



Russell Lyddane – Part 2 1941 - 1964

<p>Introduction</p>	<p><u>MUSIC</u></p> <p>Welcome to the Dahlgren Centennial Celebration – A Century of Innovation. We hope that this and our many other products, events and offerings will showcase what Dahlgren has accomplished during its last 100 years.</p> <p>Throughout our history, we’ve interviewed some of the most prominent minds, leaders and innovators that have been here, and we’re opening up the vault to share them with you this year.</p> <p>Today we are honored to listen to the story of Dr. Russell H. Lyddane whose work spanned from 1941 to 1964. During his tenure at Dahlgren, he directed terminal ballistics research and became the Technical Director from 1956 to 1964.</p> <p>Let’s listen to Mr. Lyddane...</p>
<p>Lyddane</p>	<p>A general observation that what we really need, we knew it was offstation housing, the kind you have now in relative profusion, so that the station personnel could form an influential part of the community to improve the public schools. I think they have improved considerably than what they were 20 years ago. Establish enough creditability that this place was going to be here and continue to be here. Always the problems when you talked to some project sponsor in Washington “well, I heard they were going to close Dahlgren down.” There was a rumor about once every two years that they were going to close everything down, particularly Dahlgren, and this did us more damage than you can well imagine. You could combat this, but still the nagging doubt was there. Were these people really going to be there when it comes down to the clutch. They may get abolished at the stroke of a pen, creditability, so what we wound up by doing was asking for an audience with the Chief of the Bureau, and Admiral Wellington gave us one, around 1955-56 and I gave the presentation, I remember, but there were a lot of people who helped on it, I don’t know who all did, but there were a lot of people who helped on it, I don’t know who all did but there were people like Ralph Niemann, Don Stoner, Carlton Greene, Hal Overman, and quite a few more, Arthur Jones, Charles Cohen, so we laid the thing out in front of Adm. Welington. In those days there was also the suggestion around that we should merge with NOL. This was pushed by Ralph Bennett, who was Technical Director of NOL before Hartmann.</p> <p>Those days were even earlier, in the late 40’s and early 50’s, off and on for the whole decade. What they wanted was perfectly clear.</p> <p>What they wanted was a field test station, they didn't have any real estate to do</p>





testing on. They would like to take this place over and make a test station out of it. After all, they had very little respect for any technical conference whatsoever, and if there was any, they resented it. They wish to see it moved to NOL or abolished. I remember telling Adm. Wellington what I thought his alternatives were. The first one that I picked up was to make this a part of NOL. I thought this would make it intimately unsatisfactorily because it would mean that Dahlgren would become a test station. We were not at all charmed at the idea of a test station because a test station, per say, would become unviable. A modicum of R and some D you wind up with a bunch of incompetence who can't even run a test station. In other words, you can't run a test activity without some intellectual stimulation of the people that are there. You can't keep reasonable competent people on a test station without giving them the ability to interact cross-talk with people who are concerned with the other kinds of engineering and scientific activity. So that if he thought of going along with this merger with NOL, I advised him very strongly against it, that it would not work. The second alternative was to give us a chance to show what we could do. I outlined to him in accordance with our previous concerted plans the capabilities of Dahlgren somewhat along the lines of those I was outlining to you moments ago. In effect said, give us work to do, give us a mission to do, we here, we're ready, we're even cheap, we can do something for you, there must be something that we can do in the climate of the R&D of the Navy today. This is not going to be easy and we know it. This is going to require an unremitting perseverance, a certain amount of faith, a certain amount of support in order to salvage continue the capabilities that we have already in being and to enhance them to whatever extent that is necessary to carry on the work you want done. We think this is the best solution. If you don't agree, then our honest suggestion would be to close the station down. Don't try to limp along the way, it's going to get worse and worse. It's going to do nothing but cost you money. Don't try to merge it with NOL, because that won't work either. Shut it. Cut the chord. Wellington was quite impressed with the presentation and in fact, I still remember, he said it was the best presentation I ever heard. Apparently people had been coming crying on his shoulder, saying, come, help us out, not giving him any clear idea of what he could do to help us out, or what would happen if he didn't. He appreciated that we had tried to look at it from his point of view and give him something that would be at least useful and present the decision to him in some sort of clear form. He went around the table, he had his senior people there, and said what have you got. One guy said, I've been worrying about guided missile safety. We don't have anybody to do the safety work. Maybe Dahlgren could take that on. We'd be glad to give it a try. That was one. The thing that we did after that, and the thing the middle- and senior level people did a superlative job of fanning it and selling it through the Bureau. Go see the guy and tell him our story; tell him what we want to do. We gave the presentation to Wellington and to these people, too, so that they knew what the party line was too, and they out and did an admirable job – see we were rather hungry, we weren't fussy, it was honest work that needed to be done would do it of course, if it was going to lead to something bigger, we'd do it even more. We were not particular hoy, and in those days NOL and NOTS had a





