia. We are now in the process of training more Arab linguists because it is pretty clear that that part of the world may be one of the hot spots in the future. We are putting out about 20 every two or three months from the Defense Language Institute, which is in Monterey, California. It isn't a bad place to go to learn languages and a lot of folks like that, but it takes a long time to get through the course.

Student: That seems like a huge problem, but it's nearly impossible to train linguists. Why go in and train Army people or Navy people instead of bringing people into the Army who already have language capabilities? Major George, you're an Arabist, right? People can spend a year or two in these language institutes and their commanders may think, "Okay, well he or she is foreign or whatever and he or she is ready for a combat situation under pressure," but the fact is that, for a language like Arabic, you have to have five or seven years in-country experience to be able to speak it and understand it well enough, especially in sending stuff over transmitters and in pressure situations. I can't even fathom how many errors have been made because people, servicemen and women, are afraid to come out and say, "Well, I'm a little uncomfortable. I've been to the language institute for two years, but I wouldn't call myself fluent." I can say that, and unless the commanders are familiar with difficult foreign languages, they won't recognize the difference. Why not take someone who is bilingual from birth or for some other reason before they are in the service and bring them into the service instead of vice versa?

O'Shaughnessy: No reason. In fact, we try to do that. Right now the counternarcotics problem is a big one, so we need a lot of Spanish linguists and what we're trying to do is recruit people who speak Spanish rather than saying let's train them from scratch. That's been kind of the goal all along, but the recruiters will go out and try to get Serbo-Croatian linguists if they're in a plan that says we may need those in two or three years. But I suspect, although I can't be sure, that we didn't have anything in the books that said there is going to be a great need for Serbo-Croatian linguists. So, when you need them right away, if the guys who are recruiting could find some and could get them in and just get them through basic, there's a short route

to getting them right into the system. But that's always been a philosophy — trying to get native-speaking linguists — especially on the HUMINT side. This side is really tough. If you're just doing the transmission side and it's only military and you're listening to signals that are not too complex, you can probably get by with a minimum of training, but to talk to somebody and to interrogate them in Arabic, as Doug will probably tell you, is very, very difficult to do. So we do try to recruit native language capability as often as we can. As soon as somebody comes into the Air Force, a mandatory test is language capability. We test them and see whether they have a language or they don't. We test them to see whether they have the capability to learn a language. We have a test that isn't even a language. It's kind of a strange language that they put together just to test whether your mind is capable of learning languages. There's a strange breed. It seems like when you learn one language, it's easy to learn more than one. We've got people who are German, Laotian, Vietnamese, and Russian speakers, and as the targets change, we send them back for another language and they're able to do this. Their minds are such that they can learn multiple languages, and as you say, they are bilingual. So now we're taking all our Russian linguists and all our German linguists, who are no longer very much needed in the Air Force, and we're training them in Serbo-Croatian and other languages. Most of them are raising their hands to do it because we give language-proficient airmen and NCOs proficiency pay. They get more pay than the average guy does. We pay them extra because it's such a demanding school. Right? Do you get a lot extra?

Student: They didn't have that then.

O'Shaughnessy: They do now. You were probably what they call a "scarce language" when you were in. What were you, Russian?

Student: Arabic.

O'Shaughnessy: Arabic. You see, now they're paying Arab linguists extra.

Student: It changes from time to time with the requirements.

O'Shaughnessy: We'll have to get you back into it.

The area of signals intelligence is probably the largest part of most of the intelligence in the Department of Defense. We used to be called Electronic Security Command (ESC) when you were in it, I guess. We changed our name and we consolidated a lot of these intelligences under one organization. But there are many assets around the world who do signals intelligence, collecting various signals over the airwaves.

The National Security Agency, where Greg hangs his hat, is our master, gives us our direction. A lot of these linguists whom we use are involved in this kind of discipline. They are a major resource and we just discussed some of the practical aspects of keeping them current, trained, and training them into the force. But NSA calls all the shots on that. Just as CIA is kind of the number one daddy on HUMINT, NSA is the number one guru on signals intelligence, and they, under an executive order, have the authority to do everything that needs to be done in this area and the people who work in the Electronic Security Command in the past and AFIC today are an arm of the National Security Agency in this discipline. We do what they tell us to do. We try to focus on Air Force-type targets in this environment, but they're the guys and gals who give us our tech data, our daily tasking. They help us develop the positions that we use and the systems that we use to collect the data.

We also have, in addition to a large number of big Pittsfield sites around the world that do signals intelligence, what we call "tactical assets," which in the Air Force are airborne reconnaissance programs that collect signals intelligence. Some of them collect imagery intelligence, but for this grouping, there are RC-135s. The Navy has EP-3s, which are airborne reconnaissance platforms that do signals intelligence. We have more control over these. NSA has kind of given the tether a little bit of slack in this area and says, "Okay, you folks in the service, since these assets tie directly to supporting the warfighter that can control them, you can tell them what to do and what kind of signals you want them to go against." We see a very changing future in the signals environment because of the change in the target. We were all focused, as Tony said before, on the "evil empire," so we had lots of Russian linguists and we had lots of signal sites all around the Russian perimeter, all around the old Soviet Union, from Masawa, Japan, to Edzell, Scotland. Now that that's changed, we're moving a lot of those assets back to the States. So the average intelligence specialist in the Air Force, during the time you were in the service, was assigned overseas. Now, the average intelligence individual, to gather intelligence in the Air Force, will be assigned in CONUS (continental United States) because most of our

access is changing and we're moving back to the CONUS. We're adopting technology to do that.

The National Security Agency has the largest parking lot in the world, I think, and it gives you an indication of how big the discipline is when you see the size of the complex that manages it. This is just the management structure for the signals intelligence world: about 20,000 people work there. I have about 2,000 Air Force guys and gals working in that building. But the disposition is changing now. We're going to try to centralize everything in the United States and technology and communications is allowing us to use satellites to remote a lot of that information back to the states so that many of the assignments for young airmen and NCOs or sergeants will be in the States in the future. As I said, they are the ones who control signals intelligence.

We have a lot of folks who work in the Agency. I would tell you it hasn't always been a good marriage, but now it's probably as good as it's ever been. One of the things that the military used to always fight for in the National Security Agency was the ability to hold some good, solid, management positions. When we grow officers up through the ranks, they have pretty good jobs when they're out in the field. There will be a commander of a group of people doing signals intelligence. If you're assigned as a 21-year old out of a tech school as a lieutenant in Masawa, you may have a flight of 200 or 300 people working for you. When you go back to NSA, you probably have a desk and maybe a little computer working for you and that's it. So there's a real disparity and we're now addressing that. NSA has become much more willing to let young officers and sergeants take on more areas of responsibility in the management structure of the National Security Agency. So, a very good rapport is going on there as we dramatically change the structure of signals intelligence in the future and move a lot of our assets to the United States.

Imagery intelligence provides a variety of ways in which you can take pictures of the enemy. There's this film process, there's infrared, there's electrical-optical, like television. Unfortunately, fragmentation makes IMINT critical. It isn't working very well in the Air Force. We're scattered around. There's no single belly button in the Air Force for imagery. When we created the Air Force Intelligence Command two-and-a-half years ago, imagery was so scattered that we couldn't figure out what to bring into Air Force Intelligence Command. So we're working now on trying to figure it out and we've got some good ideas, I think, to bring this imagery piece under the Air Force Intelligence Command so all the disciplines, all those tools, are under one organization.

Imagery has played a big part in intelligence over the years and we have a national imagery collection as well as tactical imagery collection. You probably saw some of the criticism of imagery as a result of Desert Storm. You know, we'd have an image but it's not here in time. We need to find out, "Did we hit that target yesterday?" "We're waiting for Washington to send us a picture." Or we get it in a theater and we can't send it out to the ship so that tomorrow's strikes from the carrier don't go back and hit the same target. We didn't have what they call a "distribution system" within the theater so that we could take this image and pass it on to the ships and then pass it out to the fighter squadrons who are going to prepare for the next day's strikes. So one of the big lessons learned out of Desert Storm is that we have to do a better job of orchestrating imagery, trying to tie some of the national assets with the tactical assets and getting the pictures, whatever their source, out to the pilots on the ships and on the air strips, to the tank drivers, to those who need to have a pretty good idea as to what the enemy looks like after yesterday's strikes. We have to do a better job on that.

Mr. Gates found, too that in the overall world of imagery, there was a problem, so he tried when he was the DCI (Director of Central Intelligence*) to found a Central Imagery Office (CIO) in Washington, and it's just been created. It will have a civilian chief and a military deputy, probably a two- or three-star general. That's a good sign, because we're seeing now that the CIA and the national intelligence community are looking at not only supporting the customer that Dr. Oettinger was talking about, kind of the national customers, but also the military customers. You'll have a military guy and a civilian running this new office. They're just trying to get their furniture together and get settled. So, we're getting at one point in the national scene where imagery is consolidated, now we have to get into the Air Force and try to fix it up so that we can get one point in the Air Force where imagery is the focal point. That's a screwed-up mess.

Oettinger: May I just try to wrestle something by you to test my understanding and also make sure that the class understands the roots of this fragmentation. Do you want to say a little bit about why you

*The Director of Central Intelligence has government-wide responsibilities. He is also the Director of the Central Intelligence Agency.

think it's so fragmented? I mean, as to what the reasons are?

