

**MEMOIRS: HOT WAR - COLD WAR,
BACK-OF-THE-LINES LOGISTICS**



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by

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INTRODUCTION: WE LEARN FROM EACH OTHER

Lore adapts to altered circumstances and lifestyles, and to cultures and environments other than the times and places where the 'lore' had its roots. The familiar may be comfortable, but we also read and listen for other perspectives that disclose events and experiences grown dim over the decades, and in time, of generations past.

In memoirs and storytelling, a culture's traditions and values offer opportunities to inject a sense of history, and visions of a future. In doing so, they provide context to interactions among the family's constituents and continuity to its culture and community. Excessively repeated, they might appear as frayed platitudes. Yet, throughout all civilizations a culture's traditions and values retain their relevancy and often, their majesty.

Tradition passes history to a new generation on what happened to family and community across time, and, to the extent possible, the reasons. Elders' stories and lore convey facts and interpretations about customs, events and personalities and how they became part of the whole. Tradition supports the family's and the society's sense of continuity.

Social and cultural awareness offers sanctuary to education, law enforcement, science, sports, health care, religion, and more. Together, they are primary forces that drive a civilization's evolution in concepts, principles and methodologies that a society needs to make life livable and enjoyable. Awareness includes what is wrong with the way things are, as well as what is right.

Values are what it's all about: the bottom line. Values, however, are a mixed bag, and passing them along through stories, lore and memoirs is a matter of memory, selection, circumstances and emphasis. Values might include stimulating self-esteem in others; taking into account another's sensitivities; respecting life; repairing Planet Earth; knowing the differences between pity, sympathy, compassion, and empathy; striving to be honest and fair; and having respect for institutions and laws but being willing to act within the law to change those no longer suitable for the common good. Advocates sometimes prefer to stress personal proclivities and biases in passing along family and community values. Values provide substance to awareness and tradition.

MEMOIR: PARACHUTE RIGGER: WORLD WAR TWO: HICKAM AIR FORCE BASE, HAWAII
1941-1948

Several years ago I was one of several addressees on an email from students at a middle school in a northeastern state. They wrote that they were working on a class project about American involvement in World War II and invited memoirs from older Americans who had lived through those times. They wanted to learn directly from those who had served in the nation's wartime Armed Forces and Merchant Marine, as well as from civilians on the home front who had produced, serviced, and transported weapons and supplies from where they were made to where they were used. The students wanted to hear from people who cared for the wounded and helped in other ways.

The teacher added a note that memoirs received had generated questions among the students. The result was a Q&A exchange conducted in follow-up email communications. At the project's conclusion, the students' teacher reported to the electronic community that the project had been a great success: the students learned history from those who had lived it. The storytellers, many of whom were long retired, had an audience for reminiscences that might not otherwise have surfaced. Together with the students, they built a bridge from the 1940s to the 1990s and, in doing so, had contributed to the historical records of an important era in American history. The experience enhanced communications and respect across the generations.

I wrote to the students about my work as a parachute rigger in the war. To set the stage, I described the parachute's purpose: to lower a weight, that is, a person or a cargo, slowly and safely from a place in the sky to a place on the ground. In time of war, the one-way trip down might be aircrews that were forced to abandon their airplanes because the craft could no longer remain airborne. During World War II, hundreds of thousands of airborne soldiers parachuted from transport aircraft with their weapons as part of military operations. At least equal in numbers, cargo parachutes lowered food, weapons, and other essential supplies and equipment to the fighting forces and to isolated civilian communities. Parachutes also have a wide range of uses in peacetime, for instance, emergency escapes from disabled aircraft and other airborne systems, to slow an aircraft on the runway after a high-speed landing, sport parachuting, 'fire jumpers' in fighting forest fires, rescues in terrain that lacks easier access, and more.

Parachutes must work the first time; there are very few second chances.

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In September 1941 I was a civilian parachute rigger for the Air Service Command at Patterson Field, near Dayton, Ohio. My job was to repair and service-pack man-carrying and cargo parachutes for United States Army Air Corps flying personnel, Army parachute troops in training, and American and friendly foreign nations' special operations in which the United States was involved in various parts of the world.

The months from September through November of 1941 were busy times for our shop. The conflict raged across Europe and on battlefronts in Asia and Africa. The United States Armed Forces accelerated their training programs, and Americans were active in the war zones of other nations. The parachute shop, in which I worked, as in most other industrial areas at Patterson Field, and dozens of other bases throughout the United States, was on a round-the-clock seven-day workweek.

Damaged man-carrying and cargo parachutes were brought to our shop in large quantities from United States training bases and overseas theaters of operations. Often, the parachute harnesses, which are wrapped around the jumpers to lower them safely, were shredded, canopies were ripped, and canopy containers and emergency survival attachments were scorched and gory. I was in a crew that fixed man-carrying parachutes, and then drop-tested a dozen or so that were randomly selected by the shop foreman from each two or three hundred that had been given a major repair and packed for service.

The test consisted of attaching a service-packed parachute to a 120-pound weight or canvas-covered dummy, loading the weights or dummies into a C-47 airplane, and connecting a metal hook at one end of a 30-foot lanyard to the parachute rip cord and the other end to a cable stretched tightly above the airplane door. The

door was lashed open. Each of the two men on the test crew wore a parachute and they were also secured to the airplane frame by a short heavy belt so that they would not accidentally fall from the aircraft.

The pilot took off and circled the field at about a thousand feet. Approaching the drop zone, the co-pilot flashed a warning light above the door where the parachute handlers were stationed. At the next signal, the handlers, one on each side of the dummy, heaved it out. The lanyard, when fully extended, pulled the ripcord, and the canopy extended, opened, inflated, and descended. The ground crew tracked the drifting parachute, guessing at where it would most likely touch ground.

Ground crew work is not dull. I remember how we would spread out, and watch the dummy as it fell; there were times we had to move fast to get out of the way. As soon as we knew where the parachute would land, we'd run toward it and, as soon as we got to where it was, haul in one of the webbing straps to spill air from the canopy, and get it all together with the least possible damage to the parachute and to ourselves.

There were times, even on a relatively calm day, when a gust would pass across the field and inflate the canopy before we got to it. A partially inflated canopy in a gentle breeze can drag a heavy dummy and parachute along the ground faster than ground handlers can run.

I'll always remember chasing a parachute and its dummy that a sudden gust dragged, rolled, twisted, and bounced along in a field we were using for the drop zone. Finally, with a lunge, I landed on the dummy, wrapped both legs around it, and grasped and hauled back one of the straps. I managed to spill enough air to deflate the canopy. Controlling a dummy that is being tossed around by a sudden gust can be like riding a spirited pony.

Back at the shop after the tests, we inspected every part of the parachute closely to see how well it had been repaired. At one time, apprentice parachute riggers were not certified until they jump-tested a parachute that they, themselves, had inspected, repaired and packed. Jump certification by riggers was suspended because of the enormously increased workload.

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On Sunday, December 7, 1941, I was working the night shift in the Parachute Shop. The Japanese attack on Pearl Harbor that morning was being reported on the radio in almost continuous news flashes. About an hour after the work shift began, our supervisor instructed all male parachute riggers to go immediately to the aircraft maintenance main hangar nearby. Several hundred men from aircraft and aircraft systems repair shops, and other shops on the air base, were already there. They were milling about; I joined them and wondered why we had been called together.

A military officer climbed to the platform at the top of an aircraft maintenance stand. Drawing attention by rapping on the stand's railing with a metal object, he told us that the Air Corps needed skilled workers and supervisors immediately at Hickam Field in Hawaii. Whoever wanted to go, he said, should raise his arm and his name would be placed on a list.

I happened to be single, footloose and fancy-free at the time, and my arm got caught in the updraft. We were told to stand by, and the others instructed to return to their shops. Those of us, who stayed, lined up, and our names, badge numbers, and job titles were entered on a list. Each of us was given an instruction sheet.

The next morning, following the instructions, I reported to the dispensary for vaccinations and immunization shots in both arms, and then to the Personnel Office to sign papers that came at me from all directions. I had a week to get my affairs in order; after that I would be on stand-by for departure. A week later, along with several hundred other volunteer workers, I boarded a train on a siding next to a warehouse, and was on my way west.

The train, with all windows covered by blackout curtains, left Patterson Field, Dayton, Ohio, in the dead of night, and arrived three days later at Moffett Field near Mountain View, California. Disembarked, we lined up for bedrolls, and were pointed toward rows of tents in a muddy field adjacent a dirigible hangar. An instruction sheet, tacked to the tent's center pole, told us where the mess halls were located, and the meals schedule by tent number.

More trains arrived the next day and the day following. Hundreds of civilian workers joined us in the tents waiting for the next leg of our journey. We quickly got to know each other; we had come from all across the country: New York and Pennsylvania, Ohio and Georgia, Alabama and Texas, Utah and California. The Air Corps bases at which we had signed up were Griffis and Olmstead, Patterson and Robbins, Brookley and Kelly, and Hill and McClellan. We were the vanguard, ready to move out with little or no advance notice.

Except for a carry-on bag, with a change of clothing and personal items, our luggage had gone directly into the ship's hold.

Days passed. The 'alert' came one night at 2 AM. Voices shouted along the lines of tents, 'This is it, you guys. Movin' out. One hour.'

In a torrential downpour, we slogged through ankle-deep mud and climbed into the backs of canvas-covered trucks. Flaps down, escorted by armed military guards in Jeeps, all of the trucks were blacked out except for dim lights gleaming through slits in their headlights. We formed up as a miles-long convoy rolling north along U.S. 101 from Moffett Field, and arrived, shortly before dawn, at Fort Mason, adjacent Fisherman's Wharf in San Francisco. The trucks filled the pier from end to end; a gangway led up to the deck of a ship alongside. We learned later that she was the U.S. Grant, a World War I troop transport.

Herded below deck, we jammed into compartments where the narrow bunks were five high along aisles barely wide enough for passing. A 'Now, here this... .' over the loudspeaker restricted all passengers to their compartments, and to passageways only when necessary, until we were out of the harbor. We were to have our life preservers with us at all times.

Hours later, the ship's vibration, a back-and-forth shifting in my center of gravity, and creaking along the bulkheads, told me we were under way. Scuttlebutt was that we were in a convoy, escorted by destroyers. Enemy submarines were suspected to be in the area.

We took turns, by compartment number, going on deck. On our way to Honolulu, the convoy zigzagged frequently to minimize the success of an enemy air or submarine attack. Finally, on the fifth day, land appeared on the horizon and, shortly afterward, we saw Diamond Head. Our ship left the convoy and entered Honolulu harbor.

We docked and disembarked, under heavy military guard, at the Aloha Tower pier and boarded the Toonerville Trolley, as we got to know the train on Oahu's narrow gage railway. An hour later, we were at Hickam Field.

The devastation was appalling. Burned-out hulks of bombed aircraft were scattered about on parking aprons, and huge accumulations of debris lay next to aircraft hangars and along the roadways. The roofs of military barracks hung down along the outsides of the structures; they had exploded up and outward over the walls.

As a senior technician, I was assigned to the recovery and repair of damaged parachutes, life rafts, inflatable life preservers, oxygen masks, and the escape-and-evasion kits that air crews relied on when they bailed out over enemy territory. All of the equipment that came to our shop was closely inspected, repaired, if possible, and, when the standards called for it, tested. As soon as survival gear was fixed and ready for service, they were returned to the airplane from which they came, or shipped to air bases in the battle zones.

Many of us joined Hickam Field's armed civilians, officially titled the Hawaiian Air Depot Volunteer Corps. We were a group of employees who, during non-duty hours, trained to handle and fire a rifle and a pistol, and guarded locations at night where high security was needed. We were armed with '03 Enfield rifles and, at night, patrolled aircraft maintenance hangers, warehouses, instrument repair shops, and an engine repair line underground at Wheeler Field, near Wahiawa in the Oahu highlands.

As armed civilians, we were each given a card to carry in our wallets. The card stated, in fine print, that if captured by the enemy while carrying a weapon, we were entitled to claim rights as a 'prisoner of war.' The Army Air Corps military officer who commanded our unit said that, since we did not wear military uniforms, nor carry military identification tags, the card would certify us as 'combatants'. The statement on the card was supposed to keep us from being shot as spies in the event the enemy invaded the Hawaiian Islands.

During the war years, I fixed and packed thousands of man-carrying and cargo parachutes, and serviced many other types of life-saving and survival gear.

After the war, my job was changed. I investigated defects that had been made during manufacture or repair in all types of equipment. My job was to examine what was wrong, and talk to mechanics and anybody who knew how and why it happened. After collecting the information, I wrote reports that described what was wrong so that specialists and engineers, who were thousands of miles distant, would understand the problem and solve it.

I worked at Hickam Field until April 1948, and then returned to the place where I had signed up when the war began. By then, the base had grown enormously, and was named Wright-Patterson Air Force Base.

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Any questions?

The students e-mailed their questions to me, and I replied, also by e-mail. An example:

Q. How did you get from fixing parachutes to writing reports about mistakes and defects?

A. I think my change in jobs came about because of what happened when I worked with parachutes and survival gear. It began in 1942, when large numbers of damaged parachutes were shipped from the Mainland to Hickam Field and other Air Corps bases in the Pacific. The parachutes had ripped and mildewed canopies, badly frayed suspension lines, rusted metal connectors, and the straps that secured the aircrew person in place, were so rotten that they came apart in our hands. Other types of survival gear that came to our shop from the Mainland had obvious defects, too: life rafts and life preservers did not inflate the way they should, escape-and-evasion kits were damaged or had been pilfered, and items that were vital to survival were missing. In many instances, medical kits tied to the parachute harness or in life raft compartments had been slashed open and pain relief syrettes were just 'gone.'

Before 1942, parachute canopies were made of silk or cotton cloth, and the harness, in which the parachutist is encased, was made of cotton webbing. Both silk and cotton are organic materials which can be seriously weakened when attacked by fungus and dampness. That's what had happened to the gear we were getting, much of it recently shipped. Often, the equipment was unsafe, and could not be fixed.

I complained to my supervisor about the quality of the parachutes and survival gear that we were getting from the Mainland, and he passed my complaints along to his supervisor. He told me to put my complaints in writing. I wrote reports that described the damage, and included photographs. The poor quality of the life-saving gear that had been sent to us, I wrote, added to the risk of an emergency bailout from a disabled airplane.