	<p>tendency to be rather hoy about what they would do and on what terms they would take a project. They did not want any direction from the Bureau at all. They regarded the Bureau as a bunch of people who were not scientists, and had therefore had no business running scientific projects because after all scientific projects were all they were doing. They had committed the crime of losing sight of who their customers were.</p> <p>Exactly, we thought so at any rate and the result was that we started getting work in in such fields as computations, POLARIS came along not too much after this, and we had an uphill struggle on our hands and Larry Smith didn't like us.</p>
Brooks	Larry Smith has what position?
Lyddane	<p>Larry Smith was a Technical Director in uniform. He was not a professional Naval officer, he was a reserve. He was in uniform, a Captain, later, much later a Rear Admiral, much later, under Rayburn.</p> <p>He was a NOTS man, he rather see NOTS do the work. We got some of it away, we got the Hero program, we got the guided missile safety program, some of the earlier things. We got a little bit more, a little bit more in the warhead area, which was where the A&P Laboratory became the Warhead Terminal Ballistics Laboratory. That was best, because there was the capability to make warheads, test warheads, to metallurgically examine warheads, to do calculations on explosive and do all sorts of things that needed to be done. So, we were fighting with APL to get a little bit bigger share, and we go the BULLPUP warhead contract, I believe that was the first warhead we developed successfully at one time, and everything else, and little-by-little, our budget began to climb. Our employment particularly, our professional employment began to climb, we got out of the slouth, and from then onward and upward.</p>
Brooks	Could you pick any specific program that may have been in a turning point as far as justifying us in R&D?
Lyddane	No. There was not a specific program. The biggest collection of moderate-sized programs you ever saw. I forget how many different projects we were keeping track of, but I'm sure it was over a hundred. A big project was a couple hundred thousand. Our total budget in those low days was, if I remember correctly, something like 8 million. That was our low point. When I left here, we'd gotten up to 23 million.
Brooks	Was there a period when you said, we embarked on this R&D attempt if we don't get one more project or one more program, we're going to fold up.
Lyddane	No, as a matter of fact, Wellington and even Shoffle who succeeded him and Petie Sroup, did a good job for us, and of course, as soon as we started up, as soon as we were on the upgrade instead of the downgrade, it came a lot easier.