O'Shaughnessy: I can tell you some of my thoughts on fragmentation. One, everybody, from an Air Force perspective, thought they had to have their own imagery capability. So, when we had tactical imagery assets, they belonged to the tactical commander. He had his own imagery processing system and he owned it, so there was nobody else in charge. Each service had its own tactical imagery operations, and they couldn't exchange data among themselves. So, we grew up over the last 20 or 30 years in the tactical world with that kind of an attitude.

On the national scale, I think that the emphasis, at least initially, was that the national imagery collection systems were supporting the National Command Authority and the Washington customers, and that the guys who had their own tactical imagery in the theater didn't need some of this national imagery, so there was at least a hesitancy to develop the systems that would allow them to receive it in the field directly from a national resource. So I think you had those two mentalities growing, and then the final realization that both of them need to complement each other.

Now, how do we get all this together? How do we get systems that take the national imagery, talk to the tactical imagery, and send it out to a carrier or to a wing? So I think that maybe some of the machinations that went on in the past got us to the point where we are today: where everybody has a different system, and we all go to separate contractors to develop a system to pass that imagery to another service or to another flight. Even within the Air Force, we were developing two or three different imagery systems to transmit imagery around the theater because the folks that we relied on to develop that for us were very slow and cumbersome in developing the capability. So the commanders would say, "Hell, I'll go and get it off the shelf as we were talking about. We'll buy it. I know that there's a place that makes a good imagery transmission system and I'll get it for my squadrons and yours." I was guilty of that myself when I was head of intelligence for the Air Forces in Europe. I just couldn't wait. Those squadrons needed the imagery and I couldn't wait for the system to come, so I had money and went out and bought it. We all have that temptation and as a result, we've got a very fragmented imagery system.

Student: Sir, could you spend a little more on the concept you're talking about on damage assessment from Desert Shield? My specific question would be, was the problem that the technology wasn't necessarily there to facilitate the collection of the battle damage, say on the targeting of Air Force strategic objectives, or was the problem that what you could collect couldn't be analyzed and gotten back to the targeting people?

O'Shaughnessy: I think the second part is one piece of the equation. The national imagery was going into the theater, and without getting into the classified area, you're kind of limited as to how many pictures a day in a certain area you can take. If you had that SR-71, you could go right over the target, take a couple of snapshots, come back and say you got it or, you didn't get it, guys, and you've got to go back again. The national system is not quite as steerable as all that, so you have to rely on "Is it going to be there for four hours today, or do I have to wait six hours to get a shot of it?" So that was a delayed process there. Then, there was an analysis made in Washington as to what they did or did not hit. That certainly took time, whereas in theater, they had either the same picture or they had camera film from the aircraft itself that took it, as you've seen on some of these gun-camera films on TV. General Schwarzkopf said, "I just saw the target blow up. Why do I have to wait for this picture from Washington to tell me I don't have to go back in tomorrow?" So that marriage of the tactical imagery and the national imagery wasn't quick enough. One was right away available to them and the pilot said, "I don't need to go back," yet the description they were getting in Washington because they may have been a day or two behind was, "No, we saw a whole bunch of targets that we haven't hit yet." So that was one of the catalysts for doing the CIO and one of the things that we have to do to try to iron out how we bring it all together so that commander can know within 24 hours what the battle damage assessment is. That was probably one of the biggest media criticisms.

Oettinger: Could I try something on you to tie that response to this question to your explanation to me about the fragmentation and see if that hangs together? I agree with what you said, but I'm going to try to expand on it a little bit because one question in my mind and it may be in the students', is why is everybody always so stupid in doing things in such a dumb way? I mean, when you think that, you know, you could have had . . .

O'Shaughnessy: I know some guys who got promoted to general doing it that way.

Oettinger: Well, I would say exactly and try to make it now sound more friendly. Number one: what you describe as the national assets had their roots were in essentially Cold War, strategic, nuclear, et cetera, issues. And number two is, great secrecy. The revelation of the U-2 was a major problem for President Eisenhower. Until the Carter Administration, nobody even admitted that satellites were doing anything. It's one of the strange chapters in American history that, although there were lots of books written, it was late in the Carter Administration when he was going to admit that he was using satellites for strategic espionage. So that, for a variety of reasons — it seems we have cultural, budgetary, secrecy, mission reasons — these things that you described as the tactical assets on the one hand and the national assets on the other were built in completely different worlds for different reasons. Later on, I mean as in Desert Storm, which was kind of the first opportunity to really exercise this in a massive visible way in the manner that it was, then we say, "Gee whiz, you know, the stuff that we constructed for another purpose is not quite right for the current purpose." So, I want to see if you agree with that, because it may be of some importance to folks prospectively to think that what you're doing tomorrow for today's requirements may 10 years later look a little bit stupid. It's not quite clear how you avoid that. Am I off the wall?

O'Shaughnessy: No, it's very true. For example, the national assets, some of those satellite assets, are so sophisticated that they give you a very small area of coverage and give you some specific detail on an area. Whereas, if you go out and ask a pilot what he needs, he says, "I need broad area. I need pictures that show me my route in so I know where the AAA (anti-aircraft artillery) is and where the guns that might hit my aircraft are. I need to know where the mountains are. I need to know where some markers are so I can make my left turn and hit the target." Whereas the systems that Tony is talking about were developed to get much more specific. You know, is that a missile silo down there, and is that something that could be a threat to me from a nuclear perspective? So we're finding out now that the systems that were built for a tremendous amount of money, although they have some application for the warfighter, are now being used by the warfighter but they don't satisfy his requirements. At the same time, things like the SR-71, which was that big Blackbird that could go in and take pictures very, very, quickly and come back out, were so expensive that the tactical side canceled it. When they canceled that capability, they had to rely more on the national assets, because these tactical assets were disappearing because of budgetary restrictions. So here you have a high cost capability built during the era of the potential nuclear holocaust trying to serve somebody who is trying to figure out what window in a building we put this tactical missile in, and how I get in and out of the target area. I think you're seeing now that the CIA, maybe Mr. Woolsey as he takes over, is going to try to figure out how we can modify and adapt the national imagery systems to satisfy military as well as national requirements. So we have gone on different paths. The budget has driven us this way and the requirements and the secrecy. We just admitted last year, I guess, that there is a National Reconnaissance Office, an NRO, when even that word couldn't have been spoken previously.

Oettinger: I must, I must, I can't resist it . . . because you look through 10 years of the history of the seminar and this is the first time those three letters were pronounced in this seminar, even though you read them every day in the *New York Times*. But it was against policy for a uniformed military officer to utter the three letters, just as in the same way the Carter Administration was the first to admit the existence of satellites. It sometimes leads to a strange conversation. The only thing stranger in my experience is the Russian refusal to let the U.S. use Russian names for weapons in treaties and so forth for fear of a leak internal to the Soviet Union, so that you'll find in all treaties the American names for Soviet weapons being used and you get some strange things that way.

O'Shaughnessy: As maybe a footnote to all this before we move off imagery, I would tell you that now that we can talk about the National Reconnaissance Office, which is essentially the office that does manage a lot of these national resources — a lot of them imagery — they are now at all the tables when the Air Force, for example, intelligence officers, senior intelligence officers, meet and start talking about requirements. There's an NRO guy sitting there trying to figure out, "How can I help those military folks do their job with all these sophisticated assets that I have?" So there's progress on the horizon.

In the old days, if a CINC wanted something from national assets he had to go back, put in a "Mother, may I . . . " through the convoluted system and they would say, "Okay, those are tomorrow's intelligence requirements." So he didn't have that control. Now they're trying to change that so that the CINC in the

battlefield can say, "I want that satellite to be at this place, at this date, because that's what my battle plan's going to do." So that was problem one that they're trying to change.

The other problem was that they did get the imagery at the same time in most cases. There was a link into the field and there was a link back into the Washington area. But once it got into the field, they couldn't get it around to the people who needed it. It landed at one place and then we were actually using aircraft to ferry it around to the wings because we didn't have a communications system to get it. So every day, the imagery would come in and we'd fly it out to the carrier, we'd fly it out to the bases, and we were using aircraft to fly it all over the theater. So, two problems.

Oettinger: You know, again, in the days right after Desert Storm, it was sort of interesting. It depends on who's doing the looking and who's doing the seeing and so on. There were a lot of folks who took great pride in what was accomplished because, for some folks, the notion of taking these systems that were designed for another purpose and another era and so on, and make them usable at all for this purpose, was a great triumph. They were still patting each other on the back when they got kicked in the butt because although they were successful in getting it, it wasn't their job, it wasn't anybody's job, to distribute it to people who in prior situations had never used it. So if you step back, there's a certain irony to that, and probably some lessons some of you students ought to be thinking about in terms of term paper topics about how you get flexible. Because if you do one thing well, I mean the thing you're supposed to do, nobody rewards you for adding thought or, heaven help you, money, to do some job you weren't being paid to do. And then you get kicked in the butt because you're not doing the job that is now necessary because the situation has changed. It's a difficult problem.

O'Shaughnessy: As we talk about Desert Storm, I would leave you with just an underpinning to all that. We all tend to talk about the failures because we want to capitalize on those, but General Schwarzkopf and General Horner will be quick to tell you that they had the best intelligence that any commander has ever had in the field in the history of warfare, that it's never been better, but these are areas that they think can be improved to make it even more sophisticated. Intelligence played a big role in the left hook that they made and things like that because we were able to pretty well tell General Schwarzkopf what these guys were up to. So, I just didn't want to leave you with the impression that the system was completely broken. These are areas that we're trying to address because we think the potential is there to do even better if, God forbid, we have to go to another type of Desert Storm war where we have to employ all these assets.

