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Dedication of the Tordella Building, NSA's Supercomputer Complex October 29, 1996

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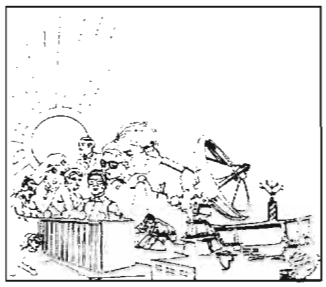

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Publisher's Note:

Louis W. Tordella and the Making of NSA

by William Nolte

One of the dangers of retrospection, of history itself, is the tendency to see that which has happened as having inevitably happened. Every teacher of history can point to the folly leading to the American Civil War or the First World War simply because we know the events occurred. From the perspective of 1996 (or 1941), Lord Keynes's prediction that the Treaty of Versailles would be but an armistice of twenty years looks incredibly prescient. From the perspective of 1920, it may have appeared merely cranky.

So it is with institutions. First-time visitors to the National Security Agency must be struck above all by the sheer mass of the place. Even the eclectic (to put it gently) architectural style speaks to an institution of some permanence, permanent enough at least to have passed through several generations of general service esthetic fashion.

But it might not have been. The success of NSA, in operational and bureaucratic dimensions, obscures two important realities. The first is the relative novelty of a permanent, peacetime American cryptologic establishment of any real size. Only the Second World War and the subsequent determination on the part of presidents, the Congress, and the American people to remain on a virtual war footing to engage the Soviet Union led to a break in the tradition of nearly two centuries in which mobilization—of intelligence and military capacity—was followed at the coming of peace by an even more rapid demobilization.

In fact, of course, the United States did not break with that tradition in 1945. It did so in 1947 and beyond, when President Truman reversed his and the country's course back to "economy and efficiency." NSA, like the Central Intelligence Agency, is a product of that remobilization.

Which brings us to the second reality: nowhere was it predetermined that a national, as opposed to departmental, cryptologic establishment would be part of the architecture of post-World War II American intelligence. In fact, the first steps in the creation of a national structure were less than fully successful. The British historian Christopher Andrew has observed that the United States suffered strategic surprise in 1941 with two cryptologic agencies; in 1950 (with the invasion of Korea) it took four agencies (Army, Navy, Air Force, and the Armed Forces Security Agency) to achieve the same effect.

Seen from the vantage point of retrospective inevitability, the creation of NSA in 1952 appears to be the tidy completion of the process of nationalization. The Truman administration got it wrong with AFSA, got it right with NSA, and the rest is history.

In that context, Louis Tordella is noteworthy merely because of the length of his tenure as NSA's Deputy Director. His service could be reduced to something of a trivia question for new employees, akin to the bits of arcane service lore committed to memory by Annapo-

lis plebes and their counterparts at the other academies.

But that retrospective inevitably is illusory. NSA might easily have suffered the fate of AFSA. It might have been replaced by yet another attempt at cryptologic consolidations, or it might have performed its missions ineffectively over the next decades. If we believe what we claim about the importance of our missions, the cost of such failure would have been measured in lost American interest, lost American treasure, and lost American lives.

The argument here is that the success of NSA was not foreordained. It was the result of that combination of leadership, resources, and good fortune that underlies so much of human achievement. Success was also the product of skill, a shorthand term for the aggregation of intelligence, imagination, integrity, and patriotism of the generation of American cryptologists of which Dr. Tordella was the acknowledged leader. In no sense, was this his success alone. He was the witting inheritor of the policies and visions of predecessors, including NSA's first director, LTG Ralph Canine. To a great degree, Tordella's success brought to fruition the work of RADM Joseph Wenger, one of the truly great (and greatly ignored) figures in the history of American cryptology.

n retrospect, the Wenger-Tordella vision seems to have rested on principles so evident as to have seemed inevitable in their adoption. There is that word again. This vision centered on three fundamentals, the first of which was the need for national effort, while balancing the interests of the various services and departments of the government. The second principle was that of consolidation within the national effort. From the perspective of several decades, it may seem ridiculous to think that a cryptologic effort would require the placement of stations representing each of the uniformed services to intercept the communications of the counterpart target services. And even that did not address the needs of civilian agencies and departments. So you think, dear reader, that sounds faintly ridiculous? Yet the reality is that it happened, and the transition to a consolidated structure and consolidated operations took years of often intense struggle.

Finally, Dr. Tordella understood that the modern cryptologic establishment was not simply a larger version of the black chambers of earlier times. Code making and code breaking remained; they were not, however, the total reality of modern cryptology. Understanding the signals that carried cryptograms and the electronic computing technology that generated, stored, or routed them were parts of the process.

As was the true miracle of Twentieth Century cryptology, traffic analysis. The very idea that cryptologists, even when unable to produce plain text (the Holy Grail of the black chambers) could provide valuable, even lifesaving information to consumers, revolutionized the field. As an esoteric skill, and in limited applications, cryptology can exist apart from the environment of electronic communications and information management. Secret ink, anyone? But secret ink would not support the construction of the mass on the Baltimore-Washington Parkway. Modern cryptology is a multiphase, multidisciplined process, with the final victory achieved not at plain text, but at the delivery of information needed by a consumer in a format the customer can handle, in time for the customer to act. The central fact of American cryptology in the twentieth century remains that Pearl Harbor was a cryptanalytic success (the Japanese ultimatum being decrypted before the attack) and a cryptologic failure (in that the warning was not forwarded at appropriate speed).

It has been noted that Dr. Tordella, in addition to being the heir to so much of the achievement of Canine and Wenger, was also the leader of an extraordinary generation of American cryptologists. The preparation of this special issue of *CRYPTOLOG*, like so many of the other tributes to Dr. Tordella, attests to that. His colleagues have supported this effort with the same loyalty, affection, and respect that filled the chapel at Fort Myer for his funeral Mass.

Like Louis Tordella, his colleagues came to the cryptologic service from other fields, expecting, one suspects, to return to those pursuits after the war. Many of the cryptologic personnel of the Second World War did precisely that, rising in many cases to positions of eminence in business, in academic life, or even on the Supreme Court.

A few, including Tordella, stayed on, or resumed service after a short break outside government. Why did they stay? Certainly not because of the promise of fame or fortune. Certainly not because they foresaw an opportunity to get in at the ground floor of a large public enterprise.

Some say, even now, that "the business gets in your blood." All right, up to a point. Who doesn't like puzzles and mysteries? And which of us would not admit, if pressed, to some satisfaction at participating in an adult version of the child's "I know something you don't know."

We ritualistically dismiss the public perception of intelligence associated with the glamor described by Ian Fleming or even the analyst/case officer/covert action officer/policy maker of Tom Clancy (does Jack Ryan also run the motor pool?). But there is a mystique to it all, even amid the day-to-day bureaucracy.

"It gets in your blood" may be a partial answer. But it doesn't tell the whole story. A historian once noted that the Roman Church turned to deal with the wounds of the Reformation and the internal ills that produced it through the handful of adherents to the new Society of Jesus, "for their learning, loyalty, discretion, resourcefulness, and eloquence." Dr. Tordella was a product of the Jesuit tradition and embodied its virtues, chief of which was the determination to confront evil through the development of the intellect.

Over and over, Dr. Tordella's colleagues describe him through characterizations remarkably similar to that description of the early Jesuits: a commitment to education, his own and others; moral authority; integrity; loyalty.

And patriotism. This issue is a tribute to Dr. Tordella. But it cannot fail to be as well a tribute to the generation he led. Cryptology as an intellectual diversion may indeed get in the blood, but one suspects the other motive for remaining in the service for all of these men and women was something even closer to the heart. We, their professional descendents and fellow citizens, owe them every thanks.

Eulogy for Dr. Louis W. Tordella

by Walter Pforzheimer

As I look upon this gathering representing the family, friends and colleagues of Louis Tordella—among them great scholars and workers in the field of cryptology to which he devoted so much of his life—I know that the brief remarks I am privileged to make here should not encompass the technical fields to which Lou devoted a life of service to his country, and which so many of you know so much better than I.