Brooks	You mentioned Shouffle, I believe he was a PG man here at one time.
Lyddane	Yes.
Brooks:	Was Wellington a Dahlgrenite in his younger days?
Lyddane	All those guys were members of the gun club, I'm sure Wellington must have been at Dahlgren at one time, although I'm not sure when, not in my time. Petie Stroup was an aviator and not exactly a member of the club, but he was good Chief at the Bureau, so was Wellington. We had some enemies and we had some friends; we asked for a chance and we got a chance, and I think the results bear out my impression to be demonstrated that we could do what we said we could do, and as we did we got more responsibility and we got more money, a nice new building.
Brooks	That our largest MILCON acquisition ever - ever, Dahlgren 's somewhat new in history of MILCON allocations it's amazing that we got it.
Lyddane	We damn near lost it I will tell you. The 61 MILCON, we finally got it in with pain, rewrites, justifications, until heaven wouldn't have it. We got it through the Navy Department and finally through the Defense Department. We got it to a House Military Appropriation Committee. Congressman Shepherd of California was Chairman of that somewhere in committee stage, it got phased out and we got the word maybe the Navy liaison man and Mike Sellers was in command then. Harold Gouldman and I marshalled the forces. Mike wouldn't touch it with a 10 foot pole and I can't blame him, this was not the sort of thing he was supposed to do, you can't go around putting pressure on Congressmen, but we roused the local people, the ones who were going to suffer economically if the Dahlgren expansion didn't proceed. We aroused the employees who live in the county to vote, we aroused everybody else we could think of, we got after our two Senators, who were Harry Byrd, Sr. and Willis Robinson, a Byrd man, and our local representative who was Howard Smith, fascinating guy, chairman of the Rules Committee. They were all apostle's ol economy, Government spends too much, we've got to cut back. I must say that everyone of them nobly overcame these principles. They all went to bat for us. Smith went down to Shepherd, and he wanted to see this item hacked. The military Construction bill. Shepherd looked Howard in the eye and said, "I never thought I'd see you down here on an errand like that." Howard said I'm here, and it got back in again.
Brooks	That's interesting, Dahlgren had strong defense from it's Virginia senators.
Lyddane	On that one occasion, it did. That was a time when they were needed, they were pressured into it, but by this time I think a lot of people in this area understood what was going on or had some idea of it and recognized that if the





	place closed down, there wouldn't be much left.
Brooks	The economy of the entire Northern Neck would be drastically altered greatly.
Lyddane	Yes, the middle class is almost entirely supported out of Dahlgren.
Brooks	<p>The economy of the Northern Neck would be vastly altered, probably collapse. The middle class is almost entirely supported out of Dahlgren.</p> <p>At the same time I think symbolic, I bring this in, because it could easily symbolize the evolution of the changing of the guard. The Main Range had been providing, I believe, funds for a lot of R&D, or had been supporting possibly financially some of the R&D that we were been doing before your coming here.</p>
Lyddane	<p>Only a think in the sense, there were investigations that had to be undertaken, like the one that I embarked in when I first got here, which was a theoretical study of the solenoid program, it means by which we were measuring velocity, to pinpoint the errors and see what we could do to improve the accuracy of our velocity measure. That was a straightforward research project, an applied research, and a pencil and paper piece of physics. It was done in support of the Main Range. In that sense, the Main Range did do some supporting, but actually it was the other way around. We got money, even in the early days, to conduct experimental firings, to investigate, for example, the causes and possible remedies for various peculiar things guns did, like wear out at the muzzle, or wear out at the breech, fire crooked, or whatever.</p> <p>We would use the range in support of those investigations, so I don't know, I wouldn't think it quite accurate to say that the range supported the R&D.</p> <p>The range use would fluctuate according to the state of production of ammunition, of the Navy fluctuated. During World War II, during the Korean war, I suspect also during the Vietnam embroilio, proof and test went up because friction went up, the use of the range went up accordingly, in between those times the use of range would sink back, the blue collar employment would sink back, and the people who may have been pulled off RDT&E work in order to support or to find some explanation for production difficulty. Here is a guy failing, the ammuntion he is manufacturing why? This gets to be a very pressing question. When you have people out fighting it tends to be a question that get a lot of high level attention, therefore, it also get a lot of low level attention too. So when this kind of crisis is over, the people who have been spending at least part of their time on this question, get off of it and get back to the emphasis of R&D, so the emphasis shifts, it was a big shift in the early days when R&D was generally smaller, it became smaller a shift with every successive fluctuation because R&D was broadening. Even in the Korean war, we had more R&D going on than during World War I. The people had more projects and had more things to do, so our real crisis however, the crisis that I</p>