We talked about the U-2. Years ago we couldn't show its picture either, but this is a great imagery collector. It's also a great signals intelligence collector. The dilemma here is you have one aircraft and if you do two missions, you've got to trade off sometimes. Where you'd want to be to collect some sort of signals intelligence may not be the place you'd want to go to collect the imagery, and vice versa. So, around the world, where we fly these, we have to make a decision each day, and if it's in a crisis, it's even more critical as to what is your primary goal with that mission aircraft today. Do you want to get some pictures? Do you want to get some signals? If you want to do both, then one is going to be degraded. It's hard to get both at 100 percent capability.

Now we've looked at HUMINT, we've looked at SIGINT, and we looked at imagery as part of the tools that intelligence has. Now scientific and technical intelligence is an area that takes all of those and applies them. For lack of a better term, there are other ways of addressing this. But we're trying now to get all that scientific and technical intelligence data that we just talked about and all those sources. We're trying to get a handle on weapons systems that the bad guys may be building; you know, what are his missile systems going to look like? What are his airplanes going to look like? So, to do that, up until a few years ago, all we had to do was get a red database. In the terminology of the military, red means the bad guys. So, what do we have to do to get that on the Soviet Union? What do we have to do to get that on Iran, Iraq, maybe China, anybody that we may have the potential of going to war with?

Now, with the sale of U.S. weapons and other weapons around the world — the Germans, the French, everybody's selling weapons systems — we've got to have a database that tells us just how capable the Mirage airplane is. When we went into Desert Storm, we were going against the Mirage airplane, which is a French airplane. We were going against our own Eye-Hawk missile systems, which we sold to the Iraqis and they were firing against us. Believe it or not, this isn't an easy problem — getting data on our own systems. You go to

Lockheed or Northrup or Grumman and say, "I want to know the vulnerabilities and capabilities of this weapon system that you're selling to the Iraqis." I mean, that's bad business, and we've backed off getting that out. The Iraqis or whoever are going to be a little bit hesitant to buy that weapon system. So getting blue data is a very difficult situation to do. Gray kind of means our allies — going to the French, going to the Brits. It's equally difficult to get these kinds of data; it was much easier to get the red. We had a system for getting the enemy's database. We can't go out and try to steal blue or gray data, or capture their missiles and exploit them. So it's a real problem with a tremendous amount of effort in the scientific and technical community to develop databases on weapons systems. We try to take a piece of that in Air Force Intelligence Command; there are equivalents in the Army and the Navy that are doing the same thing against weapons systems that their counterpart services may be developing, and they split the pie up generally by service capability.

The bottom line is to try to prevent surprise. You don't want to find out in the battlefield that his tank can fire further than your tank, so you have to get in much closer to shoot and you're within his range, whereas he can step back another 50 to 300 yards and fire and hit you. So, we need to make sure there are no surprises on the battlefield. The way to do that is either to go and physically steal the piece of equipment, get a scientist through that HUMINT debriefing that knows a little bit about that missile, and question him, get the drawings, get the schematics, and analyze them. When systems were shot down in Desert Storm, we would take various pieces off the aircraft and bring them back and analyze them.

The organization in the Air Force that does that used to be called the Foreign Technology Center, but in order to confuse everybody, we keep changing the names. Now it's called the Foreign Aerospace Science and Technology Center. It's the same organization, only with a different title. It's at Wright-Patterson Air Force Base. We have about 1,900 people there. They're mostly scientists and engineers with a heavy civilian emphasis — more civilians than there are military, about 1,000 civilians and maybe 900 or less military. As I said, we have the role for the Department of Defense for producing the intelligence on air-related weapons systems — these types that have anything to do with aircraft. We and the Navy have to kind of share this so that the aircraft that we are analyzing is not the same one that the Navy is analyzing, because they have an air mission too. So we do a pretty good coordination through what they call the Defense Intelligence Agency, which has the pocketbook for all the money that goes into these types of things, and they will piece that out with some sort of guidance as to what missions and what systems you will analyze, and what the Navy will analyze and what the Army will analyze. So there is a lot of effort in foreign material exploitation, which is a convoluted term, but it just means getting these weapons systems, and getting some insight as to what these guys and gals can do with those weapons systems in hostilities so that our armed forces are not surprised when they get on the battlefield.

We have been doing it since 1917. It's probably one of the longest-lived organizations. They started by trying to duplicate foreign aircraft. They would take a weapon system and try and reverse engineer it and produce another one and then we'd take these systems (we still do, if we capture one) and use it in exercises against our own aircraft. If we happen to get a MiG-29 or a MiG-25, we'll fly it against the F-15 and the F-16 and see if our pilots can beat it, or turn on its radars or its electronic systems and see if we can defeat them, or jam them, or screw them up somehow or other with interference.

So, a big business in the United States Air Force and the other services is trying to get ahead of all this in terms of what's their capability and how can we defeat it so that we are not surprised in the battlefield.

Student: How prominent is the role of open source material in scientific and technical intelligence?

O'Shaughnessy: It was big in the days before the Soviet Union folded because scientists like Dr. Oettinger loved to publish, and as a result of that, in all the areas around the world, the scientists would publish unclassified reports that go to the censors. They didn't understand it, you know. If it's really technical, it's very hard for some of us liberal arts majors to understand it, so it gets right through the censors, and it's open literature and we've been able to exploit that with these computer translators that I told you about. We put in a Russian, or Japanese, or German document and we get the English translation, and then we are able to exploit that. So, a lot of effort goes into that, and now there is a whole new discipline being called open source intelligence because a lot of the borders are open and there's lot more access, and we have more documents now than we have the capability to exploit.

Just as with emigrés, we have to be selective about what documents we try to exploit and go through, but open source literature is something you are going to see grow on the horizon. A lot more assets, a lot more money will be put towards open source intelligence — not classified documents, but just open source that's available to anybody in the intelligence world who has the time and the linguistic capability to address and attack those documents. The CIA is very active in orchestrating, within the entire community, a way in which we can, in a cooperative team effort, exploit the huge availability of open source literature that's out there and will continue to be out there on the horizon.

Oettinger: I've got maybe two footnotes to that: one, a personal one which is that the first 10 years of my professional life were spent on one of the earliest efforts to develop those language translation machines, because . . .

O'Shaughnessy: I saw your book on that, . . . that's why I was joking . . .

Oettinger: Under the sponsorship, of course, of the Foreign Technology Division through Rome Air Development Center . . .

O'Shaughnessy: You weren't there in 1917, were you?

Oettinger: I was not there in 1917. But, post World War II, yes. That was kind of an interesting chapter in my own life. But the second footnote has to do with your comment about open sources. Let me ask you this: If there is all that money and all that emphasis on open sources, why is that a job for intelligence agencies rather than the private sector?

O'Shaughnessy: It may not be. Right now, the only people who are available, I think, that can explore this option are intelligence folks, because, at least in my narrow experience in the Department of Defense, I don't know whom else I'd turn to. But it is certainly a very easy thing to turn over to contractors. You don't have to worry about the classification, the security problems that Greg worries about, and things like that. You can just turn it over and say, "Get that translated and give it to me. Then I can assess what the value is." So, I think it's a very lucrative area to turn over to private industry to do for us.

I think the CIA is coming to some sort of closure on that. We've got a lot of folks meeting to try and figure out the best structure to develop to exploit open source literature. A big role in this Foreign Technology Division thing is that they've had such capability over the years in it and one of our chief scientists there is the Air Force representative to help CIA determine what kind of a structure we should put in place. But I would not be surprised to see a lot of it go into industry.

Student: When you say exploitation going to industry, you simply mean the basics of finding the open source literature and translating it?

O'Shaughnessy: Translating it, and possibly more. Contractors certainly have a lot of the clearances, and they can exploit and come to conclusions from the data. Certainly, if they know what we are looking for and we have spelled out the requirements, like we need to know what range a surface-to-air missile has, if they've got a list of those parameters, then as they translate or go through the document, they can answer a preset of questions and provide the finished product to the intelligence community. So you can do far more than just translating it.

Student: You'd want to cross-check that with the classified sources.

O'Shaughnessy: Yes, exactly. That would be the next step for those who have the luxury of time and effort to do it: you would cross-check it against these other disciplines. What have we gotten from imagery about that weapon system that could give us a few more clues as to how sophisticated it really is?

So, we would like to do that again. We said that one of our problems is that we can collect a lot and will be able to collect a lot in open source literature, but that analysis and processing capability is a real strain on the resources and we have to focus it on just what we think is the most critical.

Student: Is the Air Force staying the consumer of the FBIS product?

O'Shaughnessy: Yes, and that's part of this too. Although I think the FBIS budget is going down dramatically.