But how to remember Lou Tordella in his professional career? A few days ago, I talked with my good British friend, Professor R.V. Jones, sometimes called the "father of scientific intelligence" for his work in World War II, and he recalled Lou's "sense of fair play" and again "his fairness and the balance of his comments." This was why, in part, the British awarded Lou's work and cooperation with the rare (for an American) title of Honorary Knight Commander of the Most Excellent Order of the British Empire. One might also remember that, in 1974, Louis was the seventeenth awardee of the President's National Security Medal—the fourth cryptologist to be so honored. How interesting to reflect that this very day, today, marks the fiftieth anniversary of the appointment of the first Director of Central Intelligence, a concept to which Louis gave so much of his professional NSA cooperation to make our Intelligence Community into a workable, national concept.

But remember that Louis was not all work and no relaxation. Remember his love of family, with the wondrous Barbara and his children at his side. Remember his great love of music—opera in particular. He would sit by the hour listening to opera broadcasts, or attending nearby performances of both opera and symphony. Remember one of his proudest boasts (and he was not a boastful man), as he told of how, when he was a student, he managed to work himself into a walk-on part as a spear carrier in an opera—I think it was "Aida."

Let me now say what is known to all of us—Louis' tremendous capacity for quiet friendship. His arms reached out to embrace so many of us. So did his thoughts. As Alexander Pope wrote in the eighteenth century, "Thou wert my guide, philosopher and friend." So it was with Louis. For me, it has been more than a quarter of a century; for some of you, even longer. It was a warmth of friendship which will be with us always.

Finally, let me say, in what little Latin I can muster: Ave atque vale: Hail and farewell, dear friend.

Walter Pforzheimer's involvement with the OSS in World War II has been described in Robin W. Winks' book "Cloak and Gown." This eulogy was delivered at the memorial service for Dr. Tordella on 23 January 1996.

Dr. Louis W. Tordella, 1911-1996

by Thomas R. Johnson

Dr. Louis W. Tordella, a former top official of the National Security Agency, died of cancer on 10 January 1996 at the age of 84. Dr. Tordella was a pioneer in the science of cryptology and rose to the position of deputy director of NSA, a position he held for sixteen years, longer than any other official at NSA.

Dr. Tordella was born in Garrett, Indiana, in 1911 and grew up in the Chicago environs. He displayed an early affinity for mathematics and obtained B.S., A.M., and Ph.D. degrees in the 1930s. The outbreak of World War II found him teaching mathematics at Chicago's Loyola University.

He volunteered for the Army, but the recruiter told him that the Army would draft whomever they needed. So Tordella made contacts in the Navy, and he was brought aboard as lieutenant junior grade in 1942. He went directly into cryptologic work for the Navy's codebreaking organization, OP-20-G, where he worked on the German Enigma cipher machine. He was one of a team of brilliant mathematicians who designed the "bombe," a wartime machine used to decipher the keys on the Enigma. He finished the war at OP-20-G collection stations on the West Coast, at Bainbridge Island, Washington, and Skaggs Island, California.

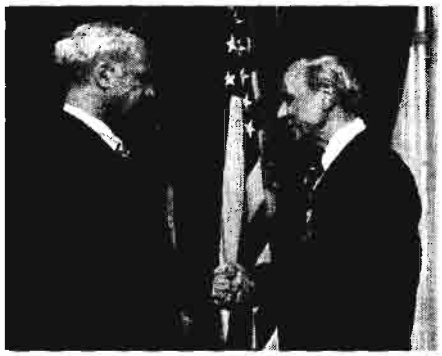
After the war, Tordella stayed on with the Navy, and in 1949 he joined the newly created Armed Forces Security Agency (AFSA), an early attempt to achieve service unity in the business of cryptology. He was a key figure in devising policy for the new agency and for its successor, the National Security Agency which emerged in 1952 to replace AFSA. Although a Navy man, Tordella readily grasped the advantages of unification, and he pushed the concept forcefully in the early years.

Tordella's career at NSA brought him to the very front rank of cryptologists. On the technical side, he was an early advocate of the use of computers for cryptologic work, and he helped to cement a close working relationship with a new computer firm, Electronic Research Associates, which eventually became CDC. His grasp of computer technology and the associated engineering concepts, coupled with his understanding of cryptanalysis, was invaluable in keeping the United States ahead of the field in this critical skill. Tordella was also a leader in securing American communications, pushing a series of leading-edge new encoding devices to secure U.S. government communications.

During the Eisenhower administration, when the central concern of the government was the growing Soviet nuclear capability, Tordella led the NSA response. He was the driving force behind NSA's response to the threat, and he directed the technical activities of the Agency at a time when President Eisenhower had little else to rely on except signals intelligence. In 1958 Tordella persuaded Eisenhower to fund a new communications initiative, called CRITICOMM, which offered a means to get critical intelligence information to the White House within ten minutes. The new system revolutionized concepts in Ameri-

can intelligence, bringing with it methodology that is still in use everywhere within the defense and intelligence communities.

As a senior official at NSA, Dr. Tordella played a central role in NSA's outside relationships. Close collaborators in Great Britain and the British Commonwealth built up such a trust with Tordella that many foreign intelligence officials regarded him at the linchpin of their relationship with NSA. He traveled throughout the world building up that trust, and it paid great dividends over many years. He also served as the principal contact between NSA and its American collaborators: CIA, DIA, and the Office of the Secretary of Defense.



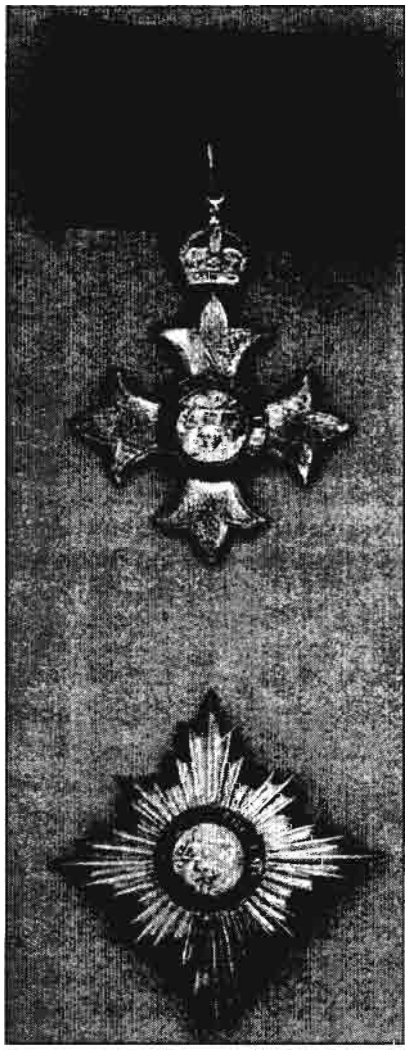
Secretary Schlesinger presents Dr. Tordella with the Baker Medal

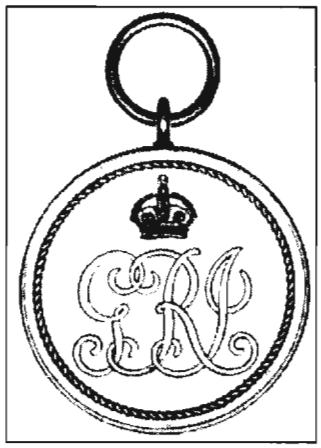
In July of 1958, while he was serving in a liaison post to the secretary of defense, Tordella was asked by then-Director Lt. Gen. John A. Samford to become his deputy. Tordella took office on 1 August 1958, and he continued as the deputy to six successive directors until his retirement on 21 April 1974. He thus became the longest-serving high intelligence official since World War II. Within NSA, he became an institution, and to many he ***was*** NSA. There was no precedent for his tenure, nor has it since been equaled.