At work one day, I was called to my supervisor's office.

'Just got a phone call from the front office,' he said. 'You're to report immediately to Headquarters, Seventh Air Force. The soldier in the Jeep outside is waiting for you. He'll drive you there. Move.'

Sitting alongside the driver, I wondered what it was all about. The thought that I had made an error in my work made me nervous. Was I being called on the carpet because an injury, or worse, had happened, resulting from an improperly packed parachute?

At Seventh Air Force headquarters, a Colonel cleared me past the security guards and I followed him into an office that had a sign on the door. It read 'Major General White, Commander, Seventh Air Force.' Several men in uniform were standing near a desk at the far side of the room. A uniformed officer was seated behind the desk. In the middle of the room lay several packed parachutes in a heap.

The officer behind the desk, stood, came around, walked to and crouched next to the parachutes. He motioned me to get down beside him. On each of his shoulder tabs he wore a Major General's two stars.

'OK, son,' he said, 'show me the problem.'

My reports had received attention.

I stared at the parachutes. Did any among them include the damage I had reported? I examined the inspection log attached to each parachute. The dates stamped in the logs showed that the parachutes had been recently inspected and packed at a stateside Air Corps base.

I stood, bent forward over one of the parachutes, and grasped one of its four straps; the strap is known as a 'riser', and it connects the jumper to the canopy. The life of the jumper would depend on the strength of that riser.

Jerking the riser straight up as hard as I could, I shook it repeatedly against the twenty-five pound weight of the packed parachute. The sudden yanks and shakings were only a fraction of the shocks that the riser would get when the parachute's canopy snapped open.

The cords, of which the riser was made, separated, and several cords were shredded. Here was another case where dampness and rotting had weakened an emergency man-carrying parachute into dangerous uselessness. Yet, the parachute had been tagged as 'serviceable'.

The General stared at the shredded strap and then, at me. He said, 'Thanks, son.' The Colonel, who had escorted me to the General's office, motioned to me and pointed at the door.

As I left, I heard the General say; 'I want a personal message on this from me to Hap Arnold'. General Arnold was the Commander of the Army Air Corps worldwide during World War II, and reported to the President of the United States.

I returned to my job. The quality of parachutes and other survival gear that arrived at Hickam Field from the Mainland quickly improved.

Serious defects in design, operating instructions supply, maintenance, and acquisition of aircraft and their components were also found in other types of equipment and methods used by the U S Air Force. When the fighting part of the war was over, I was assigned to a work group that gathered evidence from technicians, engineers and administrators on what was wrong and to write reports that went to engineers and managers at higher headquarters. They would do what was required to get the problems solved and, when appropriate,

issue correcting technical instructions to the reporting field activity or USAF-wide. It was during that experience that I began to plan the 'checklist' that is presented in the following memoirs about (a) fixing mistakes in the workplace, and (b) supervisory inspection of the work unit.

MEMOIR: CHECKLIST - FIXING MISTAKES IN THE WORKPLACE

Grandparents and middle-years or older adults generally have technical and professional skills, are mature-minded, and form a constantly replenished technological and cultural resource. Their capabilities and perceptivity are the result of many years of hands-on, supervisory or management experience in a trade or profession, tempered by practical interactive human relations. It is characteristic in almost all species that survive by more than instinct that the experienced pass their knowledge along to the young whenever the time is right for them to do so. The urge to pass knowledge forward to a succeeding generation is ingrained as deeply as instinct. Older adults, as grandparents or otherwise, will always do what older adults do best: working with, guiding, and mentoring youth. Fixing mistakes, learning from the process, and passing forward what was learned is inherent in survival of the species.

I presented an earlier version of this memoir's contents as a United States Small Business Administration 'Management Aid for Small Manufacturers,' number 242 'Fixing Production Mistakes' published in March 1979. I've reworked the text since and occasionally email copies in response to requests. The checklist may be useful in Regional Occupational Programs (ROP) and supervisory and crew chief training.

Correcting a mistake starts with understanding what went wrong.

One rarely reads a newspaper without noting a report about a foodstuff, medication, or device on the market or in use for its intended purpose, was recalled by the manufacturer. Whatever it is, it was not doing the task for which it was intended or designed, and continued use might risk life, quality of life, or property.

For example, a national business newspaper reported that a motor vehicle manufacturer was recalling more than 100,000 vehicles of various models. The reason was faulty secondary door latches, and an electrical harness support device in which an electrical short might occur, possibly causing a fire.

Faulty manufacture, construction, inspection or training in any function concerned with manufacturing a product or providing a service all too often have serious consequences.

What follows is based on my Inspector General experiences in tracking compliance with 'corrective action' commitments for mistakes and deficiencies at a major military industrial facility. The errors had been noted and reported on by higher headquarters and private sector technical and management inspection teams.

Management and technical inspection and other oversight methods have changed significantly with computerization. Nevertheless, mistakes still happen, at times the same as before computerization, and they continue to happen. Management oversight and controls over fixing mistakes and their causes need to keep abreast with the analyses of a mistake's occurrence, its complexity and safety implications, and other immediate and ripple effects of the event. Useful ideas on preventing and fixing mistakes need to cross feed across all elements and levels of our society. Ignoring cross feed escalates the unconscionable waste of the nation's and the world's resources and could increase needless loss of lives and property.

In my work as an Inspector General's analyst at a major Air Force logistics base I prepared a checklist of elements to be considered in planning corrective actions for mistakes in various supply and maintenance shops. I discussed and distributed the checklist during seminars that I conducted on the subject for crew chiefs and first and second line supervisors. My hope was that the check list would also be useful to managers, line-and-staff supervisors, procedures specialists, product-line workers and crew chiefs, and teachers and students at vocational and other schools of public and private sector enterprises and institutions. The checklist

was subsequently published by the Small Business Administration as Management Aid MA242 Fixing Production Mistakes and widely distributed to industry, libraries and vocational schools.

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The checklist suggests a few of the many steps and considerations that go into preparing for and following through on a 'fix' for a mistake in manufacturing, support, services, or other operations in the work place. Record keeping has improved with the computer; but it's still up to people to think the problem through, arrive at resolutions, and ensure that the fix is implemented and effective.

The options are shown in checklist form and any one of them may or may not apply to a specific situation in a shop or office. The fact is that any one mistake, and its causes and effects, as a collection of distinct but interacting events, is unique and needs to be addressed in that context. There is no general all-purpose after-the-fact corrective action plan, nevertheless, generalized contingency planning, for example, in the form of a documented Practice on getting organized around the corrective action job would be useful. The objective is to (1) fix the mistake, (2) keep it from happening again, and (3) integrate what was learned from the experience into the organization's existing engineering and other production functions, training and other management systems.

Although the mistake (event) and the fix relates to a manufactured product, the options (check list elements) might be applicable or adaptable to public and private sector construction, health care, support and services, general administration, and other functions and processes, as appropriate to the reader's interests.

The coverage given here is intentionally general; no two manufacturers, institutions, service entities, down to their first line work sites are exactly alike in their tasks, equipment layout, skills, environment, human factors, staff and supervisory personalities, etc. The interaction of all of these factors, within and outside the work unit, affects how an approved fix is installed and how it works out. The planning for and integration of a fix (the clarity of procedures and sequencing of who does what and when) takes into account the uniqueness of the problem and the work site or station.

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Mistakes challenge a leader's sense of order. Timely and effective corrective action may be vital to the safety of a product, the welfare of consumers, and the stability of the organization in which the mistake occurred.

Each product, its design/production system and support functions have unique characteristics. Fixing a mistake that results from the manner in which these and other unique characteristics are organized or operate needs to consider all of the elements that contributed to the circumstances and environment within which the mistake occurred. The most immediate task, beyond safety to life inside and outside the workplace, is to organize available skills and resources so as to pinpoint the cause of the mistake; determine, specify, and correlate the steps of a corrective action, implement the fix, and reduce the likelihood of the mistake's recurrence.

The Checklist is a Tool of the Corrective Action Team

Several thousand units of a newly designed device, manufactured in one plant, were found to have a defective part. The first-level assembly, into which the defective part was initially installed at a product-line workstation, had then moved on to subsequent workstations where they were incorporated into higher-level assemblies. Eventually, the assembly, with the defective part still installed, made its way through final assembly.

Several hundred completed devices (the end items), incorporating the defective part, were in

post-final-assembly. They were in holding areas, on their way to or already in the shipping department's temporary storage warehouse, or had been loaded on to shipping vans of which the drivers were finishing up paper work to depart for destinations throughout the country to deliver the finished devices to wholesalers, distributors, or ultimate retailer. Another several hundred devices had previously departed the plant and were in the transportation pipeline, at dealers and retailers, or in the possession of consumers. Each completed device (the manufacturer's end item) and its outer shipping container had its own visible serial-number identification.

ANALYSIS

- What was the mistake?
- Did a part break, crack, bend or misalign?
- Was a circuit incomplete?
- Were incorrect materials used or dimensions applied?
- What really happened?
- Have you and concerned supervisors and staff examined physical evidence of the mistake?
- Do you know where in the plant the mistake actually occurred?
- Have you pinpointed and brought to the attention of the management and production staff the specific work unit and workstation where the error was first noticed?
- Did you backtrack along the production line to the workstation and employee where the mistake was made?
- Did you track the mistake forward along the production system to ascertain the extent to which the fault was included in higher assemblies?
- Did you stop the work operation that was creating the mistake?
- Should you institute a work stoppage?
- Did you identify the people, skills, materials, tools, equipment, and data in all related programs, work practices and procedures that caused or contributed to the mistake?
- Do you know which were directly responsible?
- Do you know which were indirect contributors?
- Do you know how they became part of the approved design, vendor support, and/or production process?
- Have you identified where (functions, work units) and with whom (supervisors) the accountability lays?
- Must you correct the mistake on the completed/shipped end items or on items on which rework would be economically or technologically unprofitable or impractical? In answering this question have you considered?
- Safe and economical use of the final product by the ultimate consumer?

- Acceptability under established quality standards and the governing technical specifications and contracts?
- The effect on the part's and the end item's service life?
- Maintainability and accessibility of the part in the end item during normal usage?
- The effect on the cost of operating the end item, and reducing the time between maintenance inspections, parts replacements, and end item overhaul schedules?
- Have you reviewed the design specifications to ensure that the (consumer's) intended use of the device has not been compromised by the defective part?
- If the error will not cause significant deviations from approved drawings, technical and contractual specifications, should you review the situation with the customers (consumers) before taking any further action on those items that now incorporate the defect?
- Should you impose a work stoppage on the affected product lines?
- Do you know what the effects of a work stoppage will be on?
- The affected product lines and the shop activities that support them?
- Your contractual commitments?
- Do you have alternate workloads that can be readily inserted into the production line gaps until a corrective action decision for the mistake can be implemented and routine production continue?
- Were parts, assemblies or end items incorporating the error shipped from your plant and/or are they in your packaging/ shipping departments being prepared for shipment? If they were/are:
- Have you estimated the effects of the mistake on the market place?
- Have you estimated the effects of a decision to recall the defective items from your customers, dealers, and consumers?
- Should further preparation for shipment (preservation and packaging) of the item be halted?
- Are trucks or freight cars now being loaded by your shipping department with items that contain the production error?
- Should the shipments be halted?
- Should the shipments be off-loaded?
- Do you know the effect of a stop shipment order on the customers/consumers who are scheduled to receive the items?
- Do they have sufficient stocks on hand that do not contain the error to tide them over the re-work period?
- Should you permit shipments to continue and then dispatch technicians to replace or repair the defective parts at the customer's/consumer's holding facility or maintenance and/or operating site?

- If the defective items have been shipped to distributors and from them to ultimate consumers, can you identify all shipments that incorporate the production error by customer/consumer, shipping order number, method/date/time of shipment, and any other means that will assist the recipients to locate and, if necessary, segregate defective from useable stocks in their warehouses, dealers' stocks and in (consumer's) possession?
- Have you issued instructions to cover the situation?
- Have you confirmed that your instructions were followed?
- Based on your analysis to this point, should the recipients of items containing the defective part be notified?
- If notification is to be made, have you issued instructions to do so and are your instructions clearly understood?
- Have you and your legal advisors reviewed the notification for adequacy, including legal and contractual implications?
- Do notification procedures include recording date/time/method of notification and names of individuals originating and receiving the communications?
- Are you certain the notification was received and understood by the intended recipient?
- If you have imposed a work stoppage on the affected items and stopped further shipments, do you know your shipping commitments for the next 24, 48 and 72 hours?
- Should the recipients for those shipping commitments (preceding question) be notified of the delays, lead time until the situation can be clarified, and when a new shipping date will be provided? Was this step followed up with the notification of a new shipping date?
- If the faulty items are to be recalled to the plant, can shipments in the transportation pipeline be diverted back?
- If they can be returned, were instructions to that effect issued, and has receiving function prepared paperwork for the non-routine receipts and for their segregated storage until shop processing can be accomplished?
- Should you arrange with your customers for them to rework the defective items in their service support shops or contractually?
- Would it be more practical for you to send your technicians to do the rework on site, considering your customer's resources (time, special tools, equipment, replacement parts, materials, skills, calibration), the economics of the situation, and your company's reputation?
- Have you identified and analyzed your options for each location where the fix will be made? Have you listed them and evaluated their interactions?
- Have you evaluated the effects of your decision to fix or not fix?

IMPLEMENTING THE FIX

- Identify the factors and decisions that would bear upon the corrective action process for that particular manufacturing mistake.