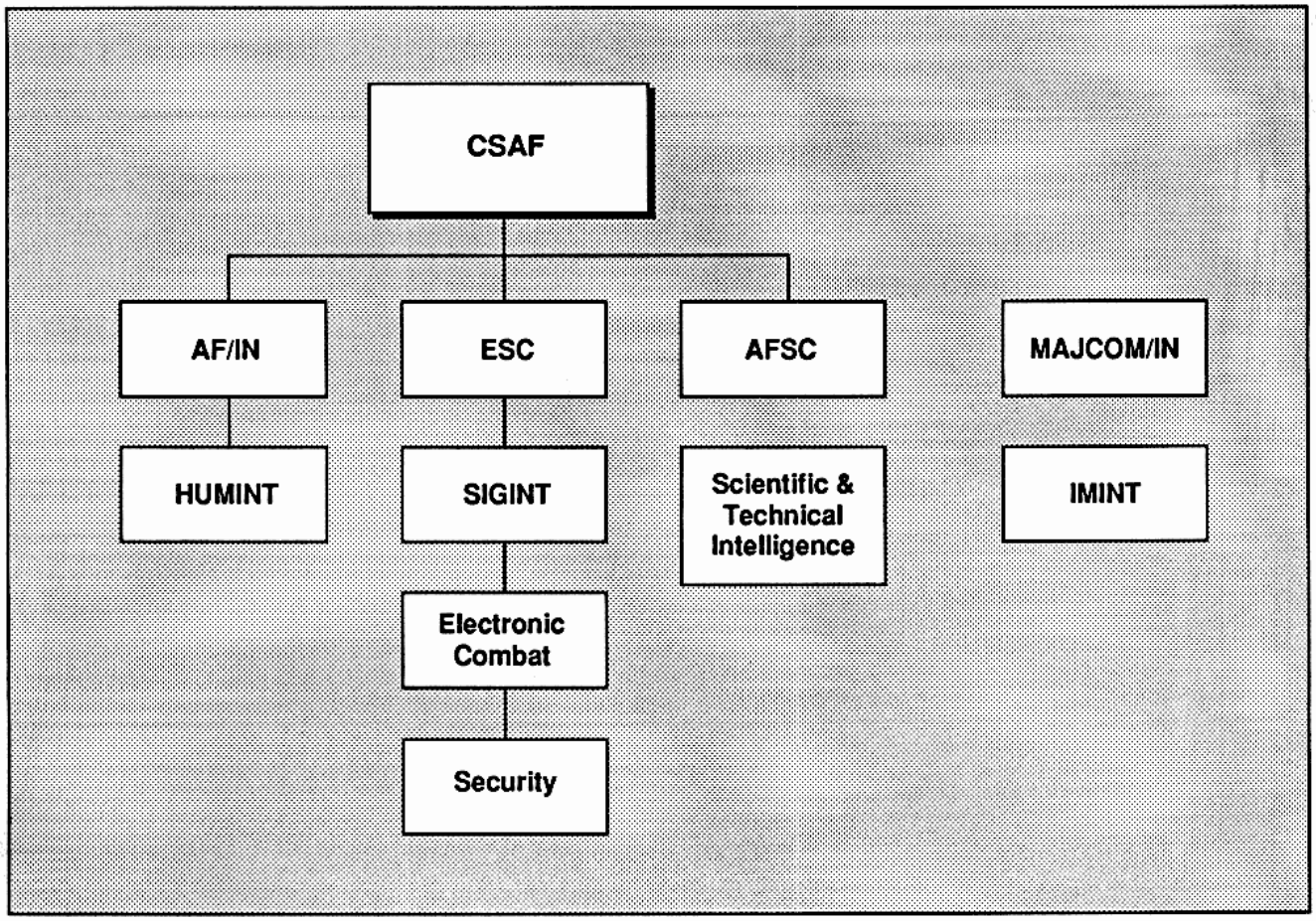
Oettinger: For those of you who don't know the acronym, it's the Foreign Broadcast Information Service.

O'Shaughnessy: I think Radio Free Europe, or Radio Liberty, or something like that, has been canceled by the Clinton Administration, so I'm not sure there will be a lot left of FBIS in the next couple of years. We have exploited that and have

had a relationship with them all over the world over trying to use their resources. And their officers' clubs, they have great officers' clubs . . .

Okay, I don't want to bore you with a lot of charts, but I just wanted to show you the dilemma that faced us in Air Force Intelligence, because we talked about HUMINT (figure 2). The Chief of Staff of the Air Force is the number one guru, the four-star general who runs the Air Force. The head of Air Force Intelligence had HUMINT under him. That was the one piece of the discipline he had under him. There was the Electronic Security Command that I was the boss of. I had signals intelligence under me, and I didn't bring it into this briefing, but if you want to ask questions we can get into it. We also have electronic combat, or electronic warfare, under this command, and the security part — communications security, COMSEC: how do we protect our own computers from the spies getting in and the hackers pulling out all that secret data away from our computers?

I think security is the spying arena of the future. We're not going to use a lot of agents in the future and neither will they. They're training people just to get right into our computers and take out anything they want with all the global network that exists today. So this is an area of great concern to the Department of Defense and particularly to the United States Air Force. How do we protect those computers from access by those who we don't want



CSAF = Chief of Staff of the Air Force
AF/IN = Air Force/Intelligence
ESC = Electronic Security Command
AFSC = Air Force Systems Command
MAJCOM/IN = Major Command/Intelligence
IMINT = Imagery Intelligence

Figure 2
Pre-AFIC Subordination

to get into those databases that I described before? But anyway, those two mission areas are part of ESC in war.

We had a command that did R&D — the Air Force Systems Command. They had that scientific and technical intelligence piece under them, and then each one of the major air commands around the world had a piece of the imagery. That's where we talked about the fragmentation. So we started off with at least four people responsible for those types of intelligence that I've described before.

So we had a dilemma and somebody decided, well, maybe within the Air Force and in the other services, we ought to put them all together. There was the Goldwater-Nichols amendment that said that we have to become more joint in the armed forces. We all fight now in a joint environment. Any kind of a war that's fought is never fought by one service anymore, it's always under a joint commander, as it was in Desert Storm, as it is in Somalia, as it will be in Bosnia and Yugoslavia. All the services have to work together. So we're going more and more joint and that's a double-edged sword, as Tony and I were talking about earlier, because in the mind of the people who manage the military, and that's usually the civilians that work in the Department of Defense under Mr. Aspin, when they finally appoint whom they're going to put in those jobs, jointness is goodness in their minds. Anything that you can become more joint in, the better they'll operate. They do that with the commissary service. They put all commissaries together now under one organization. They've done it for budget and financing. All paychecks now and all your travel vouchers come out of one organization. They're looking at it for the Medical Corps, putting all the medical folks under one organization. Why do you need the Medical Corps in each one of the services? Senator Nunn talks about this a lot: you know, why do you need four Air Forces?

So, the dilemma in all this is that if you go too far into the joint arena, there's got to be a line that you draw that says, "Okay, that will gain us some efficiencies and maybe provide a better service if we put them under a "purple," as we would call it, hat in the services. Put Army, Navy, and Air Force together under one boss and he's got charge of this whole discipline. We do that a lot in intelligence because, as I told you, NSA's got signals intelligence and all the services work for that one boss. The Defense Intelligence Agency has general military intelligence under it, and it could take a whole two hours to define the difference between NSA's role and DIA's role. But anyway, we're moving more and more towards jointness.

In my judgment, you still have to maintain some intelligence capability within each one of the services because only an individual who works within an organization like the Air Force, Army, or Navy, has a real deep appreciation for what that pilot, that ship driver, that tank driver needs to execute the war the next day, and he has to live and work as part of that environment. If you put too much of that in the joint area, that appreciation will dissolve and I think will do a disservice to many of the warfighters who have to depend upon intelligence, especially at the day-to-day level of executing the war, to survive. So, in the services today, you'll see an effort, a tug of war, as to what goes into the joint world of all of us working together as a team and what is preserved outside that as a service entity, a service-specific intelligence discipline. I'm finding myself putting more and more of these Air Force intelligence assets into the joint world. I'm getting pressure to put even more of them into the joint world and I'm resisting going too far so that we can preserve that capability within the Air Force.

Oettinger: This is, I might just underscore, an exceedingly important topic, which unfortunately we don't have time to pursue at much greater depth today, although you're welcome to ask questions on it. I do commend to you the reading in Allard's book on command and control,* which deals with the topic that Gary just raised in much greater depth than we can today. It deserves a great deal of careful thought and the Allard reading will introduce you to more of the subtleties than we have time for today, but thank you for bringing it up.

O'Shaughnessy: You'll see that effort as you read the press and a lot of this is going to happen in the future. I think there will be a complete review under President Clinton of the roles and missions of the services to see if, since 1947, when we created the Air Force and created a lot of the intelligence organizational structure that we have today, like NSA, that is the structure we need for the 21st century. Was Desert Storm, for example, the first war of the new generation or the last war of the old generation? Is that the way we're going to fight from now on, or is that the last war you're going to see with that type of battle lines drawn and the good

*C. Kenneth Allard, *Command, Control and the Common Defense.* New Haven, CT: Yale University Press, 1990.

guys and the bad guys fighting across a very marked border? It's a good question. I don't know the answer to it. I don't know whether that was a mirror of what we're going to face in the future, or whether that was probably the last traditional war that we'll ever fight and all the ones in the future will be a lot different. So you're going to see, under the pressure of Mr. Aspin and Senator Nunn, a reevaluation of the Air Force's, and the Army's, and the Navy's, and the Marines' roles and missions. And you may come out with a completely different equation, and intelligence will be a big part of that. You may see more and more in that study and effort to make intelligence very, very joint and to move away from each one of the services having their own intelligence capability. I hope not, but the potential for that is there as they go study what the Department of Defense and the services should look like in the 21st century.