Dr. Tordella received unprecedented honors over the years. On his retirement in 1974, the secretary of defense, James R. Schlesinger, presented him the National Security Medal. That same month he received the National Intelligence Distinguished Service Medal from the Director of Central Intelligence, William Colby. His relationship with the British was officially recognized in 1976 when he become an Honorary Knight Commander of the Most Excellent Order of the British Empire. After his retirement, he remained active in the intelligence community, serving on a number of boards and committees and as a consultant to various corporations that held national defense contracts. In 1992 the Security Affairs Support Association, composed mainly of retired intelligence officials, gave him the William O. Baker Medal for distinguished service to American intelligence.

CRYPTOLOG thanks Mr. Johnson and the Center for Cryptologic History for permission to use the official NSA biography, which is engraved on a bronze plaque in the National Cryptologic Museum, and for the many photos of Dr. Tordella that appear in this issue.


AND THE EMPIRE





Dr. Louis W. Tordella, Honorary Knight Commander of the Most Excellent Order of the British Empire

Presented by Sir Peter Ramsbotham, Her Majesty's Ambassador to the U.S. Washington, DC, February 1976

Ladies and Gentlemen,

It is a very great pleasure to welcome Dr. and Mrs. Tordella and their family, and all our friends and guests, to this ceremony this afternoon.

We have all grown so accustomed to the closeness of the relationship between our two countries, that those of use who live and work in the United States have come to take it for granted. One reason why I welcome the tumultuous and expansive way in which you in America have begun to celebrate the 200th anniversary of your birth as a nation is that, for all the enthusiasm with which we are sharing in your festivities, it does remind us British that circumstances are capable of provoking some very nasty misunderstandings. It is somewhat paradoxical for an ambassador, in speaking to audiences around the country to which he is accredited, to remind them of the differences which drove their ancestors to war. But I do it, because it brings home to us now that the excellent relations we enjoy today are not the result of some divine ordinance.

They have come about more than anything else through the close ties that exist between so many of the separate departments of our countries' activities, both official and unofficial. There is, in peacetime, no natural identity in our national interests, even though there may be compatibility. But there is a continuing opportunity to contribute to each other's enterprises which makes our joint activities more than doubly rewarding and exciting.

It is particularly in this period since World War II that our co-operation has been profitable, the period spanned by the career of the man whom we are assembled to honour today. For his services, Dr. Louis Tordella has already been awarded several of his country's highest distinctions. But his devotion to his own country has been matched by an outstanding contribution to our common cause. The distinction which Her Majesty The Queen has now been pleased to confer upon him is only rarely awarded to a United States citizen. It is, indeed, one of the most senior ranks of the Most Excellent Order of the British Empire and is, in a sense, Her Majesty's gift. Dr. Tordella will be joining the honoured company of those whom the British Sovereign has rewarded over the centuries for services which go far beyond the call of normal duty. The distinction is richly deserved by one whose collaboration with the United Kingdom in the field of national security is a most significant example of the partnership which we value so highly. I am sure that for you all, as well as for my wife and myself and members of my staff, this is an occasion that we will long remember.

And so it is with the greatest pleasure that I shall now read the formal authorisation for me to make this award on behalf of Her Majesty The Queen:

"By command of Her Majesty Queen Elizabeth II, by virtue of the authority vested in me as Her Britannic Majesty's Ambassador and Plenipotentiary at Washington in the United States of America, it is my honour and privilege to present to Louis William Tordella the insignia which Her Majesty The Queen has been graciously pleased to bestow—that of membership of the Most Excellent Order of the British Empire in the rank of Honorary Knight Commander, in recognition of outstanding services."

Louis William Tordella, I request that you now come forward to accept the insignia of the Order.

February 19, 1976

CRYPTOLOG thanks [redacted] *and the UK Liaison Office for providing the text of the ambassador's remarks and photograph of the medal.*

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"Louis Tordella Led by Example"

by [redacted]

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On January 23, 1996, I stood in the chill winds among patches of snow in Arlington National Cemetery. I heard the words of the funeral service, saw the American flag folded and presented to Barbara and family. Then came the rifle salute and the lump-in-the-throat sound of "Taps." My closest longtime friend, travel companion, and co-worker had come to his final mortal resting place. Walking to our car, my wife Jeanne and I talked about the great good fortune which brought the Tordella and [redacted] families together. For my part, I again realized how proud and pleased I am to have spent most of my active career life working with "Dr. T" and the rest of the World War II cryptologic crew.

That crew participated in the unification of Army and Navy organizations under the Armed Forces Security Agency (AFSA). Later we all gave fervent thanks when AFSA was replaced by the National Security Agency—a national-level agency.

Louis and I became close friends when we participated in the first London Conference in 1948. Rules and agreements were established for cooperation similar to the wartime UK-USA arrangements which had produced amazing successes on difficult challenges. After our return, we began our career-long cooperation (some called it collusion) by jointly scraping together a total of slightly over $400,000 —from diverse Navy and Army kittys! Then we organized and used the money for a "do-it-yourself" NSG-ASA fabrication project to build radio teletype intercept equipment to cover foreign non-morse communications. The production line was in the basement of the cafeteria at Arlington Hall Station. The equipment worked, and we stayed under budget.

With the unification of the ASA-NSG organizations, the military and civilian components all entered the "Agency Invention" period of AFSA, then NSA. This was a time of travelling, planning and much bureaucratic shadow-boxing (to establish NSA missions and assist Service Cryptologic Agency budgeting, personnel, and operational mission requirements definition and justification).

From 1952 until 1968, I travelled to much of the world with "Dr. T," visiting and evaluating facilities, identifying problems (often with NSA) and participating in base-rights and cooperative international arrangements. With the Director, we also made numerous command appearances before DoD and congressional review and approval authorities to sell (or save) program and budget proposals.

In later years (in fact, in October 1995, while Jeanne and I were staying with the Tordellas for the October Cryptologic Symposium), Louis and I talked about our choice of a career in NSA. We concluded this October that our career decisions were based on (1) the interest, satisfaction and lack of sameness of

[redacted] *is a former NSA senior official.*

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cryptology and, (2) personal convictions that the miracles of wartime contributions to Allied success should be maintained as an asset to our nation. The motivation for selecting NSG or ASA was certainly not to join an established operation with existing and clear missions and objectives and a positive career outlook for the future. On the contrary, the stringent security of ULTRA had limited its distribution to a few selected need-to-know military and civilian users. This preserved the anonymity (but also limited the appreciation) of the source. Post-war demobilization further shrank the ranks of knowledgeable, experienced users to a mere handful.

With the defeat of Axis military forces, the highly competent cadre of wartime cryptologists faced a unique dilemma. They felt committed to preserving what they knew to be an essential national security function, however, they were faced with:

- drastic reductions in military expenditures
- no major or high national priority targets
- limited U.S. government customers
- questionable requirements for whatever they might be able to produce.

The stringent security of ULTRA had limited its distribution to a few selected need-to-know military and civilian users. This preserved the anonymity (but also limited the appreciation) of the source.

Yet this problematic venture attracted Louis Tordella, who could have opted for university-level teaching or other stable occupations.

His choice of career is an indication of his dedication. It is difficult today to comprehend the hand-to-mouth existence of the early years of AFSA/NSA. Fortunately, the endeavor had gained a number of sponsors in high government offices through VENONA successes. Later successes justified funding of expanding NSA and also solidified specific missions and functions for the Agency.

One of the greatest problems of the first decade of agency operations was bringing together individualized capabilities and divergent outlooks of very independent, and highly skilled technocrats. Leadership for harnessing and concentrating the exceptional capabilities of these rugged individualists was provided by Dr. Louis W. Tordella. He was accepted and therefore followed because of his brilliant crypto-scholarship, his practical knowledge, and his fair professional judgment. NSA workers and members of the associated Intelligence Community became aware of and admired his combination of technical talent and high moral and ethical standards. It is truthfully said that Dr. T never compromised his beliefs or objectives, and never claimed or derogated success achieved by others.

He led by example and by offering inspiring rationale for focusing limited assets and mindpower on urgent requirements. His leadership was key to NSA responsiveness and contributions when urgently needed by our nation's planners and leaders.