- List, in check-list form, the considerations and options that would enhance management's understanding of the exact nature and significance of the mistake and its effects on the pipeline, wholesalers, other points in the transport/warehousing system, consumers, vendors of components, and you, the manufacturer.
- Review relevant policies and procedures; activate the plant's corrective actions task group; designate and appoint a task group leader; prepare a comprehensive corrective action plan; select subordinate (function) leaders, production staff and line crew chiefs, technicians, and line workers; design and procure or manufacture replacement parts; marshal tools, equipment and other resources; designate and commit work stations, and implement the approved 'corrective action plan.'
- Notify and make/secure commitments to/from concerned entities that are located outside of the plant. Integrate the fix and what was learned from the experience, into the organization's management, engineering (RDT&E), procurement, production and supporting management systems to preclude the mistake's recurrence.
- Have you considered the demands that will be made on and the adequacy and availability of your:
 - Plant facilities (structural and environmental)?
 - Finances/accounting?
 - Energy sources?
 - Communications systems?
 - Transportation?
 - Public relations and marketing?
 - Shop equipment and tools available and tested?
 - Supplies and long-lead acquisition time materials?
 - Data?
 - People (skills, training, safety, working hours, etc.)?
 - Resources in other functions that will be involved?
- Can the faulty assemblies be processed economically for tear down to get at and remove the defective part and then to return the remaining (good) parts to your routine production system without disrupting the product line?
- If not, do you need a special, one-time production task group for the defective sub-assemblies to do the tear down, repair, and re-assembly job?
- If, after teardown, the parts (minus the defective item) can be returned to routine production, have you identified the points along the production system where each good assembly and/or component can be re-checked and reused?
- Have you identified all the work units and workstations that will be directly affected by the rework of the faulty items?

- Do you know precisely how each will be affected?
- Do the supervisors and direct workers of those work units and at each workstation understand the problem and what is expected of them?
- Have you ascertained which work units and workstations can be by-passed during the fix to minimize disruption to routine operations and production and thereby reduce cumulative adverse effects?
- Will the fix make it necessary to?
- Realign workspace?
- Move shop equipment?
- Modify tools and equipment?
- Fabricate jigs and special holding devices?
- Redesign parts and assemblies?
- Revise quality assurance standards and procedures, and production practices? - Retrain people?
- Reschedule and reprogram other work?
- Modify contracts with suppliers and customers?
- Does fixing the mistake call for a documented Corrective Action Plan, commitment of significant resources, and detailed production scheduling?
- Can the corrective action taken as a result of this error be applied to future designs, and management policies and practices, and for production system improvements elsewhere in your plant?
- Has this experience given you ideas to improve your operations?
- Have you documented what you learned, tested them, and injected the results into your plant practices?

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A corrective action plan is forward-looking: it specifies the action steps and their sequence for fixing the defective items and the changes that need to be integrated into the product line management system. It is positive-oriented and concentrates on the fix to the exclusion of looking back for who did what and why. The investigative and blame job is not planning and belongs to another group.

As a manager, supervisor and leader, take that extra step that prevents the same or comparable mistakes from happening. What really caused the problem? What can and should be done about it? Is a significant change needed in tools, equipment, or materials? Should the shop layout be changed? Do workers need additional training? Are product inspection and quality assurance skills, methodologies and standards tight enough? Are you using the right vendors? The mistake and its underlying causes that were resolved at one shop location could provide opportunities for a significant technical or management improvement throughout the plant. Have you and your staff thought through the possibility of recurrence, and have you done something constructive to preclude its happening?

MEMOIR: THE FIRST LINE SUPERVISOR INSPECTS THE WORK UNIT

I drafted this procedure in the 1960s when I was a management analyst on the staff of an Inspector General at an Air Force logistics depot in California. The concept, and its implementation, was presented at seminars attended by the activity's crew chiefs and supervisors.

The concept and process lends itself to computerization in sequencing steps in planning, committing and pre-positioning appropriate tools, inspection equipment, periodic servicing and replacing materials, parts and lubes, in conducting follow up, and as a guide for training and motivating supervisors, crew chiefs, and participants in Regional Occupational Programs generally.

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A first-line supervisor's inspection of his/her work unit will vary according to the unit's mission, layout, equipment, and product or service. The information may interest students who are training for a skill or vocation as a career, developing their managerial skills, or who are preparing to establish themselves in a business. It may also be useful to businessmen and women who are refining their supervisory training courses and the quality of their production environment. The objective is an optimal work environment with employee safety and satisfaction.

The supervisory inspection is an on-site, searching examination of the operating level of a work unit, its internal environment and its operating systems. The inspection is conducted by the unit supervisor who is directly responsible for the work unit or, where special skills are required, by technicians or administrators who are under the unit supervisor's surveillance during the inspection.

The inspection checks for compliance with the company's and the supervisor's policies and accepted work practices. In the process, deficiencies that need early attention are identified and acted upon.

Examples of where expeditious actions might be needed are those that would prevent damage to or failures in product, equipment and material, reduce or eliminate a potential safety hazard, or modify an environmental condition or operational practice to meet a new requirement. The inspection technique draws upon, and enhances, the experience of managers, supervisors and technicians at all levels. It also provides higher-level superiors with a means to evaluate a subordinate supervisor's capabilities and judgment.

The objectives of a supervisory inspection are to:

- detect existing and potential errors as close to the points of origin as possible so as to protect property;
- verify adequacy of work unit procedures and controls; and ensure compliance with safety directives.

The indirect benefits of the inspection are opportunities to:

- observe conditions that have diagnostic value, such as identifying barriers to mission accomplishment and operational effectiveness;
- assess consequences of changes brought about by new policies, procedures, and corrective actions for previously noted inadequacies;
- enhance supervisory and staff familiarity with company objectives, policies, and operations;
- promote beneficial communications (especially where actions on an inspection-disclosed problem depend of the support of others outside of the unit in which it was found); and

- motivation.

ADOPTING THE PROGRAM

The adoption of a formal supervisor's inspection program is an upper-management decision. The decision should be based on a comprehensive staff analysis of the costs, benefits, and operational for and against factors of the program in relation to the size and character of the organization and its mission; the nature of facilities and equipment, and the technical expertise and existing motivation of first-level supervisors.

Promoting supervisory expertise and motivation takes into account the quality and potential of each supervisor based on knowledge of the work area(s) under his or her supervision. They include ability and willingness to accept and integrate new, approved techniques of administrative and/or technical skill; and competence in exercising authority (conditional, of course, on the scope and level of authority delegated by superiors).

Advance planning and detailed preparations are essential for proper program implementation. It is advisable to issue a statement of general policy as soon as possible after a decision to proceed is made, so as to preclude the spreading of rumors that might distort the intent of the program. It may be necessary to introduce the concept in stages, down through the levels of supervision.

In planning the inspection program, the manager takes into account that two work units are rarely exactly alike. For some units or functions (administrative or clerical operations, for example) an inspection of the physical facility may not be needed, or, because of the simplicity or stability of an office layout, may be left to the discretion of the supervisor. Conversely, the operating unit in shops, warehouses, motor pools, power distribution centers, construction sites, or dams are unique to their functions and will need to be treated accordingly when devising inspection ground rules. Furthermore, those work areas in which heavy traffic, high densities of people and/or equipment, or safety (of people and things) are significant factors may require examination at frequent and, perhaps, random intervals.

For some work units, an inspection can be conducted in a single sweep. For others, it might be best to spread the review over days, or even weeks, so that different systems, operations, locations, or equipment could be seen at those times when an inspection would have the optimal potential to detect weaknesses. Circumstance may dictate that an inspection occurs before the normal work period begins or after it ends, since work routines might render the area inaccessible for inspection purposes.

Inspection policies should allow sufficient flexibility, without weakening controls, to permit each supervisor to adjust his/her inspection schedule to the priorities and character of the unit. Each supervisor's inspection schedule would be subject to the approval of the next higher level of supervision. There should be no confusion on one point, however -- a supervisory inspection is a tool of the supervisory chain of command. It is not a quality assurance inspection of product or service, nor does it replace, duplicate, or infringe on the organization's staff management inspection and audit systems.

IMPLEMENTING SUPERVISORY INSPECTION

The inspection system should be organized around accepted criteria: approved management policies and directives, personnel management guidelines, health and safety standards, security controls, inventory management systems, facility and shop equipment authorization lists and layouts, and other rules and procedures that govern daily operations. The supervisor will need to be selective in his/her decision as to which criteria are the most appropriate for his/her work unit.

Decisions may be required on the practicality of maintaining an ideal qualitative level in a work environment or an operational process. In some situations, the nature of the mission or service may permit no options; in

others, many options may apply. The upper and lower limits of acceptability are management decisions, as are the decisions to act when the inspection discloses significant deviations from established norms.

The inspection process will, on occasion, focus attention on problems beyond the capability or authority of the person(s) doing the inspection. Organizational procedures should present clearly defined channels for such problems to be referred quickly to that level of management with the power to take appropriate action. In most situations, normal administrative follow-up will ensure that effective action is taken. However, in instances where multiple actions are required, or where significant costs may be incurred, it may better serve management's purposes to have documented reports to facilitate analysis, assign responsibilities, schedule actions, and exercise control. Management should also consider disseminating summaries of important disclosures and resultant actions to those units or functions in which comparable conditions are likely to prevail.

THE INSPECTION GUIDE

A vital tool for the supervisory inspection process is the inspection guide. This guide gives comprehensive coverage to each supervisor's area of responsibility. To serve its purpose, the guide should be flexible in scope and depth. It should be easy to revise to meet changes in organizational procedures, technology, or facility arrangements. It should be understandable to the supervisor's superiors, since they will review it for adequacy, controls, and results.

THE GUIDE CONSIDERS:

- Items (what to look at): equipment, facilities, tools, energy systems, security, communications and transport networks, supplies, materials, people, data and publications files, incoming and outgoing services that support the work unit, reporting controls, training.
- Observations (what to look for): safety in keeping with approved plant security and safety directives and experience, performance, condition and arrangement of tools and equipment for conformance with approved plans and specifications, compliance with preventive inspection and maintenance guides (see Note); availability of administrative and technical resources in accordance with authorizations, work backlogs and current validity of the reasons, causes of unacceptable stop-and-go operations, work stoppages and equipment downtime, status of skills upgrading and training to meet upcoming work requirements, effectiveness of internal communications systems, morale and discipline, currency and availability of operational directives, accuracy and timeliness of unit reports, disposition of nonessential records.
- Conditions (what was found): OK, damaged, unsafe, worn-out, surplus/shortage, unsuitable, unenforceable, unclear, out of place, out of sequence, late calibration checks, not authorized, nonstandard, obsolete, not being complied with, in violation.
- References: organizational directives, numbered or otherwise identifiable specifications covering facilities, equipment and tools; manufacturer's operations manuals and parts catalogs, documented safety and security practices, unwritten but widely-accepted work and shop housekeeping practices, historical inspection records.

The format of the inspection guide should be as simple as possible. It should confine itself to uncomplicated headings that provide unit title, location, name and telephone extension of the unit supervisor (or technical inspector), and the date/time of the inspection. When the inspection is phased over a period of time, the date/time entry should be adjacent the corresponding inspection item. At the discretion of the inspector, abbreviations used can be defined to facilitate review by others.

The main body of the guide includes the specifics of what to look at, when (how frequently) to look at it, and what to look for. Findings are recorded for each item. The inspection items should be expressed in specific

terms. For example, it would be unacceptable to use general questions, such as: 'Are we complying with all safety rules?' 'Are all reports being made?' 'Is equipment satisfactory?' Instead, taking the matter of safety as an example, the guide should state important safety requirements by location within the unit and indicate what would constitute compliance. Thus, the guide would lead the inspector directly to items requiring review and any adverse findings would automatically trigger action. (See Exhibit)

NOTE: PREVENTIVE INSPECTIONS AND GUIDES

The supervisory inspection should not be confused with the routine preventive inspections of facilities and equipment for normal maintenance purposes. Preventive inspections are conducted by specialists or craftsmen using checklists and prescribed test sets and calibration tools specified by equipment manufacturers and facility engineers/technicians. The supervisory inspection is concerned, rather, with the entire work unit as an integrated entity comprised of people, materials, facilities, equipment, and management systems. Its prime concern is the ability of the unit to perform tasks in a designated environment, which may, at times, be different than when or where it was intended to function.

The adequacy of the preventive inspection system within the unit is only one of the many elements of interest in the overall inspection process. Both processes, however, are of a 'preventive' nature. Using preventive inspection of equipment as a case in point, the supervisory inspection might determine:

- whether preventive inspection data for equipment located in the unit is available;
- whether the data has been updated to correspond to the unit's equipment modernization schedule;
- whether inspection guides contain the essential elements of information on technical requirements (i.e., steps to be followed in the preventive inspection process, frequency of inspections, records, tolerances, identification of tools and test sets, suggested skills to be applied, repair and maintenance procedures);
- whether prescribed inspection and maintenance tools and test sets are on hand, and are verified as calibrated for their preventive inspections use.

CONCLUSION

The supervisory inspection, as a management technique, places emphasis on direct, disciplined application of the supervisor's traditional responsibilities. They include, as a minimum: to analyze the mission of the work unit and the availability of resources and capabilities, and to determine what is required to provide satisfactory product and service for the organization.

The inspection will help to nourish and fine-tune supervisory ability to bring about a clearer awareness of what is needed to get the job done. A carefully planned and implemented supervisory inspection program will enhance supervisory abilities and discipline, enforce the sense of responsibility, contribute to team-oriented operations and, in the process, significantly reduce the conditions that lead to errors, deficiencies, and waste of essential resources.

EXHIBIT:

Elements to consider for a Supervisory Inspection Check List

Entry Codes:

ok = satisfactory

x = unsatisfactory

xx = unsatisfactory/needs immediate attention

inc = incomplete

dlnqt = delinquent

Inspection Schedule d = daily

w = weekly

m = monthly

6m = semiannually

ar = as required

d# = daily, and to be observed at opportune times whenever passing through shop

sp = special advance preparations

EXAMPLES OF THINGS TO LOOK AT:

Technical: Guards installed on machinery and power equipment; electrical power equipment grounded; preventive inspection records up-to-date; metal containers in place for oily rags; metal disposal cans marked according to contents; workers not wearing loose clothing or hand/neck jewelry; eye and head protective gear being used; engineering and manufacturing data for work orders are on hand and were checked against work orders.

Housekeeping: Work areas clean; fans in working order; clean-up equipment on-hand; sand buckets, filled; fire extinguishers in place and current.

Administrative: Downtime/backlog/equipment location reports current; equipment Tech Rep scheduled for preventive maintenance on machines nrs 123, 345, and 456; in-house preventive maintenance reports complete; tool crib stock in hand report in, materials requisitions reviewed; skills upgrading reviewed with Training Dept; Policies and Practices Handbook current with latest Index.