Oettinger: If you'll forgive me, I'd like to interject another point here, because a number of you in the critiques you handed in on Martha Maurer,* which I handed back to you today with my comments and also with Doug's, took her to task for asking so very many questions but giving no answers, and I took you to task for taking her to task on that largely for the reasons that Gary just articulated. There are going to be a lot of questions asked over the next few years because everything is sort of up for grabs and there is this question of what's the new world like? And it struck me to confess to you I instigated Maurer's study and asked her to ask questions, so when you critique her for asking too damn many questions, you're critiquing me, which is fine, but I thought I'd take a moment to address you. I say, we've got to ask the questions and we've got to understand what the fundamental reasons were for the answers under the old regime, because if you just look at the way it was and don't ask why did it get that way, you'll be in a hell of a position even to figure out what the questions should be or why they might be addressed one way or another under different circumstances. You've just helped me make the case for that framing of the questions in a manner which I hope will be useful to you.

Student: You gave me a free lunch if I surfaced that, right?

Oettinger: Yes, right.

*Martha E. Maurer, *Coalition Command and Control: Key Considerations*. Cambridge, MA: Harvard Program on Information Resources Policy. September 1993 [Research Draft].

O'Shaughnessy: A couple of the other catalysts that pushed us toward consolidating intelligence within the services is that the Secretary of Defense directed that we try to consolidate under one command within each service. He also said, kind of reduce and eliminate as many of the functions that you have overseas. Try to combine them, eliminate those that you don't need.

Cryptologic sites, the NSA world, the SIGINT world. Many times we had an Army, a Navy, and an Air Force organization within the same building doing various pieces of the SIGINT mission, again focused on their counterparts' services. The Navy looked at Navy targets, the Air Force looked at Air Force targets. We've gone now to the point where we've worked these much more closely together and consolidated them so that the Navy, the Air Force, and Army are working like a team in these SIGINT sites. Again, I think that efficiency is probably something that, although it isn't joint, its working together has been beneficial. Then I showed you the way we were fragmented before. The direction was to put them under one command and that's pretty much what we did.

There are also other reasons within the Air Force that we felt were pretty important. We have customers out there that had to ask at least four different people for information on Air Force intelligence because there wasn't one boss or one belly button, so we were trying to create a single operational voice for Air Force intelligence. Tony and I were discussing this at lunch. If all those disciplines worked separately, it's very hard to bring them together in one fused report to give to the commander who needs them. You know, he'll get a piece of HUMINT, and he'll get a piece of signals intelligence, and he'll get a piece of imagery, and it's up to him then to try to put it all together. So the purpose of this command was to see if we can develop a capability so that he can go to one place, get his requirements satisfied, and we can turn over to him a product that reflects all those INTs that the Air Force has responsibility for and he doesn't have to depend on his diminishing staff to provide that kind of fused product.

Then there's the timing. These activities are still going on, but the reductions force us to look at ways in which we can do them more efficiently, and certainly that means trying to bring them closer together. Base closures around the world drew us closer together and are doing that more and more as we get further and further down the road in the Air Force restructuring and the closure of many of the bases, and the decrease in the number of people we

have. The budget continues to go down. That was a catalyst again. Efficiencies are probably gained by bringing things together, so there will be more of that. The budget, the horizon, is still pretty bleak for the Department of Defense.

Then, of course, a key ingredient was that we had to change our focus and new mission areas were evolving as a result of new targets. Dissolution of the USSR, although it leaves out many, many areas, one of the things that it creates a problem for in the intelligence world is that it was obviously easier before to focus your intelligence resources because you had one major target to look at. Now we have what we call the rest of the world — in military jargon that's ROW. With ROW, you have to have the capability to look at all these various pockets of potential conflict around the world, whether it's ethnic unrest, counternarcotics, counterterrorism, whatever it happens to be. You have to have the analytical capability, the linguistic capability, the communications capability, to address the whole panoply of targets that you didn't pay any attention to before because you had one big bear that you had to look at and that's where you spent all your time and energy. So it's a big challenge to the intelligence community in the future. So what did they do? They created Air Force Intelligence Command.

Student: Just to go back a little bit, with that fusion you spoke of, how do you make sure that that happens fast enough to get it to the battlefield or theater? When we were discussing joint operations, you said the importance of having a separate Air Force or Navy intelligence group is that those naval officers would know what the guys on board the ships would want to know about. How do you make sure in a joint theater that that fusion has the information that, coming from an Air Force intelligence group, that Army theater commander might need?

O'Shaughnessy: That's a good question, and maybe has a couple of answers to it. Under the first part of the question, the fusing of the data is very difficult. We've been struggling for years as to how do you fuse two disciplines, electrically? The HUMINTs can do it; you know, we can work it out on a piece of paper and come up with a result, but to do it with a computer, or to do it with a screen, is very difficult. So the challenge to me was to develop some sort of systems that can do that. We have developed a system or two now that we can bring to the battlefield, get that intelligence data that comes down in real time from various assets (we don't get it all in real time, but that which we do), and fuse it and deliver it immediately. We have that technological capability to do it. So that piece is at least promising; we can do the fusion.

The second piece, a very complex question, is as I'm doing that for the Air Force, right now there is also a guy doing it for the Navy and a guy doing it for the Army, which is kind of the tactical intelligence piece. He also has access to those national systems. The dilemma comes in that we're fighting with one joint commander and he has to have the entire intelligence piece from all those services. So the way we try to divide the pie is that at that level, where the commander — the four-star, the General Schwarzkopf who is running the war — is resident, he has an intel guy and he's got an ops guy, and all the intelligence that's collected in his theater by me and the other services goes up to him as well as going directly to the guys who are fighting tomorrow's war or today's war. Some intelligence, for example, is so real time that you say, "That MiG is launching, he's coming at you, he's fired his missile . . . Okay, now you take over and decide whether you want to engage him." That's one type of intelligence. Another kind is the BDA, or bomb damage assessment, and we try to disperse that.

So you have two courses. First, the three services are giving the data to their fighters in real time. At the same time it goes up to the General Schwarzkopf level where they merge it and they look at tomorrow's war. Okay, we've now seen the intelligence that those guys gathered for today. What will that allow me to do tomorrow? And second, what we're coming to is another joint operation and that is what they call a joint intelligence center. Those joint intelligence centers are growing all over the world now for these CINCs, these commanders in chief who fight the war, and that's another area where Tony and I were talking in terms of as you create joint intelligence centers, I'm putting Air Force folks in there, and the Army is putting in Army guys, the Navy, et cetera, so that in the Pacific you'll find a joint intelligence center in Hawaii with 1,000 people in it. It's a lot of intelligence folks. Their job is supposed to be to service the guy that you asked about, and that is the joint guy. They're going to give him all the intelligence so that he can fight his war even though it was collected by many of these service assets around the board.

But there's a lot of confusion in the joint intelligence world, in the joint intelligence centers, because if you have a crisis anywhere in the world, and you send your armed forces over there, they need to be able to plug into that joint intelligence center and know exactly what they can expect to get

so that the Air Force, Army, and Navy guys don't have to collect that data. They're going to get it from that joint intelligence center. But right now, unfortunately, if you go to the European theater, you'll find that you'll get a different level of intelligence than you do if you fight a war in the Pacific theater. So the Air Force, for example, has to bring a different type of intelligence to a European conflict than they would to a Pacific conflict and that's very, very confusing.

So the Department of Defense now is trying to find a way in which you can do a cookie-cutter approach to the joint intelligence centers, so that if you have to fight a battle or if you have to go to Somalia, the Army knows exactly what they can depend upon from the joint intelligence center that's standard, and the rest they can bring. Otherwise, they can leave the other stuff home, and they're going to get it from the joint intelligence center. So that's a new emerging joint perspective for intelligence, and you'll see more about joint intelligence centers if you follow this course in the future.

Oettinger: I'd just like to add to that, because it's even much more complicated. If you take the hierarchy that Gary has outlined, of the difference between the requirements . . . "the MiG is on my tail," "the bomb damage assessment . . . ," you add to that a couple of more layers going up through the Defense Department on eventually through the National Security Council and with the President and his decision-makers, you have all these issues repeat themselves, including the question which arises, let's say at the CINC — at the Schwarzkopf — level of "Do I really want all of this stuff fused? Or do I want some independent opinions so that I can tell whether these jokers are kidding me or making the right judgments or whatever?"

You see this in spades at the level of the presidency. Under the present conditions, there's this tremendous pressure to consolidate budgetarily, intellectually, because of the excesses of fragmentation in the past, but one of the reasons why CIA and DIA as separate intelligence agencies have survived is that there have been checks and balances one against the other. You look over the record over the past couple of decades, instances where the CIA says "Black," and DIA says "White," et cetera, et cetera, and a certain amount of more or less healthy, more or less disagreeable disagreement, and then you pays your money and you takes your choice as to whether you regard that as healthy debate or insubordination or bureaucratic infighting. What you call it depends on whether you like what's going on or not. The dilemma sort of gets worse because you get these bits and pieces. In Roosevelt's day, he played that for what it's worth. If you look at all the biographies of Roosevelt, he was fantastic at sort of dividing and conquering. He wouldn't want a joint anything because he played one off against the other and he was the fusion center and nobody else, okay? Whether a President today can play this or not you don't know, but there is in our seminar record a marvelous account by Richard Beal* and also one by John Grimes** on pulling all this stuff together in the Office of the President. You see, if you don't have the fusion, here's the hell of it: if you don't have it someplace else, then you've got to create a staff in the White House, and Beal gives an account of early Nixon (not early Nixon, the movie actor, Reagan) shenanigans on this score where they essentially tried to put together a system to do fusion in the White House. Well, gosh, the intelligence folks didn't like that very much, so they wouldn't give him the time of day because they figured they'd get preempted in there, and so Beal gives a good account of how that was happening. There's an irony in all of that, which is that the system that they built was the one eventually used by Ollie North to muck around with the Iran-Contra thing.