With the passing of years and time to think about past and current events, I have come to realize that the greatest accomplishment of Louis Tordella and his compatriots (and successor cryptologists) may not be easy to define—but is in fact the impact the NSA creation has made in our world and in particular in our nation. Contributions to successes in

the Intelligence Community, assistance to national leaders, and support for military and diplomatic initiatives have all caused varying degrees of change for U.S. citizens, most of whom probably are not even aware of the National Security Agency. Working in defense industries, I see many programs implementing cryptologic functions which continue to drive home the fact we are all part of history and all of us share in results of past events.

It is truly said that Dr. T never compromised his beliefs or objectives, and never claimed or derogated success achieved by others.

If the real value of a life and its ultimate worth is in part the difference it makes in our world, then Louis Tordella certainly made important differences. All of us who worked with him share a feeling of pride and wonder at having been part of an historic national cryptologic program.

(U) This is my appreciation of an exemplary life and my salute to a true friend: Dr. Louis W. Tordella.

CRYPTOLOG's Former Board Chairman Remembers His First Meeting With Dr. Tordella:

I was truly saddened when I learned of Dr. Tordella's passing, recalling the first time we met. I had entered on duty full-time in June 1966 and automatically entered a six-week orientation program at the old hospital site. The weather was hot and sticky, compounded by the fact that the only air conditioning was a big fan trying quite unsuccessfully to ease the internal smog. Despite the prospects of a long, hot afternoon, an announcement came by phone that the deputy director was coming by to visit with us.

Having spent two prior summers as a summer hire, I was familiar with who the deputy director was: one of the founding fathers, ranking with Friedman and several others who had broken the German and Japanese codes leading to victory in WWII. You cannot imagine my excitement and yet at the same time disbelief that such an important personage would visit our lowly EOD class. Especially that he would do so in such oppressive heat and humidity and then to stay even longer to have lunch with us.

I don't remember what he said, only that he did come by to visit and that he spent a few minutes during lunch talking to each one of us. What I remember most of all is the thought I had then and have never forgotten: saying to myself, so this is what being a great leader is all about.

[redacted] *retired after spent many years with NSA, most recently as the DO Senior Training Authority and Chairman of the Technical Health Advisory Board; he also chaired CRYPTOLOG's editorial board.*

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Louis Tordella: As Colleagues Remember Him

In March 1996, several of Louis Tordella's colleagues assembled in the NSA Broadcast Center for a retrospective on his career. The participants for this session were: Ann Z. Caracristi, former Deputy Director of NSA, Maj Gen John Morrison, USAF (ret.), Mr. Arthur Levenson, [redacted] and CAPT James Pendergrass, USN (ret). An edited transcript of their conversation follows.

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(L-R) **CAPT Pendergrass, Maj Gen Morrison, Dr. Nolte, Ms. Caracristi, Mr. Levenson, and [redacted] reminisce about working with Louis Tordella**

CRYPTOLOG: *Each of you knew Dr. Tordella for several decades. Captain Pendergrass, you seem to have the honors within this group for the earliest association with Dr. Tordella.*

Pendergrass: After the war, the Naval Security Group was in chaos, as was everything else in the services. I found myself just back from Bletchley and found myself on a newly created staff, one of the other members of which was Dr. Tordella. This was early in 1946, January or February, and from that point I got to know him quite well.

Was he still on active duty?

Pendergrass: No. He had converted by that time.

Morrison: I met Lou in 1947 at Nebraska Avenue [Naval Security Group Headquarters]. I forget what the occasion was, but we were still busy trying to strap ourselves together. Something was in the wind about reconstructing the business we had been in. We knew that something had to be done about the future of the business, and this meeting was one of those occasions. Later, in 1948, I had the opportunity to travel overseas with him, and the relationship continued from there.

[redacted] This period that John's talking about was a very important time in the postwar development of the cryptologic business. The

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Navy and the Army were coming together, and there were many problems associated with integrating their wartime efforts. At times, it seemed like it was not going to get done, but the AFSA came into being. That did not put to rest all the frictions and suspicions that existed, and this is how I came to know Dr. Tordella. He was recognized, even in those early days, as the kind of person who could serve well as a peacemaker. That may not be the right word, but he had the capacity to develop balanced positions that would lead both sides to trust him and talk to him. This is the area in which I've always thought Dr. Tordella made his greatest contribution: keeping us together in the days when we were very weak and very vulnerable, and we could have been attacked from any direction. Tordella had foresight and vision and held us together in that period. I was already developing a great loyalty to him, and it stayed that way throughout my career.

Most of the audience for this discussion will have no first-hand experience with how tenuous arrangements were during this period. Any other thoughts on Dr. Tordella's role in that time? Was there a danger this consolidation would fail?

Caracristi: I think there was. As in any consolidation of two bureaucracies or two companies, everyone gets very defensive about his own role. Will you be able to play as powerful or important a role in the new organization as you did in the old one? So there was a lot of tension in this period, but I think people who came out of the wartime experience still had a tremendous commitment to what we were all about. We were more interested in accomplishing the mission than in fighting bureaucratic battles, though there certainly was some of that going on.

Morrison: To use the current expression, we had "different cultures."

Levenson: At the working levels, it may not have been that bad, but at the higher levels it got worse. In the Army, we had the feeling that the only way we could find out what the Navy was doing was to go through the British.

So the communication path from Arlington Hall to Nebraska Avenue ran through Bletchley Park.

Levenson: It was really ridiculous. So consolidation was always looked upon as a distinctly frail effort.

Morrison: Younger people here who are interested in the pulling and tugging associated with those days ought to take a look at some of the material on that period, just to see what life in that period was like. It was tough going. You were never sure we were going to end up with a coherent assembly of people who would be mission-centered and with the capability to serve the national interest. Service rivalries were tough, and once the Air Force became separate in 1948, you had another player to contend with. I was very active on that side, pulling and tugging in the direction of the Air Force, while the Army and Navy were pulling in their own directions.

Levenson: Another of the tough issues of the period involved our relations with GCHQ. We had the cooperation during the war, the result of a high-level agreement between Roosevelt and Churchill. Historically, even between the friendliest of countries, people never exchanged cryptologic sources and methods and results. The fact of this cooperation, with the assignment of Americans to GCHQ, was a breakthrough. But with the war over, the question was "Where do we go from here? Do we continue with this cooperation or is it too sensitive?" Lou Tordella played a very important role in this area, as one of the people who established the postwar cooperation.

We're having this conversation within a week of the 50th Anniversary of that agreement. Was there opposition to continuing this extraordinary cooperation?

[redacted] Of course. There was opposition from other intelligence elements who felt that the cooperation in Signals Intelligence was too close, and other people were feeling left out. Some of this may have been that there were no formal guidelines for the cooperation until the BRUSA agreement, which Lou not only played a role in devising but on which he spent the next several years working on implementation.

Morrison: Lou was recognized early on in this relationship as a leader, as a man of substance. Even as early as the BRUSA Conference of 1948, he was recognized as the leader of the American delegation. Louis stood out; he always stood out.

Was that a consensus view?

Levenson: I can remember a briefing he gave early on. It was so remarkable, in its decisiveness and its clarity, I told him afterward he was going to be the first civilian director of NSA. He didn't quite make that, but then no one else has either.

One of the names associated with Dr. Tordella's early career is that of Admiral Joseph Wenger. Would it be fair to describe Dr. Tordella as a Wenger protege?

Pendergrass: To a certain extent. Lou had worked for then-Captain Wenger, who had a real appreciation for what Lou could do.

In late 1952, AFSA was replaced by the National Security Agency. Where was Dr. Tordella in the process?

[redacted] Lou had run what was called the Collection Division in AFSA, running in effect the intercept resources. This was a natural for him, having come in to AFSA from having been a station commander in the Navy. Then, when General Canine came in 1951, Lou moved to what was called AFSA 12, Plans and Policy. That unit had assembled several of the "bright young stars" of the agency, and it's my recollection that Lou went from there to the National War College in 1953-1954. When he left the War College, he spent a year or so at the Pentagon working for General Graves B. Erskine, who was a great friend of General Canine, NSA's Director. He then became head of something called NSA 70; it had been AFSA 70, but we kept the same numbers and just changed the letters.