MEMOIR: PRIORITY ACQUISITION OF PARACHUTES FOR THE KOREAN WAR, HQS AIR FORCE LOGISTICS COMMAND, WRIGHT-PATTERSON AFB, 1950

This memoir recounts a decision I made at the breakout of the Korean War and its context. The issue was an urgent priority for the acquisition of 50,000 aircrew emergency bailout parachutes for United States Air Force-NATO operations in Korea. Chronology and types of USAF aircraft operating in the Korean Theater at the time are based on personal recollections and references available from public libraries and the Internet. Opinions are those of the writer and not necessarily those of military or civilian personnel of the United States Air Force or the Department of Defense.

The technical design and operation of military man-carrying parachutes evolved rapidly after World War II, as did parachute servicing, packing and maintenance methodologies. The Korean War, five years after the end of WW II, began generally with WWII weapons and equipment, much of it overage and obsolescent. Where significant shortages of vital equipment existed or were otherwise considered certain to occur, urgent

procurements were initiated, taking into account manufacture 'lead time' and supply and maintenance pipelines to the troops.

DECISION

Rather than procure the 50,000 man-carrying parachutes as complete assemblies, e.g., in which the canopy's suspension lines are permanently linked to the harness and, through the harness, to the canopy container (pack), as in the past, the procurement I initiated in 1950 was by major components. The components would subsequently be assembled into standard types of complete parachutes by certified technicians at Air Force Materiel Command supply and maintenance depots or certified parachute maintenance shops to meet priority needs in Korea and other support activities.

CONTEXT

In 1949, the Secretary of Defense Louis Johnson cut back radically the Armed Forces' programs for weapons and support systems. The Korean War, in which the U S S R and Communist China openly supported and militarily joined North Korea against the United Nations, was launched the following year.

In the early '50s, Hqs AFMC had Command jurisdiction of 8 major industrial depots and at least an equal number of sub-depots and special activities throughout the continental U S and in foreign countries (Europe, Philippines, Japan, Middle East, North Africa, etc.)

For several years following the end of WWII and creation of a separate U. S. Air Force the logistical missions, organizations, and personnel policies for active duty military and civil service personnel experienced important changes in their management, location, and performance of functions. The changes were reflected in chain of command, consolidation and/or wholesale reassignment of materiel property classes, Hqs components and field organizations, transferring or eliminating low priority workloads and assuming new missions and industrial workloads. Concurrently, the worldwide Cold War and its effects steadily increased in scope and intensity throughout Europe, Africa, and the Far East. Widespread and ongoing post-WW2 reductions-in-force among military and civil service personnel accompanied a nationwide conversion from war to civilian economies.

In 1950, shortly before US military action in Korea (see June 30, 1950 under Time Line), I was assigned to supervise several supply technicians. The primary function of my group was to determine USAF worldwide requirements and distribution for emergency survival equipment which included parachutes, aircrew emergency life preservers, emergency survival kits and their components, and other aircrew personal emergency gear for USAF-worldwide.

Parachutes in the possession of USAF field commands and in back-up supply warehouses at that time had been procured for WWII, which had ended 5 years previously. An unknown quantity of parachutes in warehouse storage had been declared excess to requirements or were close to their maximum authorized 'years in service since dates of manufacture' (the date of manufacture was stamped on the canopy). At the 'maximum' age of 7 years, personnel parachutes were, by USAF regulation, to be removed from further service for aircrew emergency bailout, although they could be used for cargo drops.

Computing quantities of serviceable parachutes and spare parts to be on hand for the USAF active and programmed aircraft inventory was made by type of parachute, e.g., seat, back or chest as applicable to aircraft types. Parachute selection depended on crewmember or passenger stations in the aircraft, space available in cockpit and cabin, access to and through emergency exits, and the aircrew member's weight, e.g., aircrew or passengers above a certain total weight (body weight plus flight clothing, emergency kit, flotation gear and the parachute) were entitled to a parachute that incorporated a larger diameter canopy.)

Based on type of aircraft and aircrew stations (or special circumstances) the harness of a 'quick attachable chest chute (QAC) might be the choice and the canopy pack hooked on to the harness before bailout.

Requirement computations for parachutes took into account quantities in service by type (back, seat, and chest), in the pipeline, and in back-up warehouse storage (serviceable and repairable). Information on quantity and condition of parachutes in storage was not reliable in the years immediately following the end of WWII.

Translating a requirement into acquisition called for justifying funds, ensuring that procurement and manufacturing specifications and tech data were current, and initiating and monitoring acquisition documents. New production parachutes from a commercial source received an acceptance inspection before being shipped to a USAF regional or property class depot or directly to the base supply activity where the requirement existed. There, the parachutes was scheduled to the base parachute shop (part of the Maintenance function) where it received an Air Force directed technical inspection, aired, pre-pack scrutiny, packed for service, a post- pack inspection, and returned to 'Supply' to complete the requisitioning transaction.

USAF parachutes procured from a commercial contractor (manufacturer) are normally shipped unpacked (that is, with the canopy rolled up loosely in the canopy container (pack) and the 4 webbing harness risers permanently connected to the canopy suspension lines by 4 stainless steel links; six suspension (shroud) lines tied and permanently stitched to each link. When suspension lines and harness webbing are so stitched, undoing the stitches weakens reliability at vital points; damaged suspension lines and harnesses must be replaced.

Upon requisition for a 'packed-for-service' parachute the Supply warehouse sends the (unpacked) parachute to a base maintenance parachute shop where it is inspected to ensure that all required parts are on hand and free from damage and defects, and current with latest technical and modification instructions. Normally, the parachute canopy is aired for at least 24 hours in a parachute loft, re-inspected by the certified rigger who will personally pack it for service. A security breakaway-thread and lead seal is pressed over a knot where the forward ripcord pin passes through the pack-closure flaps-retaining cone.

The servicing and packing log, which is marked with the same USAF serial number as the parachute pack and canopy, is signed by the rigger and inserted in a pocket on the pack assembly. The packed parachute is inspected externally by a certified inspector and/or supervisor and returned to supply as 'ready for service.' During WWII and on into the '50s USAF military and civil service certified parachute riggers accomplished these procedures.

TIME LINE

The following events on the Korean War time line had logistics implications.

-- 1948 April 8 - US troops ordered withdrawn from Korea on orders from President Harry S. Truman.

-- 1949 June 29 - Last US troops withdrawn from South Korea.

-- 1950 June 30 - President Truman orders US ground forces into Korea and authorizes the bombing of North Korea by the US Air Force. US troops are notified of their deployment to South Korea.

The morning following President Truman's order to the Armed Forces to initiate military action in Korea the military chief of the Hqs AFMC Equipment Division, Directorate of Supply, strode along the 'supervisors' row in the office where I worked. He was accompanied by my Branch Chief who was responsible for specified categories of military equipment and supplies, including those assigned to me. Pointing to each supervisor (or desk if it was unattended at the moment) the Division Chief briefly consulted with the Branch Chief, then read off a dollar amount from a spreadsheet he held in his hand. The dollar amount for my area of

responsibility was \$25 million -- as a starter.

Immediately upon the Division Chief's departure, the Branch Chief assembled his subordinate supervisors and directed that the \$-amounts cited were mandatory totals for Purchase Requests (PRs) from each to be his office at the start of business the following day. He would review them and, upon his approval, have them hand-carried to the Division office. The PRs were to be for most urgently needed equipment and supplies to support current and 'programmed' USAF operations in Korea.

PRIORITIES

My highest priorities for USAF in Korea were aircrew parachutes, aircraft emergency life preservers, aircrew emergency bailout survival kits (attached to parachute harnesses), oxygen masks, and components ('components,' for instance, took into account that inflatable life preservers are not much help to an aircrew member floating in the sea if the CO2 inflation cartridges had not been checked and installed or had been discharged for an unauthorized purpose. Life vest checklists directed that inflatable life vests would be examined by the wearer or a technician before donning to ensure that the mouth inflation tube connections and CO2 cartridges and emergency inflation levers were intact. It was not unusual to find that the CO2 cartridges were missing or the cartridge seals punctured.

Insofar as personnel parachutes were concerned, 'components' double-checked included ripcords (pins bent, pull cable for burrs or kinks), pilot chute spring action, harnesses, canopy containers (packs), seals on emergency kits, etc.

As US-UNCommnd forces in Korea intensified combat operations, the urgent need for parachutes, aircraft life preservers and other survival and escape-and-evasion gear increased. The United Nations Command (UNC) included the United Kingdom, Australia, South Africa, Belgium, Greece, Canada and Thailand and other nations.

USAF aircraft in the Korean Theater included the P-51, F-80, F-82, F-86, B-29, KC-50, C-46, C-47, C-54, C-82, C-118, C-119 and C-121 and more.

The F-51 (Mustang) role in Korea was ground attack. The F-80 (Shooting Star) was the first operational American jet fighter and a major weapon system of the Korean War. The F-80 recorded the first USAF aerial victories in June 1950. The F-80's high accident rate in the early years of the war was attributed to pilots familiar with propeller-driven aircraft transitioning to the faster and more powerful jets. The F-80 was used for ground support after it was replaced by the F-86 in air superiority tactics. In effect, the USAF was experiencing a major transition from relatively slow propeller-driven to much higher speed jet aircraft - in the middle of an intense air war. The transformation involved upgrade training for jet aircraft air and ground crews, line and support shops technicians were in practically OJT (on the job training), revamping test and maintenance facilities, acquiring and shipping maintenance new tools and equipment, skills, procedures, tech data, etc. Among these drastic and far-reaching changes, parachute compatibility with aircraft was one among thousands.

The F-86 jet had entered service in 1949, about one year before the start of the Korean War. Hundreds of F-86s and other aircraft, as well as aircraft support and personal equipment were provided to allied nations under the Mutual Defense Assistance Program (MDAP).

The total additional quantity required for USAF's immediate needs in Korea and for other developing or programmed USAF operations worldwide was 50,000 parachutes plus spare parts. The U S was well along in its conversion and retooling to a civilian economy that would concentrate on meeting the pent-up needs of the populace. A one-shot relatively short-duration production program for a distant 'police action' did not represent a sound investment to industry.

Considering the time required by prime contractors to reactivate (actually to recreate) product lines, install manufacturing equipment plus acquisition of materials, parachute hardware, manufacturing tools and skills; acquire components through outsource or in-house-manufacture, and lead time to integrate production and assembly, and ship complete parachutes, etc., was much too long. It got down to how many of each type parachute (seat, back or chest) was most urgently needed, and how could we get the right types and number of parachutes to where they had to be. What was the mix of parachute types to be procured commercially, checked through the USAF internal quality assurance process, and shipped (packed or unpacked based on circumstances) to meet Korean Theater needs in a combat environment and rapid changes in the Theater's types of aircraft?

A 'complete' parachute, as procured during WWII consisted of all of its components assembled and permanently connected to each other, except for the pilot parachute, ripcord, and 6 bungee/hook assemblies, all of which were installed by the rigger during the pack-for-service process. When the shroud lines, canopy and pilot 'chute are folded into the 'pack' (container) and the flaps brought up from the sides and over to enclose the canopy, the ripcord pins are inserted through holes in the cones that were brought up through grommets.

The bungee (elastic) cords are hooked to eyes along the packs frame so that they snap the flaps back when the ripcord is pulled to clear the way for the pilot 'chute to eject and draw the main canopy out to full extension. The ripcord cable is run a sleeve of which one end ferrule is fastened to the harness webbing and the other end to the pack side flap in line with the canopy release cones. When the ripcord is pulled, the direction of its withdrawal is from the canopy pack across the wearer's chest.

Based on my experience in parachutes and survival equipment maintenance generally I concluded the best approach would be for several contractors to provide USAF with canopies, harnesses and packs as components. Ripcords, pilot chutes, bungees, etc., could be procured independently from qualified sources and from the tens of thousands of each item that were still new in USAF supply warehouses, excess from WW2. The AFMC depot and/or operating wing's Supply function and Maintenance certified parachute riggers would take it from there and connect the canopies to the right harnesses and packs for the job, pack for service, and get the parachutes to where they were needed.

I initiated the Purchase Requests, and received quick coordination on technical accuracy of procurement data from the parachute engineers and Maintenance technical services. The Purchase Requests, to my knowledge, were approved by the oversight authorities.

Some time later, I was criticized by top management for my initiatives and notified (informally) that an 'action' against me was likely. As it turned out, I was 'transferred' to the Hqs AFMC Directorate of Maintenance to review draft Air Force specifications for 'maintainability' on new types of survival equipment for which procurement was planned, to analyze deficiencies reported from the field on aircrew emergency gear, and to write field maintenance manuals and technical orders.

About a year or so after my transfer from the Directorate of Supply the employee who took my former job told me, in the presence of my former staff, that my 'decision' for parachute procurement had been 'right.' I didn't ask for details.

MEMOIR: COLD WAR CONTINGENY PLANNING: NOUASSEUR AIR BASE, MOROCCO 1953-1956

The Cold War between the United States and the former USSR began in the mid-1940s and extended over the following half-century until the Soviet Union dissolved in the early 1990s. The Cold War's cost to the United States exceeded \$8 trillion. More than 110,000 American military lives were lost on foreign soil in the major military conflicts of that era: Korea in the early 1950s and Viet Nam from the mid-1960s to the mid-1970s. Military personnel and civilians killed and wounded on both sides in those two wars and in other Cold War

clashes between the US and the USSR and their allies, have been estimated to be in the hundreds of thousands.

INTRODUCTION

From 1953 to 1956 I was a U. S. Air Force civilian employee at Nouasseur Air Base, about 20 miles southwest of Casablanca in what was then French Morocco. My job was in the Logistics Plans Office of the Nouasseur Air Depot.

The Air Depot was being built and staffed to serve as one of three major USAF-NATO logistics centers in the European-Med-North African-Middle East Theater in the event of war with the USSR. Each of the three depots would have a primary geographic area to serve with acquisition and distribution of supplies, repair and maintenance of aircraft and equipment, and conducting Military Assistance Programs.

In addition to Nouasseur, the Burtonwood Air Depot, near Manchester UK, would support air forces in the UK and European Northern Tier countries, and the Chateaux Air Depot in Chateaux, France, about half way between Paris and Marseilles, would support the Central Tier which extended beyond the Northern Tier to the Mediterranean coast (overlapping somewhat with Nouasseur for Spain, Portugal, Greece, and Turkey). Nouasseur (Casablanca) had the Southern Tier, which included North Africa and on into the Middle East and countries along and in the Med and areas which were not within the Northern and Central Tiers.