So if somebody wants to write a term paper on that, I don't know if all the information is yet available, but you take this question of whether you fuse it or you don't fuse it, and again, once you start getting a close look at it, it's hard in all the ways that Gary outlined and it's still harder when you have the political overlay of "Do you want a couple of sources so you can kind of use them as checks and balances?" "Do you want to pull it together? If so, who pulls it together?" Then, if you've got a system that pulls a lot of stuff together, how can it be misused, and that's where the Ollie North issues come in. So what seems on the surface, again, like sort of simple-minded, technical administrative questions, once you start peeling them into who really runs the Air Force or who runs the war in a theater, it's not a simple problem from the point of view of a Schwarzkopf or whoever else might have aspired to doing it. In some of the stories of the

*Richard S. Beal, "Decision Making, Crisis Management, Information and Technology," *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1984*. Program on Information Resources Policy, Harvard University, Cambridge, MA, February 1985.

**John Grimes, "Information Technologies and Multinational Corporations," *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1986*. Program on Information Resources Policy, Harvard University, Cambridge, MA, February 1987.

service chiefs and their role in that war and how Schwarzkopf kept them in Washington and everything is a whole other set of term papers to be written. So you have a political overlay on top of this Army-political thing and *not* in a pejorative sense because that's the essence of democratic decision making. You have raised in these questions of how you fuse it or you don't fuse it, or where you do it, and if it's fused here, do the pieces still, as you indicated, flow because different services then need to use the raw stuff in different ways. There's a lot of meat in this sort of bland-sounding, technical account of this, which in the way a great craftsman like Gary gave it, underneath that there's a lot of passion.

O'Shaughnessy: I thought you couldn't detect it from listening to you. Fused also means another problem, that if you air a little dirty laundry in the intelligence community — I think General Schwarzkopf pointed this out — that it's sometimes hard in the intelligence community to have anybody come out and say, "That's exactly the way it is." We always hedge it with "probably," or "possibly," or something like this and General Schwarzkopf kept saying, "I want the intelligence community to come out and say, you know, "Tomorrow this is what they're going to do." We all kind of vacillate because we're afraid that the Monday morning quarterbacks will come back and say, "You made a mistake. You see, that wasn't what they did." I remember projecting the death of Ayatollah Khomeini for about six years in a row. I finally stopped doing it, and that was the year he died.

So as I was saying, we tried to create a command under the old Electronic Security Command, which had the largest number of assets, so that was the key place to do it.

I'm not going to give you a salesman's pitch on TQM, but we talked a little bit about it at lunchtime. But Total Quality Management is a philosophy that we're bringing to bear very fruitfully, I think, in the Air Force. I just tell you this for some of you folks who may be interested in the management or business side of all this as to how we created this command. First of all, there was lots of resistance to it because each one of those stovepipes of discipline-specific organizations did not want to be absorbed by this big SIGINT discipline. They wanted to go their own way, and there was a lot of resistance to the Secretary of Defense guidance that said, "You've got to become part of one organization." So we tried to get the key players involved early in this game so that they could feel like they were part of the creation process and not something that was downward dictated to them. We established teams that brought in members of each one of those disciplines to sit down and say, recommend to the boss ways in which we can most effectively integrate your discipline into this huge new organization that we've created. So these stakeholders were buying in very early to the process because they were involved in creating it.

We tried again to figure out how you integrate all these disciplines in a smart way. Fusing the products is one, but actually getting them to work together and, if you've ever been a part of any large organization, to kind of create a structure where, for example, in Japan we had four of these organizations working side by side all reporting to different bosses back in the States. So how do you take those four organizations in Japan, that are within walking distance of each other, and suddenly say, "Whoops, you've got one guy in charge now and he's the guy who's in that discipline you're not part of." Suddenly, you get a lot of emotionalism. So how do you integrate thousands of people without creating a morale heart stroke? We did establish a Total Quality Management office to try to do that.

We established various goals that we had everybody sign up to . . . including awareness. We talked at lunchtime about the fact that many people in the service don't know much about intelligence. So the guys who are asked to fight the war don't even know what questions to ask. Some of this is brand new to many of you and if you were a fighter pilot in the Air Force, you would probably know just about as much as you do today about intelligence. So you don't know what to ask that young Second Lieutenant for. You don't know what an imagery capability is. Where can I get a picture? So, there's been a great effort, on my part anyway, as to, first, making those folks outside the intelligence world aware of what's in here. What is in that kit of tools that you can ask for? If you don't know what to ask for, the intelligence guy can sit on his hands for three years and do absolutely nothing.

Also, a big surprise is that we don't know what the others do in the intelligence world. It's some of that secrecy that we've gone through for years and years, so that the guys that do HUMINT don't know what the gals are doing in the SIGINT world, and the imagery people don't talk to anybody. You've got three disciplines going around and nobody knows what the other guy is doing. So we've tried to create an educational arena within this Air Force Intelligence Command so that if we're going to do any of that fusion, you certainly have to know what

the other guy's capabilities and limitations are. There is a lot of education going on.

We're trying to focus on the customers. That's usually Air Force operators, whatever they are, whether they're missileers or pilots or radar operators. We try to find out what he needs and get it to him.

I won't belabor structure, but again, there is the problem of putting them all together, how to get them under one organization. Once you've got them there, how do you keep them interested? How do you keep them trained? How do you keep an environment in which they can continue to do what you're doing here, and that is advance your knowledge and education so that some of these scientists and engineers and real, skilled technology folks don't just die on the vine because you're not paying attention to getting them off to various courses and education to improve that discipline as the technology around the world changes so dramatically. If you don't keep up with that, intelligence will be absolutely worthless.

Improving the quality of life is becoming tougher and tougher as the budgets go down: giving the folks the kind of working environment you have here at Harvard, the very nice environment that you have here in this room that is provided to you. Sometimes we're not allowed to give those types of living and working conditions to all our folks around the world because the budget is reduced so much that we now have to do what we call "self-improvement." That is, we roll up our sleeves and we paint the rooms ourselves and we put the shingles up and we build the picnic areas. Believe it or not, that's doing a lot for morale, though. Every time I visit a unit now, they are proudly pointing out what they did as a team. So there are two sides to that sword.

Another one that Dr. Oettinger and I were talking about was keeping pace with emerging technologies. If you don't do that in the signals environment, for example, you won't be able to do anything in 10 years in the Signal Corps.

What we did is we brought them all together. I have an organization in Europe at Ramstein, an organization in Hawaii, and an organization at Lackland that brings all those different pieces under one wing command. So we try to do a lot of consolidation, and then the day-to-day operation gets done by these centers of excellence. The one at Andrews is for HUMINT. The one at Kelly is for the SIGINT, or the crypto operations. Electronic warfare I didn't talk about today. FASTC is the one that does the scientific and technical intelligence. So we're already down to about 15,000. I said we had 17,000. There has been a budget cut since we started this presentation. We're down 2,000 folks.

The whole goal is to try to get the intelligence to this guy at the end of the arrow (figure 3). Air Component Commander is our term, and means the

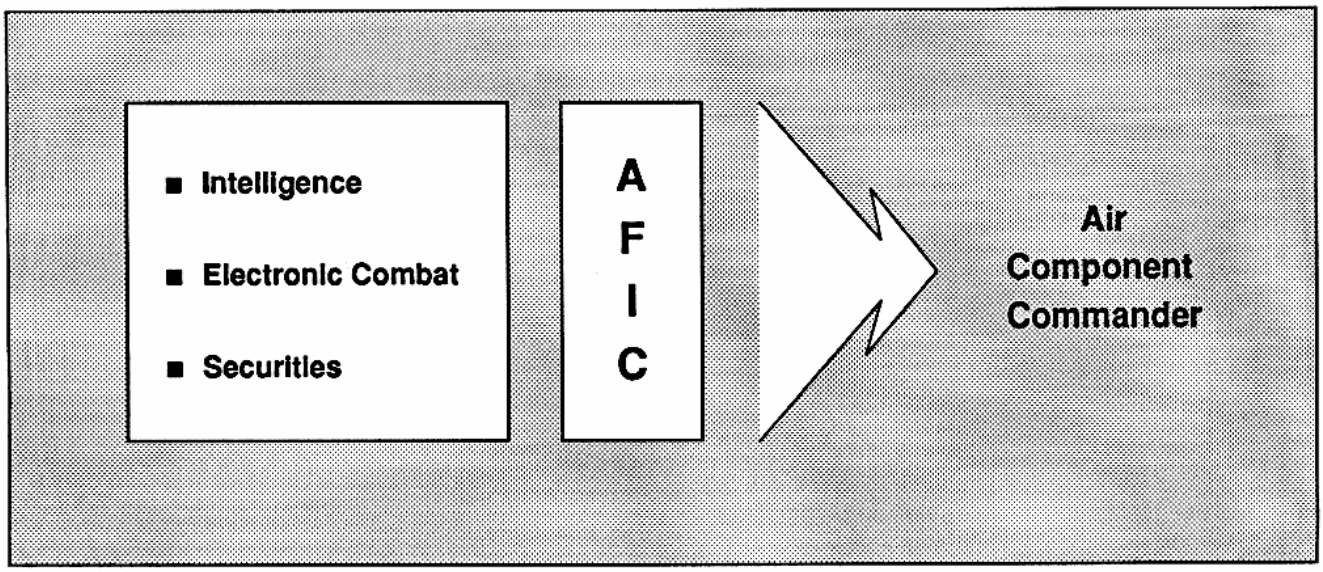


Figure 3
AFIC Support

Air Force guy who is flying the airplanes under that CINC. There's usually a CINC who's in charge of Army, Navy, and Air Force, and then there's probably a three-star general who runs each one of those wars — the air war, the naval war, and the ground war. The CINC brings it all together so that they don't run airplanes into each other.