Caracristi: I've always been grateful to Lou for the chance to be exposed to an entirely different part of the business.

That tells us something about how momentous the switch was from AFSA to NSA. You went out of business on Friday as AFSA and came back to the same organizations on Monday.

Caracristi: At the time, I was in one branch, and Juanita Moody was in charge of another working a different problem. Lou called us in one day and essentially asked us if we would be willing to [ex]change jobs. Lou was not the sort of person you said no to, but at the time it seemed to me like a strange arrangement. In the end, though, it worked out very well, giving each of us a chance to be exposed to an entirely different part of the business.

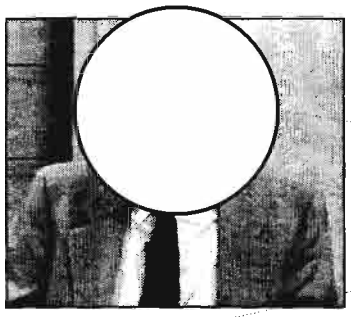
I've always been grateful to him for arranging that.

What was it like working here during that time? It was a technically difficult period. Did that affect morale?

Caracristi: Morale was never hard when the problems were hard. In fact, I recall morale as being very good.

Was there, however, concern being expressed from outside the agency about the future of cryptology?

Caracristi: There were concerns in that regard, and committees were formed to look over our shoulders, an effort in which Arthur was heavily involved.



[redacted] We were telling companies like Control Data and IBM what we wanted, and Tordella was at the center of that effort.

[redacted] Of course congressional oversight was a completely different issue. We didn't have any in those days. General Canine's favorite story was that he would go down to Capitol Hill, and some member of the appropriations committee would ask some interesting question to which the general would answer "Congressman, you don't really want to know the answer to that. You wouldn't be able to sleep at night." And the members would look at each other and they were content with that.

Levenson: All the committee chairs were very friendly in those days, and the secrecy impressed them, and they believed that NSA had to operate in a special way to be effective. We got most of what we wanted, and a free hand in how we used it.

In 1958, General Samford invites Dr. Tordella to a meeting in which he asks for Tordella's opinion of what the deputy director should be like. Dr. Tordella tells him the deputy director should be the director's "alter ego," and Gen. Samford says, in effect, you're it. Was that a surprise to anyone?

Levenson: Dr. Tordella had given one of his celebrated briefings to General Samford and a small group at the Pentagon, and they were very impressed. And that may have sold it for Lou.

[redacted] There was another candidate for the job, but I don't think there was any doubt that Dr. Tordella was the natural choice for the job.

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That will guarantee us a sotto voce reference or two on the tape to the other candidate. Were there any immediate changes with him in that job?

Levenson: I think the immediate impression was that now we *had* a deputy director, because his predecessors had had little impact. Joe Ream, the first deputy director, may have been a terrific lawyer, but he was out of his element. And Howard Engstrom was a capable man, but he held the job for only a short time before he left too. Once Lou came into the job, you knew there was someone there.

Dr. Tordella told the story of Mr. Ream coming into his office on the day Ream left, handing Tordella all his papers, and saying "Lou, you might as well keep these. You're the only person here who's ever spoken to me."

Morrison: I wasn't stationed here at the time. I was in the field. But the immediate impression was that there was a steady hand on the tiller. These were turbulent times, and peo-

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ple felt safer with Lou up there manning the conn.

Captain Pendergrass, you were not here at the time, but you had remained personal friends with Dr. Tordella.

Pendergrass: Well, when he made deputy director, I was surprised. I was with the Agency, in Melbourne, but even though he was an old friend, I considered it a surprise—a very pleasant surprise. He came out a few months later for a conference. He was still very interested in foreign relations, and he impressed all his colleagues at that conference.

We've entered into the period of his deputy directorship, a time in which, among other things, NSA was doing important work with the emerging technology of computers. [redacted] can you speak to that?

Pendergrass: Lou always knew what he was talking about because he spent time and effort to understand the issues.

Levenson: The computer business was in its infancy. A few years earlier, we'd had the invention of the first stored program devices, like ENIAC, and the British COLOSSUS, which you programmed by setting switches. After the war, several small groups, especially the United States, got into the business. Remington Rand-UNIVAC got started as ERA, Energy Research Associates, and Howard Engstrom was deeply involved in that effort. In those days, AFSA and later NSA operated with something of a "fee hand" in using our money. This amounted at one point to about $20 million dollars [in available funds], which in those days was real money. But we invested that money in several computer projects, including an effort to underwrite research into high-speed computing. We were basically telling companies like Con Data and IBM what we wanted in high-spe high-storage computers. HARVEST was result of that effort. That was all NSA, a Tordella was at the center of that effort. many years, we were IBM's best custom They knew it; we knew it; and we had a cons erable influence on the industry.

In looking at Dr. Tordella's work in this ar one gets the sense of someone very conscious the need to stay in touch with developments places like IBM and other te nical centers.

Levenson: Bell Labs another example. We wor with Bell Labs to develop first instances of shared p gramming, allowing seve users to have access to the s computer. The whole concep virtual storage, in which y keep moving data around so things you're not using imm ately can be shoved out so so thing else can be shoved increasing your storage.

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The issue of people skills must have b interesting. You certainly didn't go out and people with computer degrees.

Levenson: Right. We had to develop own skills, but we came up with some crac jack programmers that way. In those days, programming languages were very primiti and very specialized. That was very diffic We eventually decided, however, to go to so thing called "open-shop programming," on theory that it was still easier to teach a cryp lyst to program than to teach cryptanalysis programmer. We had some friction in the e days of cryptanalysts complaining that the grammers didn't know what they wante

wouldn't deliver what they wanted, so we said, "Here. You do it."

Caracristi: That's an area in which Lou Tordella had to step in and make it open.

Levenson: Oh yes. He had to overcome the resistance of the programmers' "union," that didn't want to open up the field.

Speaking about another "union," what about Tordella's relationship with other parts of the intelligence community?

Caracristi: I think they were excellent. He developed an excellent relationship with Richard Helms, for instance. He was the kind of person who developed respect. Those were times when NSA was recognized, as it continues to be, as the expert in a rather arcane world. Lou was able to bridge the gap between that world and the more general area of intelligence. Most of all, he was able to make understandable what was going on at NSA, using the briefing skills that Arthur has described. His standing in the community was very high, and he was, in effect, our link to the community.

Morrison: Those of us who attended Lou's funeral noted the number of people from other parts of the community. CIA was well represented, as were other agencies. They really turned out.

You get the sense that when Louis Tordella talked, people listened.

Pendergrass: He was a good teacher.

Follow up on that, if you would.

Pendergrass: As a matter of fact, Lou not only taught before he came into this business, he taught at night at George Washington University. He even used that experience to recruit a few people.

Levenson: He was very good at teaching. He would have risen to the top of that field, or any other field he got involved in. On a trip to Alaska one time, we stopped in Chicago to change planes and we were met there by the provost of Loyola University of Chicago, Lou's undergraduate alma mater. At one point, the provost turned to Lou and said, "If you had stayed with us, you would have been the dean."

It sounds like GW's math department needs to erect a plaque of some sort marking the contribution of NSA to its programs. Solomon Kullback and Louis Tordella.

Pendergrass: I think we've missed one point in that Lou always knew what he was talking about because he spent time and effort to understand the issues he was dealing. He wanted to understand all the parts of the business, rather than being a specialist in cryptanalysis or collection or whatever.

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[redacted] His student-teacher involvements were a lifelong concern. He taught both before and while he worked here. But even after he retired, he continued to go over to the University of Maryland and take courses in chemistry and physics.

What was it like working here while Dr. Tordella was deputy director?