	<p>was acquainted with the serious crisis that Dahlgren had was the one of the changing in nature of R&D. This was coupled with occurring in the middle 50's, this was coupled with a development of which I haven't mentioned, is probably worth a word or two and that was the fact that the technical competence in the Bureau was going down all the time. At one time there was quite a bit of engineering done in the bureau itself by civil service people, and by people in uniform too, like Mike Skylar who had very firm opinions of development of gun ammunition, and they made their opinion felt.</p> <p>Dick Parsons was more responsible than anyone else in the development of the A&P bomb, just before World War II, This capability became less and less viable because Congress became less and less willing to believe that anybody in Washington was doing any work. They were willing to believe that people at a field station might conceivably do something useful. So the pressure on departmental employment was always much more heavily downward than even on field station employment so there began to be a shift of functions out of Washington to correspond to the shift of available personnel. The function of which at one time would have been done without question at the Bureau whether they were engineering design operations or whether they were project management operations. Operations began to get farmed down more and more to field stations. This conspired , you see, to make Dahlgren's predicament more severe because where are you going to send this kind of competence. You're going to send this kind of competence to your biggest and prosperous stations, because they obviously have the resources to deal with the increase level of responsibility, not amount, but level. We are now playing in sense the roll of the Bureau. The Bureau thought this was something quite important and needed to be done properly, so NOL get responsibility for that and NOL or NOTS looks around and says who should we get to do this work, Guess who? It wasn't Dahlgren. We had to press, not just for a project to do. We had to press for projects to do at the kind of level of responsibility that would enable us to support them in the face of a Bureau that was increasingly incapable of doing that kind of work.</p>
<p>Brooks</p>	<p>It dealt to a certain amount the theory that his is the evolution that we recognize and this is evolution that would require Dahlgren to assume a good part.</p>
<p>Lyddane</p>	<p>Either this or we lose out battle for existence.</p> <p>And in some cases it wasn't easy to get our own people to recognize that this was the case that required them to do some painful things, like take on more responsibility. Most of them I must say, reacted to this with admirable enthusiasm</p>





Brooks	I've asked you the question as to whether or not you were our first technical director and you mention that it was Dr. Bramble.
Lyddane	<p>I rather certain that I'm right in that Dr. Bamble was the first person to bear the title of Technical Director. Mr. Riffle was the second and I was the third.</p> <p>Bramble of course, most of his period here was director of K Laboratory, and he deserves a great deal of credit for building that up, along with the very competent, highly competent, top, staff that we had there. We had a real asset in Ralph Niemann, Arthur Jones, Charles Cohen, and Gene Gleissner, and all of them are here except Gene and of course Bramble.</p> <p>As far as I'm concerned, it was just good fortune that we had these people on hand, and I think what kept them here was the challenge of what they were doing, it was challenging work.</p>
Brooks	Looking on what we've touched on, do you think that professional conditions that exist now for talent, professional talent coming directly out of school with a Bachelor' s coming into the organization as near vice or lower long ---. Do you view these individuals as being subject to the same motivations as others who have achieved department rank.
Lyddane	I don't know. If you are in the early stages of creation of something, I suppose it's difficult to replace the excitement or the sense of being in on something that is important, interesting, challenging, full of the sense of battles, and so forth, it's got to be a different kind of motivation, than people who come into a relatively mature successful organization. Speaking from my own personal experience, when I left here, I went to a organization that was relatively mature and quite successful, namely the General Electric Company, I spent most of my time there fighting General Electric Company to do things that it wasn't doing because they were becoming new. I suppose it isn't as bad as it looks. I suppose you could always find a challenge of some kind and if you don't like that kind of challenge, and don't want to respond to it, you can always get out of it and go into some other kind of work, take up the Saturday night bowling league as a substitute.
Brooks	Pursuing that point, a program of note at Dahlgren academically has been the rotation program. I guess you are familiar with this. They are taking junior professionals and newly hired employees and going up through the executive spiral and to department heads and others and rotating them to various work areas within their discipline so they can develop some within the organization.
Lyddane	I touched on this when I talked about management. I think that rotating people, young people, incoming people, within the confines of their own discipline, but through different places of the organization is a very valuable concept. You often find that if you hire a guy and put him in one place, he just can't stand