My job as an Air Force guy is to try to bring these disciplines — we talked about intelligence, but electronic combat and security are the other two that I have in the Air Force Intelligence Command — to this guy so all he has to do is come to one place to get all the answers he needs. That's an overgeneralization, but he doesn't have to go shopping around for his intelligence, for his electronic warfare, which is the type of thing you do to jam radars and things like that, and computer security or communications security (the securities) — how we get into his computers, how he's getting into ours.

There's one belly button — that is not an easy task to do, because you want to get all the disciplines together and, as you said, get it to the guy quickly, so that he can plan tomorrow's war. They develop a war plan in the Air Force with a 24-hour cycle. They plan tomorrow's targets today and it takes about 24 hours to get that whole coordinated air targeting order together so that the next day the flights can go. So we have to get that intel into that cycle within 24 hours and then while he's fighting the war, we have to be able to warn him of threat as things pop up on the screens. So rapid response is important.

What we started to do was exercise more like we're going to fight. To try to get our exercises, we have a huge range at Nellis in Nevada, right outside Las Vegas, where we fly red and blue missions. Some guys play enemy, some guys play the blue guys and we fight each other and we give the intelligence to these folks to say, "Okay, here's how the Iraqis would fly and fight a war," because we know from intelligence how they operate, and we give those pilots all those techniques and they fly it against our pilots. Or we give them an aircraft that we captured and say, "Okay, we're going to fly this MiG against your aircraft." So, more exercises, and we're doing more and more of that within the budget limitations that went down.

I told you about a fusion system we're developing to try to fuse all those INTs that suddenly became a part of our command so that the guy can get the one fused report. It's a picture, or it's a broadcast. We have both. Right now it's getting like CNN: you can tune your radio and get the kind of intel you want. There's a broadcast that we put out with intelligence, in real time, as the war was going on, and we've gotten so sophisticated that that broadcast was tuned in by Secretary Cheney in his office and on a television screen. You could see the war as it was being fought in the air. That's the kind of intelligence we're merging to in the modern-day war. Now there are dilemmas in that too, because you don't want the Pentagon managing the war as they did during Vietnam on the front lines. So there's a little bit of caution that's part of people like General Schwarzkopf, who knows General Powell has got a television screen in his office that can watch the day-to-day activities of the war. He can say, "Direct that aircraft 100 degrees to the left," so he doesn't want that.

Oettinger: There are accounts in several years of the seminar: the Grimes talk I mentioned earlier has some stuff on that; General Stilwell;* General Cushman** on several gradations of that probably including the Korea tree-cutting incident, some of General MacArthur's activities and so on. This problem of what does the boss know and how can he bug you with it is an absolutely critical element in this question of what do you tell whom. That's a very fundamental point.

O'Shaughnessy: Well, communications is such now that the boss can learn almost as much as the CINC in the battlefield can have. You can almost have the same picture of the war at the same time.

Oettinger: That's not always welcome. One of the reasons why Truman fired MacArthur was that MacArthur insisted on pretending that his teletype was disconnected.

O'Shaughnessy: So we're working on systems. Again, it's a double-edged sword. You've got to make sure that you use it properly. What I've done in the Air Force Intelligence Command, in order to try to increase that awareness level that I told you about is hire a lot of pilots and radar operators and

*Richard G. Stilwell, "Policy and National Command," *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1982*. Program on Information Resources Policy, Harvard University, Cambridge, MA, December 1982, and "Structure and Mechanisms for Command and Control," *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1985*. Program on Information Resources Policy, Harvard University, Cambridge, MA, April 1986.

**John H. Cushman (USA, ret.), "C3I and the Commander: Responsibility and Accountability," *Seminar on Command, Control, Communications and Intelligence, Guest Presentations, Spring 1981*. Program on Information Resources Policy, Harvard University, Cambridge, MA, December 1981.

special ops guys, you know, the Green Berets, to work in the Air Force Intelligence Command so that as we develop approaches to intelligence, these folks can say, "Hey, I'm an F-16 pilot and this is what I would want out of that particular type of intelligence," and we'd say, "Oh, okay, we'll bring that into the requirement." Or "I'm the guy who is the refueler," or "I'm the guy who drives the air-lifters into Bosnia to drop the supplies and this is what I would need if I were flying C-130s." So we've hired all those people and they're part now of this intelligence-customer relations point that tells us how to tailor our intelligence a little bit better.

Student: Sir, do those folks get involved with going out to other commands and units in trying to show those people how they can better define their requirements?

O'Shaughnessy: Yes, we do a lot of that and a lot of PR work. I hate to say that in intelligence, but we go out and show them what's available, how to get it, what's on the menu that's available for the future, and what kind of system they should order. We have to kind of plead with the CINCs, for example, if we want to develop that system I talked to you about, we're trying, as Dr. Oettinger may have pointed out before, to make systems that are interoperable. You don't want to create your own system and not be able to talk to anybody else's or to your own computer. So what we have to do is make sure that we have one focal point, and because money is tight, we have to make sure that the war-fighter wants that system and so does the CINC. So any time we come up with a bright idea, I have to go out and get those CINCs to vote "Yes, we're willing to say we want that as part of our repertoire of intelligence systems." So there's discipline in this, and part of our education is to go out and tell these CINCs what's available to them so that they can make an intelligent vote when they're asked to support something that's being developed.

We were in Desert Storm and Desert Shield and we're still over there. We never left. There are still over 100 Air Force intelligence folks in the desert doing the kinds of things you see in the news every day, but now we have one belly button — the guy, the two-star now, who is in the desert can push the button and say, "I need this kind of intelligence for the Air Force side of the house."

I think we've learned something. We're continuing to learn. We're far from the point where we can say we know it all.

How do you get them all to work for one boss? It involved very spirited conversations to try and get all these folks to work together under one head, but we were able to do it and in each theater we came up with one guy — a colonel — who's in charge of all the assets in that theater. That four-star CINC can come to him anytime he needs Air Force intelligence help, and they're all multidisciplined now. They're not just a SIGINT wing and a HUMINT wing, and a scientific and technical wing; they have all the disciplines under them, and they are learning, too. A lot of these guys and gals didn't know what their compatriots did. So there's a learning experience going there.

We are consolidating units that are together and we always like to brag that we're ahead of schedule. I don't believe it, though.

Streamlining the command. I won't bore you, but there's a lot of effort to do management better in the Air Force because we don't have as many people. So we've stopped a lot of the layering — you know, chief, deputy chief, branch chief, division chief, an office chief — everyone has to have a sign on the door and a secretary. We've cut a lot of that out. We have no more deputies. We've reduced the number of colonels in the Air Force so we don't have nearly as many high-level bureaucrats as we used to have. In our headquarters, we used to have about 800 people. We're going down further to 600 people.

We're trying to eliminate a lot of duplication. In any big organization, there are people doing the same things, and that certainly happens in AFIC. I'm trying to download the doer functions. Headquarters should just do policy, resource allocation, and those kinds of things, and the doer functions of day-to-day operations should be done by those centers of excellence that we have down there — the HUMINT, the SIGINT, et cetera. So a lot of management-type activities are going on in this area.

A lot of these overseas units are closing. Many of these are the big SIGINT units that I told you about, that we had surrounding the Soviet Union, all around the periphery. A lot of those will close because the targets have changed and so they will be moving back to the States.

In talking about the future, the Defense Intelligence Agency has been chartered by the Department of Defense to be the guru for all intelligence in the military. So a lot of those jointness things that I was telling you about are beginning to migrate to DIA. In the HUMINT world, they want to do all the

tasking, so I'm trying to get a balance between DIA and the Air Force so that I can be a voice for Air Force needs and say, "Hey, if you put all those requirements together, mine may never get heard." So we're trying to figure out a formula here where, as DIA grows and this jointness grows, the Air Force will still preserve some capability.

I talked to you about joint intelligence centers, and some of the dilemmas there. My focus, and it's not the job of all people in intelligence, has to be on the warfighter. He's the guy I have to pay priority attention to, so I'm his advocate in all these NSA arenas, DIA arenas, CIA arenas. I'm supposed to be the guy who says, "Hey, don't forget that the ones that are flying the airplanes need some of that imagery in real time and they need to have a capability to pass it to their squadrons," et cetera.