As a Logistics Planner at Nouasseur, one of my projects was to prepare an element of U S Air Force Europe (USAFE) logistics plans to support the U S Strategic Air Command (SAC). The plan would organize, staff, equip, transport, test and evaluate, and (in the event of war) activate and deploy Mobile Maintenance Teams consisting of U S civil service volunteers. The teams would provide on-site emergency repairs sufficient to continue flights of US-NATO combat-damaged aircraft forced to land in the Middle East/North Africa on return flights from battle zones.

Strategic Air Command bombers and their direct support aircraft in the active and near-future inventory during the early-1950s included the B-47 Stratojet, a six-engine 4,000 mile range medium bomber which entered service in 1950; the B-52 Stratofortress, an eight-engine 8,000+ mile range heavy bomber scheduled to enter operations about 1955, and the C-97 Stratofreighter cargo and tanker versions with four piston-driven engines which had been in SAC fleet operations since about 1950; also late models B-50 and some older B-29s from World War Two.

#

During the period covered by this memoir, the probability of a worldwide nuclear conflagration, sparked by a Cold War incident between US-NATO and the USSR, was considered to be high. The memory of World War Two was fresh in everyone's minds, and the U S confrontation with the USSR that brought on the Berlin Airlift, and its implications for the future, were, to many people, of the gravest portent. The Korean 'police action,' another outgrowth of stresses in the relationships between the USSR, Communist China and the U S, was winding down. 'Viet Nam' was on the horizon.

During much of the half century of the post-World War Two -Cold War era the US depended almost entirely on its own economic, military, industrial and human resources to defend NATO and its own far-flung lines. The international competition for country and regional security, resources to rebuild a devastated Europe, and control and administration of conquered territories created a massive arms race that affected the lives and destinies of people everywhere.

In the late-40s/early-50s the US-USSR conflicts of interests were at a critical stage. Intercontinental nuclear-tipped ballistic missiles were far past the drawing boards, their operational capabilities and effects in

war had been carefully estimated and were understood.

The United States doubled the number of its Air Force groups to ninety-five, and placed great importance on the Strategic Air Command (SAC). The number of SAC wings increased from 21 in 1950 to 37 in 1952. The growth of SAC air power arrayed US military capabilities and strategies to such concepts as massive retaliation and Mutually Assured Destruction (MAD) by NATO should the USSR launch a pre-emptive attack in Europe.

American and NATO planners admitted, however, that neither massive retaliation nor MAD, by themselves, would stop a Soviet first strike and an invasion into Eastern and Central Europe and the Middle East. The USSR could count on huge reserves of its still young, combat-seasoned men under arms, pre-positioned war materiel still in prime combat condition, and relatively short lines of transport and communications.

I have no specific information that would verify the following on international negotiations other than publicly accessible media. Obviously, NATO and the US had to counter the potential of Soviet military offensive and defensive resources and capabilities during the early '50s -- less than a decade since the close of World War Two, and the US and its allies, Communist China, the USSR, and Korea already in a war on the Korean peninsula.

Operational ICBMs were still several years in the future. The B-52 bomber, itself, was still in the early stages of production and deployment. Strategic warfare against Soviet oil drilling, refining, storage, and pipeline facilities in the southwest USSR (Caspian Sea area) were expected to slow Soviet military momentum. For this and other reasons, and to support planned military operations throughout the Balkan, Middle East and Mediterranean, the US expanded and modernized its existing facilities to conduct air operations over the USSR southwestern regions.

NATO and the US built or otherwise secured ground, seaport, and air bases and/or implemented joint-use agreements with governments in the Mediterranean area in the event of a NATO-USSR conflict and, specifically relevant to this memoir, in Morocco, Libya, Turkey, and the Central and Eastern Mediterranean generally.

MOROCCO

In the early 1950s, SAC was the major tenant on military airfields in Morocco: Ben Guerir and Sidi Slimane Air Bases in central Morocco, and Nouasseur Air Base in the desert about 25 kilometers south of the Morocco's dominant port Casablanca. Morocco had been a French protectorate since 1912, and thousands of French citizens and other Europeans had migrated to French and Spanish Morocco over the years and taken up residency. Large numbers of Moroccan, French and other European nationals were employed by the USAF at its bases and the US Navy's tenancy in Port Lyauty, and at other military installations where the U S and/or NATO had been granted French/Moroccan permission to do so.

Throughout the French occupation of Morocco a number of Moroccan nationalist groups formed in opposition to French domination, and they engaged increasingly in nationalist political and guerrilla resistance, including occasional bombings and other acts of violence. Sultan Mohammed V sided with the nationalists and was deposed in 1953. This further angered the Moroccan populace and in-country violence increased.

The Sultan returned from exile in 1955 and Morocco gained its independence some years later. Many French and Spanish citizens returned to their countries of origin. French military forces, business enterprises, and employment for the indigenous population in Morocco became uncertain, and so did the American military presence on Moroccan territory.

In the years that followed, the Libyan government also changed rulers, with the results that American use of

Wheelus Field, for any purpose, was revoked. Nevertheless, context and circumstances in North Africa aside, USAF planning for support to SAC operations under general war conditions, and for a variety of military contingencies, continued; in its way, North Africa all along the Med, would likely experience a *deja vu* of its World War Two experiences, but caught in a nuclear exchange, probably worse.

(In World War Two, oil refineries, such as those in the Romanian Ploesti fields, were important but extremely costly targets. For instance, in one mission, of the 178 B-24s dispatched to bomb Ploesti, 52 were lost, and all but 35 aircraft suffered damage, one limping home after 14 hours and holed in 365 places. These Allied bombing missions originated in and returned to airfields in North Africa; many of the old landing strips, fuel storage, and maintenance shops previously used by German and Italian military occupiers and then by the Allies, were in poor condition, but they were there.)

IMPORTANCE OF THE CASPIAN OIL REFINERIES

Assume that, a US/NATO war with the Soviet Union would include strategic air attacks against Soviet oil wells, refineries and other industrial plants, storage facilities, and transport nets. If so, USSR facilities in the southwest USSR (the Caspian Sea area) would have been among the high priority targets.

That being so, planning for US/NATO aircraft to return from bombing runs over southwest USSR included the option to select routes over-flying Turkey, Iran, Iraq, Crete, Greece, Saudi Arabia, Syria, Israel, Egypt, and other countries throughout the Middle East, across and along the north and south coasts of the Mediterranean.

THE GAP

It was expected that among returning aircraft there would be those which had incurred severe battle damage. Battle-damaged, or marginally or entirely non-operational in flight for other reasons, the aircrews needed to be helped. Unable to remain airborne to reach an organized repair facility or any location where the airplane could be fixed sufficiently for continued flight that would get the aircrew to safety, the airplane 'fixer' had to 'reach out' to the airplane and the aircrew.

One option, to be implemented immediately upon USAFE, SAC, or NATO notice, was to deploy 'rapid area maintenance teams' comprised of U S civil service employees, along with their tool kits and air-transportable mobile power generators, to designated locations along the SAC aircraft return routes where battle-damaged aircraft could be quickly fixed and serviced sufficiently to take off and keep going west, if not all the way, then at least to another location where another quick-fix and service could be rendered so as to extend the flight another step in the right direction. Repairs would be accomplished through use of anything from on-site fabricated bits-and-pieces to parts and assemblies cannibalized from wrecked aircraft.

THE PLAN

My assignment was to plan for, inspect potential fixit sites, work out and integrate the details, and prepare a supplement to the USAFE and SAC overall logistics support plans to close the gap. The tasks were to draft '...how to...' policy and procedural guidelines and Standard Operating Procedures (SOP); identify hands-on maintenance and supervisory skills that applied to aircraft in the current SAC operations inventory, and provide for their continuing compatibility with replacement weapons and support systems as they became operational in the theater, identify by skill, name and location committed US civil service technicians and staff currently on duty at a depot, identify U S personnel policies which would need adjustment to the anticipated circumstances and initiate administrative actions to initiate policy changes.

From there, I went on to provide for updating manpower resources to anticipated skills requirements, identify and set in motion urgent-immediate procedures to acquire (by standard practices or otherwise) relevant and

current manuals and tech data, general and special hand tools, etc. Get a training plan into operation for the program applicable to maintenance team skills, team crew chiefs, and on-site and regional supervisors.

Maintain a current team member notification system, and ongoing liaison with Hqs USAFE to acquire opportune air transportation from selected pick-up points for Mobile Maintenance Teams and drop-off at forward area emergency work sites. Put it all together, get staff and command approval in principle at Nouasseur, take the draft to Weisbaden (Lindsey Air Base) and get staff preliminary sign-off by Hqs Air Material Force European Area (AMFEA) and Hqs United States Air Force Europe (USAFE). Following that, get the coordination of the Directors of Maintenance and the Commanders at Burtonwood Air Depot UK and Chateaux Air Depot France (Burtonwood and Chateaux depots' manpower, tools, and other resources were to be committed to the program, hence their being in the loop for sign-off.)

With that done, I could come home, re-cycle, integrate, and send the package off to Hqs SAC, Offutt AFB, Oklahoma and give them a crack at it.

Along the way, get with SAC and other (unidentified) intelligence types and check the lay of the land from Morocco east to Turkey.

DEPLOYMENT

The three Directors of Maintenance at Nouasseur (Morocco), Chateaux (France) and (Burtonwood) UK assemble personnel committed to Program, and using the previously authorized priorities request Base Commanders for opportune airlift to move skills, tools, supplies, tech data, etc., to the Program's initial team assembly point in a specified maintenance hangar at Wheelus Field, Libya.

At Wheelus, the program manager (a Nouasseur Air Depot military officer and staff) shuffle and combine the physically present skills, tools, etc., so that teams and their kits are formed, organized, equipped, and ready to move according to requirements and priorities at each forward site where maintenance teams are needed. By air, sea or land transport get the teams to their assigned stations, each Civil Service employee equipped with personal gear adequate for survival under the anticipated wartime conditions. Use designated transportation and other support priority, when essential to the mission.

That, generally, was how it was supposed to work, at least in theory. But we knew better. The reality was that as soon as the nuclear threshold was crossed, which was highly probable, a US-NATO-USSR war wouldn't last more than a couple of days - if that.

The plan was one of several that I drafted while at Nouasseur and at other places in those early days of the Cold War. Many personal anecdotes, from the deeply sad and poignant to the trivial and absurd, have been written about World War Two, Korea, Viet Nam, and the other confrontations between the U S and the Soviets, but the Cold War in as many of its facets as possible, needs to be written about, including memoirs such as this, and they should be entered into the nation's lore so that students will see their many perspectives.

Almost two years were spent in working out and drafting the details of this SAC support plan. Would it have worked if and when the need arose? Had plans devised for other options? I don't know. Not so incidentally, forward area emergency maintenance (Rapid Area Maintenance - RAM) teams which were much further advanced yet comparable in concept and missions to the SAC support plan I worked on in Morocco, were used extensively in Viet Nam.

MEMOIR: OUTER SPACE LOGISTICS

I recently finished a science novel in ebook format that I began in 1984 and kept at in spurts afterwards. The dilemma presented in the story is real and its potential effects on future generations are finally beginning to be

recognized. I believe that 'creative' speculation about humankind's future - in the light of the scenarios explored in the books: LIMITS TO GROWTH have an important role in hard science fiction, and fiction generally.

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Scenarios in the famous 1972 'Report to the Club of Rome: The Limits to Growth' suggest that, within the next 100 years, unless worldwide corrective changes are made in time to change traditional physical, economic, or social relationships, society will run out of the nonrenewable resources on which the industrial base depends. According to the Report, when the world's reserves of nonrenewable resources are exhausted, a precipitous collapse of the economic system, manifested in massive unemployment, decreased food production, and a decline in population will occur. The death rate will soar.

The original 1972 report 'Limits To Growth' is supported in the follow up 1992 'Beyond The Limits' and the 2005 'Limits to Growth-30 Year Update.'

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An uninterrupted flow of metals, minerals, ores and other precious substances, mostly 'nonrenewable' in nature, are vital to sustain a society's 'industrial base.' Earth's reserves of 'industrial base' nonrenewable metals, minerals and ores are sufficient for several centuries; others are not. Manufacture and use of substitute materials is a flourishing industry.

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Most of the world's industrialized nations are planning for or have increasingly active programs to explore the interplanetary realm. News media reported in October 2000 that the People's Republic of China announced plans to search Earth's moon for useful substances. On-site robotic systems are well along in analyzing Luna, Mars and other celestial bodies as to their beneficial potentials. In a speech on January 14, 2004 the President of the United States of America unveiled a new vision for space exploration. He called on the National Aeronautics and Space Administration (NASA) to "...gain a new foothold on the moon and to prepare for new journeys to worlds beyond our own." "We do not know where this journey will end," said the President, "yet we know this: Human beings are headed into the cosmos." White House Press Release, January 14, 2004.

#

The American Institute of Aeronautics and Astronautics (AIAA) has an active Space Logistics Technical Committee:

<http://www.aiaa.org/tc/sl/>

The AIAA) definition of 'space logistics' states:

'Space logistics' is the science of planning and carrying out the movement of humans and materiel to, from and within space combined with the ability to maintain human and robotics operations within space. In its most comprehensive sense, space logistics addresses the aspects of space operations both on the earth and in space that deal with: design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of space materiel; movement, evacuation, and hospitalization of people in space; acquisition or construction, maintenance, operation, and disposition of facilities on the earth and in space to support human and robotics space operations, and acquisition or furnishing of services to support human and robotics space operations.'

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In the late 1950's the United States Air Force invited the nation's leading aerospace contractors to present 'pre-program definition' proposals on 'Space Logistics, Operations, Maintenance and Rescue' (PROJECT SLOMAR). An Air Force review of the contractors' proposals was conducted in 1961 at Headquarters, Air Force Logistics Command, Wright-Patterson Air Force Base, Ohio.

I was at that time the Chief of the Plans Branch, Plans and Programs Division of the Directorate of Materiel Management, Sacramento Air Materiel Area (SMAMA), McClellan AFB, California. SMAMA was the focal point for managing USAF worldwide logistics support to specific weapons and support systems, commodities, equipment that was unique to the 'systems' being managed and specific Air Force property sub-classifications of standardized and cataloged parts and assemblies.