Caracristi: As Jim said, he worked very hard to keep track of almost everything. One of the things I remember him keeping track of was the VENONA problem, which has recently been declassified. Now everybody knows about it, but for a long time, this was something Lou took a great deal of personal interest in. He kept in touch with the people working it, he looked at the product, he personally arranged to collect material that would enhance our productivity on this problem. It was also an area in which he had great concerns about security and compartmentation.

He kept personal track, as he always did, with the people working problems and issues that interested him. And he knew—personally—vast numbers of the people who worked here, even during periods of rapid growth.

Did he have a role in the continued work on this project so long after collection stopped?

Caracristi: Very much so. There was a great deal of concern that within this material might be revealed who were the missing spies in various cases that had developed. Because he thought this material might reveal some of that information—in effect, traitors in this country or in England—he, together with the British, encouraged the pursuit of this problem.

Were there people in the building who were suggesting that this was not worth continued effort, that it was becoming a historical problem, not a cryptanalytic one.

Caracristi: Yes, there were. I may have even become one of them.

It must have been difficult for a new director to come in here with a deputy who was so firmly entrenched.

[redacted] Some of these directors are still around, so I'd better be careful. But most of these men had very strong personalities of there own, so I don't think they felt challenged by Dr. Tordella. Some, especially those we might describe as more intellectual, actually felt good having him around. General Allen and Dr. Tordella had a great relationship, and General Allen was one of the better-informed directors, technically speaking, we've had. Other directors may have been more political or not as technically skilled, and they may have been intimidated by Dr. Tordella.

Levenson: Let me put in a word for Gordon Blake, who was a very good director and who did not feel threatened by Lou. And they worked well together. Next to Canine, who in my book was in a class by himself, Blake was marvelous.

[redacted] Canine was another one who had a great respect for Tordella. No question about it, Canine helped establish Dr. Tordella's position in this agency. To cite another case, I don't think Gen. Samford was intimidated by Dr. Tordella. I think he regarded him as a friend. I know that Admiral Frost looked to Tordella for help on many things.

Levenson: Admiral Frost looked for help anywhere.

[redacted] Admiral Frost was his own man and made his own decisions. But he was wise enough to understand that Dr. Tordella's understanding of this business was greater than his. He took advantage of that understanding. All the parties associated with this story are deceased, so I think I can tell it without fear of libel suits. But we had a new director, Admiral Frost, and there was a period of several weeks in which he could not take up his position because his predecessor was not eager to give it up. So Dr. Tordella, who had become deputy director at that time, decided Admiral Frost should occupy himself going around visiting places that were going to be important to him in his new job. He wanted him to visit GCHQ, and he asked me to go with him to keep an eye on him, make sure he saw the right people, and so on.

Let's talk about the period just before and after Dr. Tordella's retirement. Was this a surprise?

Caracristi: No. I think it was accepted.

Morrison: If anything, I think people felt Lou was entitled to retire. He had borne the brunt of an awful lot.

Caracristi: And Buffham was the heir apparent. Buff had worked plans and policy, and had the background to deal with the range of problems associated with the job. So, I think it was a very easy transition.

Levenson: I think it was an advantageous time for him to retire personally, and at some point I think he actually felt he may have stayed a bit too long. It may have been true. He did so many marvelous things, but you can only stay in a job so long. He was ready to go.

What stands out about him personally? What should this generation of cryptologic professionals know about Louis Tordella?

Morrison: He was a dedicated man, a man who just lived this business. The amazing thing is how he found the time to do all the things he did. He ran rings around all of us.

I frequently worked on Saturdays when I was ADP, and Lou would work on Saturdays, and after noon or so, we would go up to the Director's dining room and look in the icebox and get cheese and rolls and "libations," and then we'd really get around to talking about what was on our minds. This was where you saw the real, warm, considerate person he was. I just admired the dickens out of him.

Caracristi: It's important to remember that even though he did work hard, he was able to maintain interests in things other than work. He was very interested in opera, not just the Washington Opera, but the Baltimore Opera. He went to New York to the operas; he was interested in other kinds of music. He was interested in his family. This was a very well-rounded person.

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[redacted] There'll never be another Tordella.

Captain Pendergrass, we've done you the disservice of surrounding you with all of these Army people. You get the last word.

Pendergrass: He was a rare combination. He was a very smart man, a hard-working man, a very good leader who was also very loyal. It's not easy to find people who combine all of these. When you think of the funeral and the chapel at Fort Myer absolutely full. I think the staff over there was completely unprepared for standing room only for a Captain, U.S. Naval Reserve. That was a tribute on the part of everyone there.

I know you're all here today to honor Dr. Tordella, but for those of us working here today, it's an honor to have you back. Thanks for coming to spend the time.

CRYPTOLOG interviews NSA employee Gene Becker:

Mr. Becker, you've witnessed the discussion with Dr. Tordella's colleagues. What's your sense of Dr. Tordella's contribution to NSA?

As has already been pointed out, Dr. Tordella's contribution to this agency was absolutely tremendous. Among the qualities that distinguished him were his integrity, even extending to very minor things. Frank Austin, who was very close to Dr. Tordella, describes how Tordella was in London when Frank was our representative there. Tordella's flight was cancelled and Austin offered to arrange to get him on another flight, first class. Dr. Tordella refused, saying he wouldn't travel first class, because no one else in the agency could. Austin tried to persuade him that it would keep him on schedule, but Tordella wouldn't hear of it. He flew out the next morning, on coach. That was Dr. Tordella.

"When questions came about why did NSA need this or need that, the assurance that 'Dr. Tordella says they need it' went a long way toward gaining approval."

The other characteristic that came out in this conversation was his moral authority. When the Martin and Mitchell case came about, it was one of the worst spy cases in the agency's history to that point. It shook everybody up, the chief of personnel and the chief of security were fired, and the workforce was very restive. Rumors were flying all over. Dr. Tordella convened a meeting in the Friedman Auditorium, and gave assurance to the agency that, no matter how bad the case was, we would go on. People should go back to their jobs and carry on. With his assurance, the shock waves going through the agency were stilled. He had enormous authority in moments of crisis.

But the power of Dr. Tordella's word was enormous within the U.S. government. At the time, for example, he handled the NSA budget practically singlehandedly. He either prepared the director to go downtown or he testified personally. When questions came about why did NSA need this or need that, the assurance that "Dr. Tordella says they need it" went a long way toward gaining approval. That kind of authority is not likely to be equalled.

Someone once said "You manage things; you lead people." And the leadership quality comes across so strong, you could still see it today with our guests. Dr. Tordella was their leader.

And that respect and authority continued throughout his life. There's also that attention to detail. Nothing was too insignificant to escape his attention. When the agency moved to the Friendship complex, the regulations said the government had to pay relocation allowances if the change of station involved a trip of more than 10 miles. The system assured Dr. Tordella that in fact the distance did exceed 10 miles. But that wasn't good enough for Tordella. Joe Burke, who was then a senior executive, used to tell about getting a call from Tordella saying, "Bring your car around in ten minutes." Not knowing what the purpose was, Burke brought his car around to the front of the building, Tordella got in, and directed him to Friendship. And the distance on the odometer was just over 10 miles. But there was that attention to detail. He approved every major project.

He was restless about the development of a more bureaucratic system that seemed to be under-

mining that personal control that had been possible when the agency was younger and smaller.

Toward the end, the growth of bureaucracy, the increased congressional oversight, and other things must have been significant changes for him

The simple growth of the agency was a factor. We had become a several billion dollar a year corporation, with thousands of people operating a global system. And that may have been part of the feeling, referred to by Arthur Levenson, that Tordella may have felt that he stayed a little too long.

If you go back to that period of consolidation we spoke about earlier, that consolidation was successful. But it's important to note that it could have failed. It was not inevitable.

There was nothing inevitable about it at all. In fact, as someone said earlier, we were on probation in those early years. We were constantly being examined and reexamined. We owed our success in part to Eisenhower, who remembered how important COMINT had been to him during the war, and wasn't going to jeopardize that.

And internally, you look at people like Gen. Canine, Adm. Wenger, and Dr. Tordella as keys to that success, with Dr. Tordella providing much of the continuity.