We're not as welcome in a lot of countries overseas as we used to be with our intelligence collection, so our access is not as easy. So again, we're moving back to the States, and it makes intelligence collection maybe a little bit more difficult, but then there are new windows open like open source literature, more emigrés, may be a greater source for HUMINT, so there may be a balance there; as we lose our physical access around the world, we may be able to have electronic access. We may be able to get through their computer systems. We may be able to talk to their scientists more, read their literature more.

Remoting means coming back to the States, leaving maybe some of the front-end, technical systems in the overseas locations. We're using satellites. We will bring all that back to the States so that the operators of the intelligence system are somewhere on the continental United States rather than in Germany, in Japan, in the Philippines, places like that. So we're going to do a lot more of that, and we're going to continue to reduce the budget. As you're trying to do all these challenging things that I've just discussed with you, if you still have to reduce the budget constantly, it unfortunately makes you focus on next week's, next month's, problems, rather than on what you should be doing, and that's thinking three to five years out. What do you think the intelligence needs will be out there? Sometimes it's tough to get the staff to do that, when today it's Yugoslavia, tomorrow it's Somalia, the next day it may be something else that you have to pay attention to and figure out how you're going to get the linguists out there, and the aircraft out there, and the people out there. That was the future in terms of structure and issues.

Likewise, anybody could come up with his/her own list of targets here, future intelligence targets, but I want to focus on a few on which I've spent a lot of time in my small world. Nuclear proliferation is one of the President's highest priority intelligence targets now, and certainly one that we all are concerned about is the proliferation of nuclear weapons. So the intelligence community is going to have to spend more time and resources on gathering intelligence in that arena. That can involve not only the disciplines that I talked about, but also seismic detection systems, the measurement of effluents in the air; all that is part of intelligence to try to determine radiation measurements to see who's exploding what, who's testing what kinds of weapons.

Counterdrugs involves the Spanish linguist problem we talked about a little while ago. It's a tough, tough problem. I don't know whether we're making any kind of a dent at all, but intelligence supports the law enforcement agencies. The military does not go out and attack druggies or shoot them down or anything like that. We pass the data over to the Drug Enforcement Agency, Customs, people like that who can in fact do something with our intelligence.

Treaty monitoring. There are a lot more treaties on the horizon, especially between Russia and the United States. We may come out with a comprehensive test-ban treaty where all nuclear explosions and testing may be either done away with or minimized. Do we have the capability to monitor them? Can we tell our leadership that, "Yes, we can sign a treaty like that because our intelligence is capable of telling you if there is a violator." A good question. I'm not sure we know the answer, but we, in Air Force Intelligence Command, are developing a capability and it says we probably have to bring our allies in as part of this team because we ain't going to be able to do it alone.

New threats that are coming. If we don't keep up with science, these types of threats — chemical, biological, the space threats, how many people are using satellites now and what does that do to the global communications network — became more serious. We're all tied to this one network. So your computer can tie to something in Iraq and tie to something in Japan, and how do you work all that? How do you do that from an intelligence point of view and how do you make some sense out of it?

Should we be involved in economic intelligence? Mr. Woolsey was asked that question, I think, as he was quizzed by Congress during his hearings. Should we be collecting economic intelligence on

our allies — Japan, Germany — and passing that to contractors so that they can get a heads up and outbid or develop a system that's more competitive? Should we do that? I don't know the answer. That's a political decision. We have the capability of collecting that intelligence. We do a fairly good job at it, but we have not gotten to the point where we would take it outside of the Department of Defense. We don't give it to our contractors. We don't give them the technological edge. Other countries do. So are we putting ourselves at an economic disadvantage by not using that type of intelligence? All sorts of laws would have to be changed for us to do that.

Oettinger: Just a note on that. Next week, Randy Fort, formerly of the State Department, will spend a great deal of time on that specific topic. So, keep that in mind.

O'Shaughnessy: And, of course, our target is worldwide now. We can't just focus on the Soviet Union. We have worldwide targets, national uprisings all over the world, and anybody who reads the newspaper each day, I think, knows as much about that as I do. How do you get prepared for that? How do you start training linguists and operators and systems to address this "rest of the world" problem?

Counterterrorism. I know one of you is involved in the terrorism world — another very elusive target. There are highs and lows in the Air Force intelligence world on that. We spent a lot of time on that about five or six years ago. Now, in the Air Force picture, the terrorism horizon is not as high. It may be higher in the CIA environment, but it's a very, very tough target to go against. There are low-level transmitters if you're going to get signals intelligence. HUMINT may be able to play a little bit of a role in there, probably bigger than any other discipline, but it remains a very, very tough target. Both terrorism and drugs are very, very tough targets. Most of these folks have lots of money, they practice communications security, they have encryption devices, they're elusive. As soon as we fly the AWACS looking for them, they stop flying. The AWACS goes down, and then they fly. They have a good intelligence network all their own. So these are very, very tough targets, but these and whatever else you can add to your list are the targets we should be worried about in the next five years in making sure we develop a capability for them. Unfortunately, we spent, as I said, too much time looking at today's activities and challenges.

So, to wrap it all up, Air Force intelligence is changing. We created a new command to try to keep up with all those changes, but I think it's just the first step. I think we're continuing to change. I'm going to a meeting tomorrow with the head of the Air Force to look again at intelligence in the Air Force and say, "Have we got it right yet? Or should we tinker with it a little bit more to make sure we got it right?" There are going to be more closures, more reductions. How do you deal with that from a personnel perspective as you ask people to put in a full day's work and yet say tomorrow you're subject to being asked to leave the Air Force even though we may give you a little bit of a bonus? You're going to be asked to leave because we just haven't got enough headroom space to keep the number of officers and enlisted people we have.

I do think that no matter what you do, intelligence is going to continue to be a vital discipline, both to the national security, which we said is one of our customers going up, into the Air Force mission execution, which is the other customer going down. It's proven its value. Every time we have a crisis, it becomes more and more valuable. The commanders who are willing to show you how you can improve it will also be the first to tell you that they couldn't live without it. They want to get closer to it. They want to learn more about it. I can tell you that the Chief of Staff of the Air Force today knows more about intelligence than any Chief of Staff in the history of the Air Force because he understands what this can do to help him be more successful in his mission area. We're becoming much more rigidly controlled by our national masters in intelligence, and we're becoming more centralized — that's that jointness side that we have to be careful about. We still have a great crop of Air Force young men and women who are doing the job for us daily. I hired linguists over there in the desert who are away from home about 60 percent of the time during the year, and I get letters from their wives saying, "Why can't you get John to come back to England more often?" Their homes are in England mostly. Because of the shortage of Arab linguists right now, the same guys and gals have to do the same mission in the desert over and over. We constantly keep sending them back on temporary duty. We have real professionals out there really sacrificing, doing a job. There are many unsung heroes.

Freedom through vigilance is the theme for Air Force intelligence, and vigilance is certainly the key. We can't let our guard down just because the major threat to the United States is gone and there's a perception in the CIA estimates that the United

States is now under no serious threat of being attacked by any hostile nation. Still, we are involved in putting our forces in harm's way all around the world and we'll continue to do that. So we have to be vigilant. If you don't have a database of some sort of intelligence underpinning on a nation that you're going to send your forces against, then you're putting those forces in great jeopardy of losing their lives. So the name of the game is to try to focus yourself on those countries where in six months you may be sending U.S. forces in, either to fight, defend, or do a humanitarian effort, do air drops as we're doing in Bosnia now, and to keep them out of harm's way. If we don't have good solid intelligence on what's going on, good imagery of what's in the terrain there and where their weapon systems are, then it's kind of "fly by the seat of your pants." So vigilance is the key word and that about wraps it up. If there are any questions I'd be glad to try to answer them for you.

Student: In his last speech before he left the CIA, actually a speech to the Boston Council for World Affairs, Director Gates really sort of stuck his finger in the eye of the oversight committees, the House and Senate Select Committees, saying that we need more of that; that the expertise that you find in Senator Nunn or Chairman Aspin, before he became Secretary Aspin, is an invaluable resource to the nation. There have been some things written yes and no about that. So, as a military officer, who understands the strong committee oversight and also a guy who is involved in the intelligence world, would you concur with that or would you disagree with that?

O'Shaughnessy: I think there is a lot of value in it. I deal with the Congress almost weekly, predominantly with congressional staffers, whom I'm sure you're familiar with. It's not the members themselves, but the young guys and gals who work for them. When Congress focuses on an issue like intelligence and what the structure should be in the future, or what the resources are, I think it's a good check and balance as to what we're doing. It is an objective look, and they usually do a fairly robust job of doing their homework. I guess you have to suffer through that to get the kind of checks and balances you need. You can't say, "I'm not going to do it," but if there were a better way for them to orchestrate their efforts so that the many committees who look at intelligence could kind of consolidate their approach and say, "Okay, here's what we'd like DOD, or CIA, to start looking at from our perspective," it would make our job a little bit easier and let us take some of those resources that should be doing intelligence work away from preparing answers to answer a continuous flow of questions. So it's a great service, it's part of the democratic process, but there could be a way in which they could manage that a little bit more efficiently so that we could use our resources better and give them a better answer. I'm continuously bringing congressional staffers down to San Antonio and going over and over again why I exist, why I'm structured this way, and they each have a different perspective as to why it should be a little bit different and what resources they're going to recommend to their member to be deleted or be added to the equation. That's a long answer, but, you know, it's a system we have to work within.

Oettinger: Gary, this was really terrific. Thank you very much.

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