SMAMA was at that time one of eight U.S. Air Force major logistics centers in the continental United States, each of which performed generally comparable functions for their assigned weapons/support systems, commodities, and parts unique to the system. SMAMA's major command was the Air Force Logistics Command (AFLC), Wright-Patterson AFB, Ohio. Research, development, test and evaluation (RDT&E) responsibilities were assigned to the Air Force Systems Command (AFSC).

The organization, functions, and titles of Armed Forces major commands occasionally change. When this paper was drafted (2006) the 'Major Command' for Air Force logistics management was as follows:

Air Force Materiel Command (AFMC), with headquarters at Wright-Patterson Air Force Base, Ohio, was created July 1, 1992. The Command was formed through reorganization of the Air Force Logistics Command and Air Force Systems Command.

Mission: AFMC's mission is to develop, deliver and sustain the best products for the U. S. Air Force. It is the Air Force's largest command in terms of employees and funding. AFMC supports other U.S. military forces and allies, and handles major aerospace responsibilities for the Department of Defense.

This includes research, development, testing, and evaluation of satellites, boosters, space probes and associated systems needed to support specific National Aeronautics and Space Administration projects.

AFMC researches, develops, tests, acquires, delivers and logistically supports every Air Force weapon system as well as other military non-weapon systems. AFMC works closely with its customers -- the operational commands -- to ensure each has the most capable aircraft, missiles and support equipment possible. (<http://usaf.com/orgs/5.htm>)

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Initially, (late 1950s) specific 'Space Vehicles' and their major components, parts and assemblies that were in both RDT&E and operations were tentatively assigned to Federal Supply Classification 11 (Missiles) and assigned to SMAMA for limited support. For instance, liaison with various government entities and contractors toward providing specialized government furnished equipment/materials for use in accomplishing specific federal programs.

Since then the Federal Supply Classification System was reorganized and military 'space systems' and their components were assigned to Federal Supply Classification Group 18 Space Vehicles. Space Vehicle Maintenance, Repair and Checkout Equipment are in Sub-group 4960. (See Attachment.)

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For the 1961 SLOMAR review, Hqs AF Logistics Command and Hqs AF Systems Command established in-house teams of scientists, engineers, logisticians and other experts to review and comment on the SLOMAR contractor participants' analyses and proposal documents. Document reviews were accompanied by oral and audio-visual presentations. I was the SMAMA civilian appointed to one of the AFLC SLOMAR logistics review panels.

One of my responsibilities as Chief of the Plans Branch was to analyze Hqs AFLC's mission and workload assignments to SMAMA in terms of McClellan AFB facility and manpower workloads. It should be noted here that in addition to SMAMA's worldwide logistics management functions, the installation on which the SMAMA Hqs was situated (McClellan AFB) was also a major USAF industrial supply and maintenance depot capable of highest level (fourth echelon) overhaul of aircraft and support systems, major repair of aircraft, equipment, electronics, and commodities; and supply storage, warehousing, packaging and shipment of a wide range of materiel to U S Air Force, other DOD and U S government entities, and allied/military assistance programs worldwide.

The assignment of depot-level weapons/support systems workloads are highly sensitive to the dynamic technologies and politics associated with military procurements, management and disposition of USAF assets and requirements. Industrial management and maintenance tools and equipment require timely maintenance, replacement or modification to match the needs and schedules of new workload assignments; new tech data is invariably called for, skills update and retraining are literally vital, and more. The acquisition of new and replacement depot level industrial tools and specialized equipment are almost always long lead-time assets and often require years to design, manufacture and install. Weapons/support systems worldwide logistics management and accomplishing depot-level supply and maintenance workloads exert powerful influences on the economies and employment in local communities, States, and regions.

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The Cold War's technological and logistical competitions in space between the U.S. and the USSR had high priorities. My interest at the SLOMAR review was to analyze implications in contractors' proposals in the context of SMAMA's logistics management functions and McClellan AFB industrial depot-level maintenance and supply 'capabilities.' SMAMA and McClellan AFB management required such analyses in order to be prepared to respond to higher headquarters requirements for their decision-making on assigning and accomplishing future workloads. It had become evident in the 1950s that the Department of Defense was considering extensive consolidations of military missions and their programmed workloads in order to reduce the number of military installations and corresponding military and civil service personnel. Out-sourcing to the private sector had become an increasingly influential option.

Since then, several USAF Materiel Command field logistical management and major industrial complexes, plus a number of smaller specialized industrial activities and the installations on which they were situated, were closed by the Base Realignment and Closure Commission (BRAC). Mission alignments included transferring massive workloads among AFLC field activities and out-sourcing to the private sector, including logistical management of programmed and active space systems.

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A permanent moon base did not follow the enormous investment of resources toward the Apollo Program's successful achievement of landing humans on the Moon and returning them to Earth. During one of my subsequent business trips to Hqs AFLC in the early-1960s I met one of the headquarters logisticians that had served on one of the SLOMAR review panels. He mentioned that, as far as he knew the SLOMAR archives had been passed along to the LUNEX project. LUNEX logistics, I later learned, would be accomplished by the private sector. LUNEX was a military program; the International Space Station (ISS) a NASA program.

My Internet search for the Air Force SLOMAR study as a source for this paper was unsuccessful. To see the May 1961 declassified lunar expedition plan (LUNEX) see:

<http://www.astronautix.com/articles/lunpter1.htm#lunex01>

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From the LUNEX plan's FOREWORD:

'This document provides a plan for a manned Lunar Expedition. It was prepared to furnish more detailed information in support of the National Space Program proposed by a USAF committee chaired by Major General J R Holzapple. That report pointed out the dire need for a goal for our national space program. The Lunar Expedition was chosen as the goal since it not only provides a sufficient challenge to the nation, but also provides technical fall-outs for greatly improved space capabilities.

'Previous editions of this plan have provided guidance and incentive to Air Force technical groups. Consequently, their efforts have established a broad technical base within the Air Force from which rapid advances can be made. This capability has been taken into account in laying out the accelerated schedules in this plan.'

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The bordered block 'AES Lunar Base' at:

<http://www.astronautix.com/craftfam/lunbases.htm> states:

'(Apollo Extension Systems) was planned as the first American lunar base. It would involve minimal modification of Apollo hardware. The Apollo CSM would be modified for long duration lunar orbit storage. Two versions of the Apollo LM would be developed: the LM Taxi, and the LM Shelter. Surface mobility would be provided by an open cab lunar rover within the 2050 kg lunar surface payload capability of the LM Shelter. This preliminary base would require two Saturn V launches to allow two astronauts to explore the vicinity of their LM Shelter over a two-week period. Development was actually begun in May 1966 with plans for a first mission in March 1970. But subsequent cutbacks and then cancellation of further Saturn V production led to the project being completely abandoned in June 1968.

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The first paragraph in the 'Background' section of [current] 'U.S. Space Transportation Policy Fact Sheet, dated January 6, 2005' at:

<http://www.ostp.gov/html/SpaceTransFactSheetJan2005.pdf> states:

'For over four decades, U.S. space transportation capabilities have helped the Nation secure peace and protect national security, enabled the Nation to lead the exploration of our solar system and beyond, and increased economic prosperity and our knowledge of the Earth and its environment. Today, vital national security, homeland security, and economic interests are increasingly dependent on United States Government and commercial space assets. U.S. space transportation capabilities -- encompassing access to, transport through, and return from space -- are the critical foundation upon which U.S. access to and use of space depends.'

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During informal discussions that accompanied the SLOMAR reviews, observations on 'What are we going to

do in deep space when we do get there?' were occasionally and seriously raised.

Comments explored variations of '... the nature of mankind is to explore the unknown,' 'national defense is vital in our adversarial international environment,' and so on. There was general agreement that ... 'The world must replenish the nonrenewable resources that were consumed since the beginning of the Industrial Revolution.'

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MORE ON 'INDUSTRIAL BASE' NONRENEWABLE RESOURCES

'Limits to Growth' is not alone.' For decades, scholars warned that the twentieth century's ruthless exploitation of the Earth's natural strategic metals, minerals and other essential substances was certain to impose increasing hardships on future generations. Even so, increasingly powerful and sophisticated probes and extraction machines continue to gouge the land and sea beds in aggressive exploitation of Earth's rapidly diminishing reserves.

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From an article in 'THESIS, A Journal of Foreign Policy Issues, (Winter 1998) includes an article: The Concern for Exhaustible Mineral Resources By Leonora Hagiou, Mining Engineer, Dept of Mineral Resources Evaluation Institute of Geology and Mineral Exploration Dr Werner Hoyer, Minister of State of the Federal Republic of Germany:

'The increasing use of mineral raw materials from the beginning of the industrial era and the unprecedented high rate of mineral production development especially after World War II has often led to great concern that we shall run out of exhaustible resources.'

<http://www.hri.org/MFA/thesis/winter98/mineral.html>

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Jeremy Rifkin, President of the Foundation on Economic Trends and the Greenhouse Crisis Foundation, in Biosphere Politics: A New Consciousness for a New Century (Crown Publishers, New York 1991) reports how industrialized and developed nations exploit the sea beds of the world for their rich deposits of industrial minerals and metals. He notes that the struggle between rich and poor nations and multinational corporations over minerals in the vast oceanic seabed is likely to be heated in the years to come, especially as reserves of land-based minerals approach exhaustion.

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The American Institute of Aeronautics and Astronautics (AIAA) has an active Space Logistics Technical Committee. See: <http://www.aiaa.org/tc/sl/>

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FUTURE HISTORY OR FANTASY?

After I retired in 1974, I wondered whether the far-reaching effects of an extended, ultimately disastrous decline in accessible reserves of natural but nonrenewable metals, ores and other 'industrial base' resources could be portrayed as fiction. The story would be set in a future era in which the Solar System is densely populated by space-faring human civilizations -- but not yet the stars.

I speculated a solar system-wide setting about two millennia into the future: The approaching depletion of nonrenewable but vital resources has reduced humankind's quality-of-life to a critical level. Raw and recycled substances throughout the solar community are no longer qualitatively adequate for construction, use and maintenance of habitat, life support, planetary and interplanetary logistical and other infrastructure. The useable acquisitions from mines and surface excavations on planets and asteroids, natural satellites and belts are down to mere gleanings.

The widely dispersed, indigenous, and enclosed communities of space perceive themselves and their lifestyles to be vastly different from those that remained under Earth's under 'open sky'. Their profound dissimilarities eventually lead to estrangement and, in time, alienation. Having no further use for guidance, materials and industrial products from an almost exhausted Earth, deft agitators sow seeds for political independence among the citizenry of the deep space colonies and for secession from Earth-dominated governance.

The isolation of colonies in deep space encourage modifying the human intellect and body in order to survive and attain a tolerable quality-of-life along the radically new and always dangerous space frontier. The technologically primitive steps toward space colonization have receded into ancient history; through sheer necessity the dynamics of space governance has reached form and priority in a reality that meets the needs and accelerating pace of an exploding humankind, a species everlastingly outward bound.

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This is, of course, mere speculation. Nevertheless, the visions of scientists and scholars, and ventures being planned in the private sector as well as by governments to further interplanetary exploration encouraged me to craft a 'hard science fiction' novel as another way to increase public awareness of Earth's potential crisis in essential nonrenewable resources.

"It is difficult to say what is impossible, for the dream of yesterday is the hope of today and the reality of tomorrow." -- Dr. Robert H. Goddard

The text of the e-novel: 'THE UNIVERSE--or nothing' may be freely downloaded from the Project Gutenberg Literary Archive Foundation at:

<http://www.gutenberg.org/etext/18257>

and from MANYBOOKS at:

HYPERLINK "<http://manybooks.net/titles/moldeven18257.html>"
<http://manybooks.net/titles/moldeven18257.html>

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Attachment:

Space Vehicles and Equipment Classification; Federal Supply Classification - Groups and Classes; Dept of the Army H2

GROUP 18

Space Vehicles

Note-This group includes space vehicles, such as space capsules, man-made moons, orbitals, satellites, space platforms, and the like, manned or unmanned. Excluded from this group are guided missiles and rockets.

SUB-GROUPS

1810 Space Vehicles

Note-This class includes only complete space vehicles, whether in assembled or unassembled form.

1820 Space Vehicle Components

Includes Structural Components; Components and Accessories specially designed for installation in or on Space Vehicles; Internal (Built-in) Control Systems. Excludes Remote Guidance Equipment.

1830 Space Vehicle Remote Control Systems

Includes Specifically designed Components of Space Vehicle Remote Control Systems. Excludes Internal (Built-in) Control Systems; Components designed for use with both Guided Missile and Space Vehicle Systems.

1840 Space Vehicle Launchers

Includes Launchers specifically designed for Space Vehicles. Excludes Launchers used with both Guided Missiles and Space Vehicles.

1850 Space Vehicle Handling and Servicing Equipment

Note-This class does not include space vehicle aerial recovery system which are classified in Class 1670. Includes Specially designed Trucks and Trailers for use in transporting Space Vehicles; Specially designed Slings, Hoists, Jacks, and Blowers, Self-propelled Vehicles, specially designed for space vehicle handling or servicing; Covers, space vehicle. Excludes Equipment used in handling or servicing both Guided Missile and Space Vehicles.

1860 Space Survival Equipment

Includes Food and Water Production Equipment; Air Production Equipment; Shelter Equipment; Power Generation and Conversion Equipment. Excludes Items which are integral components of Space Vehicles.

4960 Space Vehicle Maintenance, Repair, and Checkout Specialized Equipment

Includes Checkout and Test Equipment specially designed for use with Space Vehicles, including Remote Control Systems. Excludes Checkout and Test Equipment used with both Guided Missiles and Space Vehicles; Specially designed Internal (Built-in) Checkout Equipment for Remote

Control Systems; Basic types of Electrical and Electronic Test Instruments, including those specially designed, such as ammeters, ohmmeters, multimeters, and similar instruments, as shown in the indexes to the FSC.

MEMOIR: MILITARY-CIVILIAN TEAMWORK IN SUICIDE PREVENTION: THE 'VIET NAM' YEARS:
McCLELLAN AFB, CALIFORNIA, 1969-1974 AND AFTERWARDS

IF YOU FEEL SUICIDAL OR SELF-DESTRUCTIVE SEEK PROFESSIONAL HELP IMMEDIATELY

The author of this memoir was a paraprofessional 'hotline' volunteer in a suicide prevention service during 'Viet Nam' but remains a layperson in all mental health disciplines. Content should not be considered as

authoritative guidance or advice in diagnosing or treating mental health disorders.