What Tordella contributed, among other things, was his ability to negotiate between various factions. If he proposed a compromise, people were willing to listen. His personal prestige carried enormous times at a delicate point in our history. The centrifugal forces in the process, a natural restlessness on the part of the services to accept NSA authority, a tendency to wonder whether intelligence they didn't control would be there when they needed it, was an understandable concern. So we always had to prove the case that we would be there. And re-prove it. There's a changing audience out there that constantly has to be reeducated, and Dr. Tordella provided enormous continuity over a long period of time.

You were interviewing him late in his life, when he knew he was very ill. What sort of assessment had he made of his career?

I think he was enormously proud of his role. That came through in the interviews, as did his natural role as a teacher. He left a legacy of technical excellence that he was proud of, and that will endure as long as the agency endures. He was the first NSA employee to attend the National War College, and he pushed programs like that. He pushed people to go into them. It was not Tordella single-handedly promoting this, people like Frank Rowlett and others also contributed, but the emphasis on technical excellence is one of his enduring legacies.

Any last thoughts?

We'll never see another Tordella, for a variety of reasons. We've changed. The world has changed. But the qualities he brought to the agency: integrity, moral authority, and civility, those are always in short supply. And qualities we always need to look for. That too is a part of his legacy.

Not a bad record. Moral authority, integrity, teaching instincts, technical excellence, leadership. All the things we would want to instill into future generations.

Exactly.

Dr. T. — The Man

By [redacted]

I completed a review of about twenty boxes of former Deputy Directors' correspondence at about the time of Dr. T's death in January 1996. The title "Dr. T" was used almost universally by many mid-level managers. Much of his material will continue to be of high interest to SIGINT and COMSEC (INFOSEC today) historians. Having known him personally, I was always impressed by his technical knowledge, management skills, and writing ability. After reviewing many of his hand-written notes, letters, and memoranda, I am now equally impressed by his humanity. He was extremely logical in his thought processes, a master of the English language, and precise in his instructions, particularly for access to sensitive material. His application of the need-to-know principle was often enforced by obtaining one's agreement not to make copies nor show it to anyone; one's initials usually were mandatory. One could feel the sincerity, and the intensity, as he explained to people in meetings and on the telephone, how things would be. Here are a few of his notes to specific individuals:

- 30 November 1964: "Polly: For your info. Please initial. If you choose to let anyone else see it, please let me know. Please return and we can discuss."

- 8 December 1973: "By Hand. Buff: you should read this. Please return to me by hand."

- 10 July 1973: "This copy retained by me with (the writer's) knowledge."

- December 1973: "**N.B.**: If these papers cannot remain in the D/DIR safe, they should be burned. Under **NO** circumstances should they go to the archives. L. W. Tordella." (Even 22 years later, his wishes were heeded; they did **not** go the archives!)

- 9 July 1974: "Mr. XXXX read in my presence. I stressed no attribution of any ideas set forth herein."

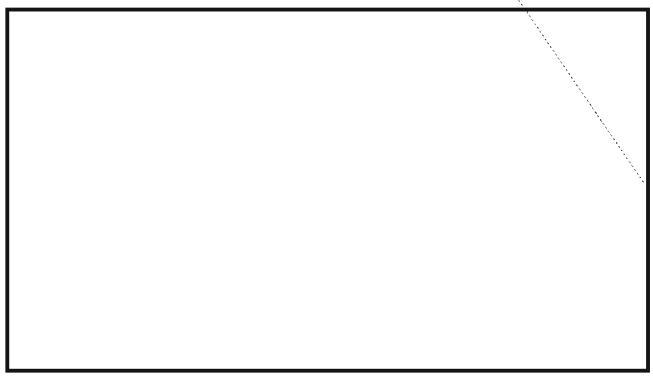
- He once wrote a reply for Lt. Gen. Carter's signature which further typifies his sensitivity to access: "First of all be assured that only Lou and I will know of the contents of your letter until such time as you advise me that the appointment is made public. (Except, of course, the beautiful blonde secretary who typed this and she is the most discreet of the three of us). . . Discreet inquiries lead me to conclude that your choice of a replacement is an excellent one . . . I notice that you have emphasized his tender age—44. It is only pure coincidence, I'm sure, which prompts me also to refer to people in this age bracket as babes in arms and to 54-year-old people as fuzzy-cheeked youths. Us older folk are teen-aged delinquents."

[redacted] retired after 41 years of government service. After a 21-year career with the Naval Security Group, he has worked for five Directors, five Deputy Directors, and ten Chiefs of Staff/Executive Directors.

Dr. T. was a champion of the UKUSA agreement and would have surely attended the 50th anniversary of its existence had he lived only a few more months. Also noteworthy was the presence of the current Directors of both GCHQ and CSE at his funeral in Arlington National Cemetery on 23 January 1996.

His letters to the Senior U.S. Liaison Officer, London (SUSLOL) and to GCHQ were extensive; most of them he apparently wrote himself. Among other topics, he, like everyone else, wanted to know how he was perceived by others. In the mid-60's he asked a trusted SUSLOL colleague for an informal assessment which brought a handwritten reply: "Further, in your letter you ask of 'any reflections recently on your performance.' People sometimes tell me you are too busy, i.e. that you do too much yourself. My reply is 'who else?' The only specific thing I have heard from our XXXX friends which is anything but high praise, was their amazement over the XXXX thing. The concern was deep and they had a hard time reconciling the NSA 'position' and their knowledge and opinion of you. They finally attributed it to the fact that you were so busy that you hadn't had time to think it through and XXXX had got you in a weak moment. Otherwise, all and everything I hear from visitors, is fine.

"With respect to how busy you are, Saturdays and all that—you've got to stop it—I don't know how. But you aren't going to be any good to anybody if you get sick. Could you use XXXX more? . . . Have you given any thought to having a couple of junior 'leg men' type assistants? Could XXXX take some of the administrative load off you? Could you maybe keep your door closed more often during the day and not be so available? I really think you must do something." Such cogent advice notwithstanding, no one remembers seeing Dr. T.'s door closed often, nor many horseholders awaiting instructions from the master.



In spite of advice from colleagues to moderate his schedule and rely more on others, no one remembers seeing Dr. T.'s door closed often, nor many horseholders awaiting instructions from the master.

On 27 May 1982, long after he retired, Dr. T. reviewed a 1963 report. He penned a note on the cover which said, "I spent almost 8 days full time on various aspects of this study of NSA and NSA-GCHQ relationships." He no doubt provided his usual sage advice to interested NSA parties.

In a 2 March 1968 letter to SUSLOL: "Another problem which is causing me undue waste of time and energy is the usual agitation and nonsense about reorganization which occurs in every Director's third year of office. Because I don't feel inclined to discuss it in detail without a liberal use of four-letter words, I'll say nothing further about it." And he didn't! But his good sense of humor came through in the final paragraph: ". . . By the time all the miscellaneous nonsense is taken care of, the remaining two to five percent of my time is being devoted to coping with some of the pressing daily problems in the Agency, including, the budget, and one or two other

minor inconsequential aspects."

Both his ire and humor were evident in a privacy message dealing with an outlandish article in the magazine *Ramparts*. It dealt with US/UK collaboration [redacted]. If you have read the *Ramparts* article, you will note that most of the claims made by [the author] FELLWOCK (and I can hardly resist the temptation to transpose a couple of letters in his name) are fictional . . . The statement that the NSA HQS has no windows is belied by the picture of the HQS building published in *Ramparts* which shows either windows or painted-on black rectangles." For this particular message, he did not even let the communications center keep a copy; the original message form was dutifully returned to him with the date/time group handwritten on it.

His ability to explain NSA's mission and functions was much in demand, both at home and abroad. An August 1973 letter from the President's Foreign Intelligence Advisory Board acknowledged his briefing skills: ". . . you might be interested in learning that there was a uniform sense of admiration for the clarity with which you articulated a series of complex, technical matters, and respect for the ease with which you covered the full spectrum of NSA responsibilities."