	<p>that place, for some ridiculous reason, for some reason he can't stand the work there, he would be perfectly happy if you'd move him. You don't know it, he doesn't know and he'd be perfectly happy if you would move him to the department down the hall so by all means this is an old well established trick for junior professional. Give them a chance to get a round and find out what is in your organization that they would like to do or there is nothing that they would like to do and then let them settle down and make substantial professional contribution. As far as doing this for senior executives, I think it's a lot of nonsense. It's the theory that if you can manage a pickle factory, you can manage anything.</p>
Brooks	<p>Concerned now for the young professional, manifest programs to develop the desire for management functions seems to be a part of some of the on-going philosophy at Dahlgren. This is resulting with individuals within my experience who are taking a negative attitude on this. The unprofessionals are saying that we are bench workers or we are individuals interested in our discipline and feel no desire to delve into management functions, but they seem somewhat fearful that not accepting management responsibilities would hinder their careers somewhat as far as promotions are concerned.</p>
Lyddane	<p>I can't say what the courses are. It depends upon what the philosophy of management is. Management believes that only those people who an x number of courses are fit to be managers. Everybody is going to take an x number of management courses who want a promotion. Now what this proves, I don't know. All that I can tell you is that when I was putting pressure on things, it was in the opposite direction. I felt it was much too easy for my junior professional to consider that they knew all they needed to know about electrical engineering and to start taking management courses. As a matter of fact, what they didn't know about electrical engineering was very very important, and very very necessary for getting the job done. I didn't care if they knew how to design a reporting form for higher management. If they didn't know how to analyze a circuit. I was never sufficiently convinced that designing a report form or exercising most of the management functions was that challenging a responsibility on the level that this was taught. Granted that you could get into very profound in your management more a less a question of perceptive, of philosophy, of discovering what is going to work in the long run, or what is going to produce the result that you think desirable and right, and what isn't. It's not a question of techniques. Techniques are childish. They keep getting changed.</p>
Brooks	<p>Speaking of a subject we touched on concerning NOL, there seems to be some form of historical activity, at least, regarding NOL and Dahlgren. NOL expressed desire to assimilate.</p>
Lyddane	<p>They were the big boys, and we were the little boys, and they were always leaned on us, we have the superior scientific competence, look at how many</p>





	Ph.D. we have, we have a beautiful building up in White Oak, you're a bunch of ram-shackled buildings down in the sticks with carrier pigeons. Yes, we'd like to work with you, but you must recognize the terms on which we would have to embark on such a confirmation. It was natural, and I couldn't expect anything else, but it wasn't very pleasant to be on the receiving end.
Brooks	What happened? When did Dahlgren prevailed, and it seem to have prevailed as far as not being assimilated.
Lyddane	<p>I think the reason that Dahlgren prevailed, was that Dahlgren weather, a very serious transaction. It turned itself around from a declining station dedicated to the <i>Modus operandi</i> from the old days of World War II and before and carved itself a niche in the world of today, in the process gave the impression of being alive, viable, expanding, fun- going organization, capable of getting things done, whereas NOL has more or less stopped where it was 20 years ago. I don't know of any real development in the sense of development of the organization, its goals or it <i>Modus operandi</i> or anything else and if your want my candid opinion, one of the things that was wrong with NOL was its technical director. Greg Hartmann was a competent scientists in his young days, back in World War II, but after he became technical director I had the feeling that he was sour, stale and more concerned with asserting his own and his laboratories prerogative than he was in accomplishing anything else.</p> <p>Without doing anything else that would convince somebody else. As objective evidence of what he had to say, suppose to take in effect on his say so. I'm afraid this attitude got a little bit pervasive at NOL and also NOL got stuck with the idea that research was noble and development was demeaning, which an organization can very easily do. This is a fundamental dichotomy which means research and development in regards to techniques, goals who are suited to and are happy to do each kind of work.</p>
Brooks	NRL seems to be highly viewed with the purity of research
Lyddane	Now my philosophy on that is that I don't think government laboratories are the places to do fundamental research. The universities do research better than any government laboratory can and if the government needs to support research, it should support it in the universities. The distinction the government laboratories need a certain modicum of research, I won't argue with that, 15 percent, 20 percent, 25 percent if you like, but a certain amount of research is necessary to keep the organization healthy and in fact a balance across the spectrum of professional activities is necessary. You need research, you need development, you need test and evaluation. If you don't get your nose close enough to the dirty details of actual hardware, you could get in trouble. If you don't have the people around who are concerned with advancing the state-of-the art on the other end of the spectrum, you lose the stimulation that they give and it's a very subtle kind of stimulation, this standing up and giving lectures is