Note: A supplement has been added to this memoir since the previous version was posted online to include suggested REFERENCES and their Internet links. The links were active at the time this memoir was prepared. Be aware, however, that Department of Defense and DoD Components' directives and other publications and documents listed here may not be current. Check applicable publications lists and indices for latest issues.

Preface: There is a general impression among experts in suicide and suicide prevention that official statistics on the numbers of suicides and suicide attempts in any identified population are like the tips of icebergs. They do not reveal to a casual reader the reality of how many individuals in that population killed themselves intentionally and, separately, how many tried to kill themselves, failed, and might try again. Authoritative estimates occasionally appear in both professional and popular media that there are about eight suicides in fact for each that is certified as a suicide for the official record, and about fifteen unsuccessful attempts at suicide for each that is classified as such, again for the official count.

According to figures compiled by the Centers of Disease Control (CDC), suicide rates are rising steadily for teenagers while declining or holding steady in other age groups. Between 1980 and 1993, the suicide rate rose 120 percent for 10 to 14-year olds, and almost 30 percent for 15 to 19-year olds. In part, this rise can be attributed to the increasing availability of firearms, but, in addition, (according to the American Association of Suicidology) 'there are more depressed kids.' And while the actual number of suicides remain quite small - in 1993 there were 315 students in the age group 10 to 14-year old and 1,884 students in the age group 15 to 19-year old who committed suicide. A 1993 study of 16,000 high school students conducted by the CDC found that an astonishing 1 in 12 said that he or she had attempted suicide the previous year.

Camouflage is not unusual: suicide preparations may be arranged so that the act will appear as an accident. An ailing individual might suddenly stop taking life-saving medication; or family members, friends, or 'significant others' might goad or exert harsh psychological pressures on an emotionally distraught person so that suicide becomes the only escape. Ironically, 'suicide statistics' do not examine the impact of a suicide on the victim's family and friends, nor do they note the traumatic and often permanent effects of the failed attempt on the victim. Further, they ignore the financial burden of subsequent home or institutional and health care for both victim and family as well as paying for precautions against further attempts.

PROGRAMS

A monumental medical, mental health and social advance was made in suicide prevention by the original U S Army Suicide Prevention Plan, (Feb 1985) prepared by the Directorate of Human Resources, Office of the Deputy Chief of Staff for Personnel. The Plan called on each U S Army base to develop and publish an installation Suicide Prevention Plan. The plan was to provide for active duty units, Army families, the Army Community, and civilian employees of the Army. Among its many initiatives were several concerned with collaboration with civilian communities and other public and private sector mental health and crisis intervention resources.

CONTEXT

Before I retired from the federal civil service in 1974 I was the civilian deputy to the Inspector General (IG) at McClellan Air Force Base, a large military installation near Sacramento, California. I was and am a civilian and a non-professional lay person in all mental health disciplines. I attribute my involvement in 'suicide prevention' to circumstances of the 'Viet Nam' period. At that time, many military mental health professionals and other caregivers were on duty at medical and mental health facilities in Southeast Asia, at way stations along routes for military personnel returning to the U S, and at medical and other facilities in the U. S. where Armed Forces wounded received care. One result was a general shortage of mental health specialists and staff at military installations in the continental U. S. Existing staff, including untrained civilian employees, were

often assigned 'additional duties' to fill gaps.

In 1969, the McClellan Air Force Base senior Commander instructed me to represent him on the Sacramento County Mental Health Council. At the time, the Council was considering the establishment of a county Suicide Prevention Service (SPS). The SPS was approved, and I became involved as a volunteer worker. As the SPS functions and workload became clear, I joined its paraprofessional training to certification and when the Service became operational I took my turn on the 'hotline,' especially those related to my McClellan responsibilities. I extended my duties to include SPS liaison with several other military bases in the Sacramento area.

At that time, central California and Nevada had military installations where military personnel of all Services were stationed for training and operations, or who were in transit to or from Southeast Asia. In effect, the Sacramento-San Francisco corridor in the late 1960s-early 1970s was filled with military personnel on their way to and from Viet Nam and elsewhere in Southeast Asia. From the outset, as word spread about Sacramento County's SPS hotline, increasing numbers of calls came in from potential and selected draftees and active duty members of the Armed Forces and their families.

One of my Inspector General's office responsibilities was to organize and operate McClellan AFB's support to the Air Force Inspector General Complaints System. The basic principle of the System holds that, as a last resort within their organization, military and civilian personnel and members of military families have the right to address a grievance or appeal to the installation's Inspector General. The installation Inspector General represents the installation's senior Commander in these matters. An appeal to the IG may be for information and explanations concerning status and duties, to describe perceived unreasonable conditions under which the appellant works, to report on inadequate support to themselves or their dependents or, for other reasons to seek relief from what the grievant considers an intolerable and unjustifiable situation.

The IG, or deputy IG, acting for the senior Commander, hears complaints and appeals and conducts such inquiries and investigations that may be required to resolve the matters. In the context of this memoir, when hearing (or reading) a complaint, there were occasions when a complainant hinted at suicide as the only remaining option should he or she not be given what they considered a reasonable resolution of the problem they presented.

A significant number of phone calls was also being received by the County Suicide Prevention Service 'hotline' from active duty military, military veterans and retired military of all Services, and from members of their families. Many, if not most, such calls (to the SPS) required information or actions from a military or other government entity.

The SPS policy was to not disclose a caller's identity: Protecting a hotline caller's identity is (or was at the time) generally practiced by most crisis intervention centers unless the situation was an imminent life-death crisis.

Organized, volunteer-staffed, telephone suicide prevention 'hotline' services were beginning to appear in the larger cities throughout the U. S. in the late '60s; less than a hundred were in operation across the U S at the time. In order that I might better understand the 'suicide' phenomenon and to accomplish my duties in support of the USAF IG Complaints System, I became a regular volunteer at the SPS, attended their ongoing paraprofessional upgrade training, and worked a shift on the hotline. I served with the SPS Speakers Bureau, Executive Board and other committees and gave talks about the community program at staff, non-commissioned officers', military dependents', and civilian community meetings.

Job-related, I compiled an information kit on suicide myths, and the signs that would generally indicate that a friend or family member might be thinking of suicide. I sent copies of whatever literature I acquired from the SPS and the National Institute of Mental Health (NIMH) to my counterparts at other military bases. The

USAF Inspector General printed an article about the information kits in the USAF TIG BRIEF (The Inspector General Brief) an IG administrative newsletter distributed to USAF facilities worldwide and to the Hqs of the other Services. The TIG Brief newsletter was also distributed in Viet Nam. The item resulted in more than 150 requests from Southeast Asia for the information packet, which we forwarded.

During talks I gave to military and general audiences I was occasionally asked for examples of what 'hotline' exchanges with military callers were like. Two of the 3 summaries that follow were related to the Viet Nam conflict. The third is a problem all too common, regardless of the times; it happened and continues to happen as often in the civilian world as it does in the military. I've screened my recollections so as to honor my commitments to confidentiality. The narration reflects a tiny sample of the effects of stress that can surface in military life and is not intended to represent major emotional, behavioral, or physical indicators toward suicide ideation. My regular work shift at the SPS brought me as much of a military-civilian mix of callers as the other hotline workers, so I've seen both sides.

The contacts were all by telephone, and in two of the three cases led to a number of quick follow-on calls to several parties on and off the base. Each caller had the potential for violence, either to self or another. If intervention, at a high point in the interaction failed, the situation might well have deteriorated, possibly with tragic results.

DRAFTEE

While on the job in the McClellan IG office, a phone call came in from the SPS Director who told me he needed my help right then. A young Army draftee was on the SPS hotline and he was threatening to commit suicide. He was supposed to be on his way to Viet Nam but he had gone AWOL instead. He was far from home and felt lost and confused.

He said he had one question before deciding whether to kill himself, 'What'll they do to me if I turn myself in?' He wouldn't identify himself or say where he was.

The SPS Director said that he didn't have the answer. He told the soldier he had a contact at a nearby military base that could check it out. Holding him on one line he called me on another and gave me the facts. I immediately called the Staff Judge Advocate - who was part of my on-base network - and had him phone the SPS Director immediately to review the ramifications of military justice as it might apply. The SPS Director passed the information to the soldier and then talked to him for about an hour. The guidance provided by the Staff Judge Advocate gave the soldier options that might reduce potential charges he faced, not ruling out desertion. We never found out what the soldier decided; he never called back.

This call, and how it was handled, demonstrated teamwork between a community suicide prevention resource and military and civil service administrators on a military base. Comparable groundbreaking was going on in other military-civilian communities and contexts.

FAMILY PROBLEM

The Base Chaplain called me at home late one Sunday night and said he'd had a phone call from a hotline worker at the community SPS. The SPS worker had asked for his help in a call that had come in from an airman's wife. She had phoned the SPS from her home off-base and threatened to kill her husband and then commit suicide.

The caller to the SPS had impulsively terminated the call to the SPS after a few minutes, but in her responses to questions at the outset of the interview, had given her phone number to the crisis worker. After she hung up, the crisis worker judged the woman was more than moderately lethal, and also that she might listen to a military Chaplain. That brought on the call to the Base Chaplain.

After getting the specifics from the crisis worker, the Chaplain phoned the woman and talked to her for about 10 minutes before she hung up on him too. His conclusion, also, was that she was highly lethal for both homicide and suicide. He phoned the Base Security Police and then the Director of Personnel. The Chaplain was leaving that day for Viet Nam; the Director of Personnel suggested he call me.

The Chaplain asked me to follow up. I called the woman. The conversation was heavy, and lasted for more than 2 hours. The problem was in marital relations, finances, and spouse abuse. We finally got around to talking about on-base resources that might ease the load she was carrying: the Staff Judge Advocate, Family Services and Medics. Just listening, and then talking about potential on-base resources helped to lower the pressure. She finally agreed to wait until morning, now only a couple of hours distant, so that the resources we had discussed could be consulted.

First thing that morning, I got the base Family Services people into the act. They moved in fast, took control, got the airman's wife around to talk to the right people, and did a lot themselves. I checked back later. Family Services had her under their wing. She wasn't talking about murder-suicide any more. It was going to be one day at a time for her for a while. She now had somewhere on-base where she felt she could turn, and people in whom she had some confidence.

Why hadn't the woman tried Family Services on her own? I don't know. She chose the civilian community's suicide intervention resource. She had other options, and she might have tried them too. What's my point? Another instance in which military and civilian resources collaborated and made the system work.

At about 11 PM one night, I was working my shift at the SPS hotline desk. A call came in from the switchboard supervisor at the city's telephone company. The supervisor said she had a man on-line and he was in a fury. She couldn't handle him. Would I take him? I told her to let me have him, and he was on.

It took a while to get him down to where he could speak coherently. He was an enlisted man in from Viet Nam, making his way to the East Coast. His problem wasn't suicide, it was homicide. He was in a barroom, he said, drinking and minding his own business. Shortly before his call, another patron had ridiculed his uniform and his Service. He had a weapon in his bag and had an almost overwhelming urge to use it.

A stranger in town, passing through, he felt he'd better divert and talk to someone. Searching for some means to vent his rage other than assault, he had, on impulse, picked up the barroom phone and dialed the operator. He must have come down real heavy on her and her supervisor; he found himself of a sudden switched to a hotline worker at the local SPS.

We talked for more than three hours. At the outset he was openly hostile, demanded to know who I was, and how the hell I had been loaded on to him. When I told him, he said he didn't know what 'suicide prevention' was about and wanted no part of it. But he didn't hang up, and we never hung up on anyone.

In our give-and-take, when he realized he was talking to someone who had more than a passing knowledge of the military, who could respond in his jargon and relate to his lifestyle and to his feelings, his hostility eased off. Other feelings began to surface.

He admitted that he had been deeply shaken and enraged by his experiences during border crossings into Cambodia, and he still carried the same, almost overwhelming, anger. Without my bringing it up, he confided that he'd had intense thoughts about self-injury, even suicide, and that the feelings had been strongest before taking off on missions. The rage, and the thoughts of suicide, were still with him and, looking back at them in calmer moments, he said that he was alarmed by their intensity. After a while, he admitted, reluctantly, that he might need help. He said he would think about seeking it out when he got to his permanent station.

At the close, he was much calmer. He phoned back a few hours later and told the hotline worker on duty that

he was at the bus depot, and would soon leave for the east. He said to pass the word to me that he was OK.

COLLABORATION

Eventually, it became evident to me from my IG and SPS experiences, that much could be accomplished through a carefully designed system for collaboration between military bases (or other federal agencies) in any given geographic area and the crisis intervention/suicide prevention (ci/sp) resources of adjacent civilian communities. The potential for good was enormous, not only for and within the military community, but national as well. I learned in time that I was not alone; many others, professionals and lay, were thinking and active along similar lines.

I was convinced that the time was long past for both military and civilian managers and supervisors, in both the public and private sectors to acquire basic indoctrination in ci/sp as it pertained to the people that they commanded or supervised. I wrote numerous letters on the issue, recommending specific actions, and continued doing so after I retired in 1974. My appeals went to the Federal Executive, Congress, and the media. I stressed the urgent need for proactive command (or agency)-wide training and motivational programs to confront the suicide phenomenon, and get organized to reduce suicide attempts and deliberate self-destructive behavior among military personnel, members of their families, and DoD and other Departments' employees.

The essence of my appeal was, first, for a set of formal objectives for the federal military and civil services to move them toward collaboration with community resources that were engaged in grass roots suicide prevention; in essence, collaboration and teamwork between the federal government, as an employer of people, and the communities in which their people lived and worked. If the concept could get a foot in the door at the federal level, then state and county governments might hitch a ride on the system, and ultimately, so would private sector employers. It made no difference which level took the initiative, cross feed and human nature would eventually get the others interested. The suicide trend, the way I read the Public Health Service's statistics of the early and mid-70s, was heading up.