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Dr. T.'s edicts were not encumbered by formal "decision memoranda." He often wandered into your office, exchanged pleasantries, and told you what he wanted done. [redacted] After successful testing, and amid plans for an operational capability, the ever-practical, logical, and sensible Dr. T. feared aircraft collisions [redacted] The coup de grace was delivered personally to the senior manager quietly, efficiently, and irrevocably.

Some may have chafed under the inflexibility of his guidelines, strict accountability, and attention to detail; however, his strong leadership ability was widely respected and obviously served the Agency well in its formative years. There is little doubt that to many, he was, in fact, "Mr. NSA" during his tenure as Deputy Director from 1958 through 1974.

"If Lou Tordella Says It's OK, That's Good Enough For Me"

by Gene Becker

The young Navy lieutenant was handed a highly classified message with instructions to decrypt it personally. It was 1943 and the lieutenant was Dr. Louis Tordella, acting OIC of operations at the Bainbridge Island Naval Station, receiving an "eyes only" instruction from Naval Headquarters to set up a compartmented intercept project directed against Soviet naval communications. He quickly assembled a select team of about 15 operators, all of whom had been "on-the-roof-gang"[1] Morse operators and many of whom went on to have highly successful careers in the Navy (six retired as captains, including Chris Currie and Hal Jocelyn). This was the first U.S. Navy collection effort against a Soviet military target, and was Dr. Tordella's first operational cryptologic assignment.

Dr. Tordella's association with the Soviet problem continued after he left Bainbridge Island in 1944. He received orders to go on assignment to China after a stop at headquarters in Washington. On arriving in Washington he learned that his orders had been changed and that he was to report to Bell Laboratories in New York for special training on a new system of equipment that was designed to decipher Japanese voice codes. Before the system could be deployed to the Pacific, however, the military situation there had changed and it was redirected to a newly established U.S. Navy experimental intercept site at Skaggs Island with Lt. Tordella in charge. In addition to personally heading the operation, he designed a crude multiplexer, the first of its kind (then Lt. (j.g.) Art Houseman, who went on to become CEO of Ampex, designed a greatly improved multiplexer); this system, despite being cobbled together, proved to be very successful.

The training assignment at Bell Labs was to have an important influence on Dr. Tordella. It was a valuable lesson in how research and development could quickly provide concrete solutions to operational problems in the field. It was also a lesson in the value of training and hands-on experience in the successful deployment of new and untried systems. Furthermore, it was a practical demonstration of the importance of collaboration and cooperation with the private sector.

The early years of Dr. Tordella's long career in cryptology were one of many subjects that he talked about in a series of interviews conducted as part of the Center for Cryptologic History's Oral History program in the year preceding his death. What follows are some impressions of Dr. Tordella and a few highlights of these interviews (a full account will be published in the future).

In 1960, the defection to the Soviet Union of two junior NSA cryptanalysts named Martin and Mitchell made front-page news across the nation and hit the Agency with devastating impact. Although the Agency had had several spy cases in the past, specifically those of

1. This term was applied to the Navy's Morse intercept operators, who literally were trained in huts on the roof of the Navy Headquarters building.

Mr. Becker is a longtime NSA employee. This article is derived from a series of oral history interviews conducted with Dr. Tordella by the author.

Petersen and Dunlap, none was of the magnitude of the defection to Moscow of Martin and Mitchell. Several investigations were launched into the affair, the most significant of which was that of the House Un-American Activities Committee. There were several immediate consequences of the various investigations: the Chief of NSA security was fired and a number of subordinate officials were transferred; the Chief of Personnel was also fired; and the security clearance procedures were changed to require full background investigations before access to classified material was granted.

The affair continued to reverberate throughout the Agency and rumors of additional firings and adverse actions persisted. Dr. Tordella, by now Deputy Director of the Agency with a well-established reputation for honesty and integrity and with an aura of moral authority, convened an open meeting of employees in the Friedman Auditorium. In a brief address he told a standing-room audience that the Agency had been hurt by the Martin and Mitchell affair, that actions had been taken to improve security and personnel procedures, but that there would be no witch hunt, no draconian measures and that the essential work of the Agency would continue and would prosper. His words of assurance had an immediate calming effect and life at NSA soon resumed its normal pattern.

His words of assurance to the workforce after the defection of Martin and Mitchell had an immediate calming effect.

Dr. Tordella described relations with Congress during most of his career as Deputy Director as being confined to dealing with a few key committee chairmen and senior members in both Houses. He often appeared personally before the committees, either accompanying the various directors he served or by himself. Such was his reputation for probity on the Hill that Senator Saltonstall, the senior senator from Massachusetts and member of the Senate Armed Services Committee, was quoted as saying, "If Lou Tordella says it's OK, that's good enough for me."

Dr. Tordella recalled one occasion when Mendel Rivers, Chairman of the House Armed Services Committee, asked to see him very early one morning to explain why there was need for another Liberty ship for the Navy to use as an intercept platform. Before meeting with the chairman, Dr. Tordella asked about the existing Liberty ship and was told that the Navy had ordered it to take up a position off the coast [redacted] because of a serious internal crisis there. [redacted] During his meeting, Chairman Rivers asked him where the existing ship was located, and Dr. Tordella responded that it was on location off the coast [redacted] because of the current crisis. "Good," said Rivers. "That's where it ought to be," and approved the request for a second ship.

As Deputy Director, he took a special interest in and played a direct role in the conduct of the Agency's foreign relations. He had been a leading member of the U.S. team that negotiated the original BRUSA Agreement shortly after World War II and later he played a key role in negotiating the follow-on UKUSA Agreement that governed the relationship between NSA and GCHQ. Dr. Tordella's view, which in effect became the Tordella doctrine, was that the Agency had a partnership with GCHQ and that we shared tasking and operations but could function independently of one another. As he said, "We are each mindful

of our national interests but can still find common ground."

Dr. Tordella was also directly involved in relations with private industry. Here too the high regard and esteem in which he was held served the Agency's interests well. He developed a close and long-standing relationship with Dr. William O. Baker, former director of Bell Labs. Dr. Baker was an influential member of the scientific community, a member of the President's Foreign Intelligence Advisory Board under several presidents and a great champion of cryptology and the Agency. Dr. Tordella had an understanding with Dr. Baker and others in the private sector that if NSA needed help in technical and scientific endeavors they would respond as a matter of the highest priority. NSA was brought in on planning by IBM, Sperry Rand, RCA, and Burroughs, among others, and was able to influence significantly the design of systems and equipment and indeed the pace and direction of research and development, particularly in the fields of telecommunications and computers.

As is evident, Dr. Tordella was involved in every important aspect of the Agency's mission and functions. One aspect that he dealt with that resonates even today was the NSA role in the production of intelligence. The issue began with the establishment of the Agency and the attempt to rein in its cryptologic mission by those opposed to the centralization that NSA represented. The subject was highly contentious and charged with emotion, and issue was joined over NSA's issuing several summary reports during one of several crises in the 1960s when the flow of intelligence had overwhelmed the system.

Dr. Tordella, although forewarned that the summary reports would stir up a controversy in the community, approved their release. Gen. Carroll, then director of DIA, immediately protested this overstepping of bounds by NSA. The issue was taken up at a USIB meeting at which Dr. Tordella represented the Agency. After Gen. Carroll explained his position, the chairman asked him whether he found the reports useful. He replied with a yes. The chairman then asked him whether DIA could have issued the same reports. He replied with a no. The Chairman then asked each member the same questions, received the same replies, turned to Dr. Tordella and said that NSA should continue to publish such reports.

Dr. Tordella was the first Agency civilian to attend the National War College, and thereafter the Agency began to send people to the senior service schools routinely. He was a great believer in the value of training and education, and we mentioned earlier how his own experience at Bell Labs made a lasting impression on him. He also promoted maintaining the highest possible standards of technical and professional excellence and ardently supported the professional career structure that became a hallmark of NSA's career development program.

Dr. Tordella's long and distinguished career chronicles the Agency's passage from its tentative beginning after WWII to its position today as a pillar of national security.