	<p>simple day-by-day contact with the cross fertilization that goes on of talking to somebody or just knowing that somebody is there doing this kind of work and if you're interested in it, you can talk to him about it. He loved nothing better than to tell you all about it. If you need that kind of intellectual stimulation, you can get it. There's somebody there that's doing it. You may not want to do it yourself, but it's nice to know that there are real honest scientists next door.</p> <p>As a matter of fact, if I get in trouble, I'll go talk to him a little bit, he'll kick the subject around and he'll suggest something to me and 50 percent of the time it won't work, 20 percent of the time it's a good idea. This kind of balance and interactions between disciplines and interactions between different positions within a discipline is very important for the proper function of any laboratory, and I have the feeling that NOL got somewhat one-sided. It's very easy to regard research as being the highest form of activity because it's pure. Obviously in large intellectual demands. There are people who have quite good minds who are very happy, there are people whom if you put on a research project, would research it well and spend their lifetime focusing down to a finer and finer point to find work. I'm not underrating them at all. Then, there are other people who would go mad if you subjected them to this kind of procedure. They want four or five things to do at once. Those people are just as valuable and just as bright as the other kind. You need them both. You can't get along without either and there's no use putting one up on a pedestal and denigrating the other one completely.</p>
Brooks	<p>In terms of some nation, looking at a ten-year period, you've been absent from Dahlgren and you left Dahlgren with I think a definite physical impact and philosophical outlook. How have things changed for the better or for the worse in your estimation?</p>
Lyddane	<p>Again, I think it's impossible for me to answer that. I'll have to answer on the basis of really casual impressions. Some of the people who were here then are here now. When I talked to them, I find them relatively unchanged. They don't seem to be sour or pissed off at the organization, or anything undesirable like that.</p> <p>I'm sure that there have been a few who were. I'm sure that some of them retired, but I find it extremely difficult to say if they were people who were disappointed inevitably, or people who got a bad deal. I refuse to criticize management, because I don't know how to. I've criticized a couple of things I didn't like, quite freely, and I wouldn't hesitate to criticize if I had anything worth saying, but I don't.</p>
Brooks	<p>Do you thing that Dahlgren's emphasis on the guided projectile as perhaps a main theme endeavors is a wise concept?</p>
Lyddane	<p>I don't have a good technical calibration on the status or prospects for the</p>





	<p>development assuming, that it's satisfactory, yes, I think it's an excellent idea. I think it's pushing in a highly desirable direction of cheap weapons. The worst thing that could happen to this country would be to price itself out of the weapon market, and we have awful tendency to do that as a country. If we build nothing but Rolls Royces and we can only afford to building two, because we build them by hand, philosophically, I feel quite warmly to it, I don't know any of the technical details, I'm 10 years out of date, as I told you I'm prejudice in favor of it.</p>
Brooks	<p>Thank you very much.</p>
Conclusion	<p>Thank you for listening to this week's Dahlgren Centennial Podcast, and hopefully you have learned another interesting aspect of what our people accomplish for the Navy and for our nation.</p> <p>We will continue sharing how Dahlgren is a one-of-a-kind location where innovation is heralded as the hallmark of each individual.</p> <p><u>PAUSE</u></p> <p>Tune in next week to hear from Dr. Robert Gates who significant work at Dahlgren spanned from 1970 to 2007. His podcast will focus on his contributions to Submarine Launched Ballistic Missile Program and the work environment at Dahlgren in the 1990s.</p> <p>Thank you for celebrating this century of innovation with us at Dahlgren.</p> <p><u>MUSIC</u></p>