Many government and private sector employers already had in-house programs for stress management. They also had employees who, although lay persons, had been trained and qualified to give emergency CPR and other forms of first aid at the work site. So why not someone in the shop or office who was basically trained in suicide prevention and crisis intervention? As with other on-site emergency services, this person, who would have been trained and qualified to recognize discernible and professionally recognized signs that might precede a suicide attempt, would consult with a supervisor, and exercise his/her judgment in getting the person-in-distress ASAP to professional help.

Community suicide prevention programs (certified SP Centers, informal hotlines, Community Mental Health Centers, etc.) had by that time become a fact of life: they existed, and were part of the system, organized or ad hoc. Proactive 'suicide prevention,' would generate its own force for being: it would not get canceled like an aircraft, ship, or construction program, to the contrary. With oversight by reasonable and conscientious leaders, managers, and supporters, suicide prevention would become ingrained, omnipresent, and a way of life in which everyone would play a vital role. Naive? Maybe, maybe not.

What is vital to sustain 'suicide prevention' is to spread the idea, and make it 'everybody's business.' Making the idea acceptable as 'everybody's business' would be 'everybody's job.' The 'everybody' would include parents and teachers and counselors of children and youth, police officers and rescue workers on the street, and supervisors, staff, and union officials in the workplace. It would be where people played, in their neighborhoods, and go along with each age group to where they would spend their retirement years.

For the elderly (among whom depression and suicide rates are very high) crisis intervention resources, and suicide prevention and risk-reduction depends on leaders and staff of health care institutions, administrators

and staff in retirement residence and convalescent communities, senior centers, AARP chapters, and anywhere the elderly gather. The reality would also depend on the elderly themselves, individually and collectively, e.g., to get past the long history they inherited of bigotry, superstition, and ignorance when it comes to mental health, suicide, and helping survivors of suicide. Emphasis on adult education, support group discussions, and motivational training can help to reduce such barriers among middle year's adults (parents of school age children) as well as the elderly.

An article I wrote in 1984 **Suicide Prevention Must Be Everybody's Business** was published in the January 14, 1985 issue of the Army, Navy and Air Force Times. It advocated an organized suicide prevention program within the military which would include training and involvement of all active duty military, not confined to those in the medical and mental health fields. I posed the questions:

'a. Does your base have a program whereby supervisors and co-workers who might be confronted with suicidal people are trained to recognize the warning signs and refer potential suicides to professionals?

'b. Are any base personnel, especially security police, social actions or family support workers, trained in crisis intervention techniques? Are any of them volunteer workers in the local community's suicide prevention program?

'c. Does your base have any sort of arrangement with local suicide prevention centers or hotlines so that a civilian crisis worker can contact the base for information or assistance? Do civilian volunteers know exactly whom to call for help when a military person or dependent threatens suicide?

'd. Do your base officials routinely check with local crisis clinics to find out the number and types of distress calls being received from military people? Is this information analyzed to determine trends or patterns?

'e. Do your base mental health workers give talks to active duty and dependents' groups on this subject? Are civilian experts in suicide prevention brought on base to explain their services?'

The following month (February 22, 1985), the Secretary of the Army and the Chief of Staff issued a Memorandum for Major Commands and Staff Agencies which stated in part, 'The Department of the Army has developed a Suicide Prevention Strategy designed to help commanders deal with this problem. Commanders must use this plan and complement it with initiatives tailored to specific needs.' Over the following months the Army issued implementing Departmental, major command, and subordinate level Regulations, programs, and guides.

Later that same year (1985), I secured copies of studies, plans, directives, motivational guides and other documents published by NIMH, the American Association of Suicidology (AAS), and the Army on their in-house suicide prevention programs and which they provided to me in response to my appeals. I published in book form the material that I received, and marketed it on a not-for-profit basis to cover my printing and related costs. My initial report, printed on Feb 26, 1971 (during Viet Nam) was 'Summary and Commentary on the Institute in Suicidology in Los Angeles January 23-27 1971' and had limited distribution within the Air Force, and the next compilation was in June 1985, 'Military-Civilian Teamwork in Suicide Prevention.' A subsequent update was published in 1988 'Suicide Prevention Programs in the Department of Defense', and the last update, in 1994, returned to the original title 'Military-Civilian Teamwork in Suicide Prevention.'

My intent, in collecting and disseminating to the general public the suicide prevention programs and practices of the Armed Forces, NIMH, and other contributors was to join the many lay persons like myself who had become advocates for an organized suicide prevention effort nationwide.

Wide distribution might also promote cross feed and disclose conflicting policies and procedures. The process, itself, I felt, would encourage collaboration among professionals, paraprofessionals, and

administrators and directors of suicide prevention activities in neighboring civilian communities. Further, I hoped that publicizing the Armed Forces' plans and procedures for suicide prevention and crisis intervention would encourage other government entities to explore their need for comparable programs, and that potentially beneficial methodologies might spin off to the private sector.

My continuing interest in proactive and organized suicide prevention efforts in the Armed Forces led me to write to then Secretary of Defense Les Aspin, and to Senator Sam Nunn and Congressman Ronald Dellums in their responsibilities as Senate and House chairmen, respectively, of committees charged with the oversight of military affairs:

(To) Secretary of Defense April 26, 1993 The Pentagon Washington, DC 20301

Honorable Secretary:

[The opening paragraph in the original letter cited a number of suicides in a military organization. Identifying the activities involved is not relevant to the focus of this copy and has been omitted.]

There is one aspect of organizing around (suicide intervention and prevention)-all-services-that deserves review at command level and, if a covering policy or management system exists, that it be publicized throughout the services and in civilian communities adjacent military installations.

Normally, a military person with an intolerable personal problem tries to get relief from within the system of which he or she is part, e.g., a buddy, family support services, chain-of-command, personnel staff, the IG, etc. Many personal problems are not job related, but because of the victim's inability to cope, spill over and affect 'job.' When the person is in a suicidal crisis, realizes that help is urgently needed, and wants such help, he or she will not hesitate to contact whomever can provide it, if not from within the system then from outside.

Unless the military administrative system has changed on this point, a suicidal military person, or a suicidal member of his or her family who seeks help from within the system, believes that a record of the contact will be made. The 'record' transforms to stigma and a potential threat to present job and future career. 'Records,' more often than not, compel the person in a suicidal crisis to look elsewhere. Elsewhere includes the adjacent civilian community's crisis intervention resources, specifically, the suicide prevention telephone hotline where callers need not provide identification - they're as safe from being identified as anywhere they can be under their circumstances. The hotline worker does what can be accomplished quickly to keep the caller from slipping deeper into crisis and acting out a threat to suicide. They listen, offer nonjudgmental feedback, and together with the caller, explore options.

Almost invariably, when a civilian community crisis worker (telephone hotline or face-to-face) needs information on options unique to military life to help a suicidal military member or someone in his or her immediate family, the source is the nearest base's health care, personnel, or other administrative functions. Very often, when contacts with base officials occur and the worker has the name of a suicidal caller, confidentiality is literally vital; being tagged in the base's records as someone who phoned an off-base crisis center carries almost certain exposure to military authority, and might well add the final straw.

If it's accepted that the military base and its adjacent civilian community should cooperate in suicide intervention, then the civilian and military agencies need mutually accepted procedures to do the job. If a community's crisis resource has one set of procedures for cooperation from the Navy, another for the Marine Corps, and still others for the Army and the Air Force, confusion mounts and collaboration suffers. This is especially true when the situation is tight and there isn't much time to keep a suicide threat from becoming an act. To the telephone hotline worker in a suicide prevention center it makes no difference whatsoever if the person on the other end of the line is a soldier, sailor, airman, marine - or civilian. On the other side of the scale, however, is the we-take-care-of-our-own turf, and that, to the suicidal person, is meaningless.

I hoped that, by now, military bases would have been further along in collaborating with adjacent civilian suicide prevention resources and that such teamwork would be reflected in base and community media. How else would a military person or a member of his or her family on the edge of a life-death decision for themselves know where to go or whom to phone, especially where their privacy and confidentiality would be respected - if they decided to take a chance to continue living? Is a city telephone directory listing for the local crisis center enough?

Agreements, procedures and contact points for military-civilian teamwork in suicide prevention deserve to begin on a county, metropolitan, or other regional basis, rather than in single-base to community understandings, especially where the area has bases representing different services. When all the services in an area have maximum understanding among themselves about collaborating with community suicide intervention resources, it will optimize the support that they and their people as individuals can ask for from that resource, and the help that the hotline worker can offer to them. In effect, when a civilian suicide hotline has been appealed to for help by a military member/family member, the crisis worker will have clearly written, mutually agreed upon procedures for communications and actions with each base in the area. All concerned will have been trained, tested, and know to the greatest degree possible who is going to do what. With present computer networking capabilities the resources indices in such guides can be readily maintained current and widely disseminated throughout a region and on and among military installations.

The opinions in this letter are my own, and are based on my experiences as a civilian IG-analyst and suicide prevention hotline volunteer in the late '60s/early 70s (and hassling the bureaucracy on this issue into the mid-80s.) I am not now associated with any mental health profession or military organization-strictly a private citizen. It may be that what I've suggested already exists or, conversely, that it isn't justified; I don't know, but I would be remiss not to present my views for your consideration.

Respectfully, s/Moldeven

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Reply from:

Office of the Secretary of Defense 1 June 1993 Washington D. C. 20301 (Force Management and Personnel)
(To) Mr. Meyer Moldeven

Thank you for your letter of April 26, 1993 to Mr. Les Aspin, regarding suicide prevention programs in the Department of Defense.

Your letter prompted a review of policy in the Department of Defense on suicide prevention. The Department of Defense does not address suicide prevention in its directive on Health Promotion. That directive was published March 11, 1986, and is in need of revision. The Department is reviewing and revising that directive and a suicide prevention section will be added. We will address in the development of that section the issues you raised in your letter to Mr. Aspin.

Thank you for your interest and continued concern in this important mental health area.

S/Nicolai Timenes, Jr. Principal Director (Military Manpower and Personnel Policy)

[added, hand-written: "Thanks!"]

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SOURCES FOR INFORMATION

a. MILITARY CASUALTY INFORMATION FROM DOD (INCLUDES 'SELF-INFLICTED' STATISTICS)

<http://web1.whs.osd.mil/mmids/casualty/castop.htm>

b. MILITARY SUICIDES BY BRANCHES (ARTICLES AND STATISTICS): OCCUPATION AND SUICIDE AMONG MALES IN THE US ARMED FORCES.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?
cmd=Retrieve&db=pubmed&dopt=Abstract&listuids=8680630](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&listuids=8680630)

c. *SURVEILLANCE OF COMPLETED SUICIDE IN THE DEPARTMENT OF THE NAVY.*

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&listuids=15132234>

d. NAVY SUICIDE PREVENTION PROGRAM

<http://www.npc.navy.mil/CommandSupport/SuicidePrevention>

e. MARINES SUICIDE PREVENTION PROGRAM

<http://www.usmc-mccs.org/suicideprevent/index.cfm>

f. ARMY G-1 HUMAN RESOURCES POLICY (plus links)

<http://www.armyg1.army.mil/hr/suicide.asp>

----- g. U S AIR FORCE SUICIDE PREVENTION PROGRAM - GETTING STARTED

<http://sp.datausa.com/gettingStarted/gettingStarted.html>

h. SUICIDAL ADMISSIONS IN THE UNITED STATES MILITARY.

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&listuids=12685680>

i. *U.S. AIR FORCE SUICIDE PREVENTION PROGRAM*

<http://www.e-publishing.af.mil/pubfiles/af/44/afpam44-160/afpam44-160.pdf> -----

j. *NEW SUICIDE PREVENTION AND AWARENESS PROGRAM TRAINS FIRST-LINE DEFENDERS-DC MILITARY-com* October 28, 2004

<http://www.dcmilitary.com/army/standard/922/localnews/31784-1.html>

k. *A TROUBLING RETURN FOR IRAQ VETS*

<http://www.kptv.com/Global/story.asp?S=2160619>

l. *NEWS STORY ON AN ARTICLE FROM THE JULY 1, 2004 NEW ENGLAND JOURNAL OF MEDICINE ON MENTAL HEALTH*

'Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care'

Full-text at: <http://content.nejm.org/cgi/content/full/351/1/13>

A National Center for PTSD Fact Sheet

<http://www.ncptsd.va.gov/facts/problems/fssuicide.html>

n. OPERATION TRUTH

<http://www.optruth.org/main.cfm> < Resources page-including Mental Health at:

<http://www.optruth.org/main.cfm?actionId=globalShowStaticContent&screenKey=VetsResources&lnav=3#mental>

'Operation Truth is a non-profit 501c(4), non-partisan veterans' organization that seeks to amplify the soldiers' voice in the American public dialogue. Paul Rieckhoff, a First Lieutenant in the Army Reserves, founded Operation Truth in June 2004, only months after he returned from a year-long tour in Iraq. As of January 2005, Operation Truth represents well over 300 OEF/OIF veterans, and has over 26,000 supporters.'

o. DEPARTMENT OF DEFENSE: GRADUATE PSYCHOLOGY EDUCATION PROGRAM.
EDUCATING AND TRAINING HEALTH SERVICE PSYCHOLOGISTS TO MEET THE NEEDS OF
AMERICA'S MILITARY PERSONNEL AND THEIR FAMILIES

<http://www.apa.org/ppo/issues/edgpewp.html>

p. REDUCING STIGMA OF MENTAL ILLNESSES COULD REDUCE SUICIDES

<http://www.defenselink.mil/news/May2000/n0508200020005081.html>

q. No Forgetting (PTSD) PBS News Hour 30 Dec 2005

<http://www.pbs.org/newshour/bb/health/jan-june04/ptsd01-15.html>

r. VETCENTER READJUSTMENT COUNSELING - U.S.

<http://www.va.gov/rcs/>

s.(1). TIPS ON TALKING TO THE HARD-OF-HEARING

s.(2) NOISE AND MILITARY SERVICE: IMPLICATIONS FOR HEARING LOSS AND TINNITUS (2005)

<http://www.nap.edu/catalog/11443.html>

s.(3) HEALTHY PEOPLE 2010

Mental Health and Mental Disorders, Page 18-1

[http://www.healthypeople.gov/document/tableofcontents.htm#part b](http://www.healthypeople.gov/document/tableofcontents.htm#part%20b)

IF YOU FEEL SUICIDAL, CONSULT A 'MENTAL HEALTH' PROFESSIONAL AS SOON AS YOU CAN.

MEMOIR: TALKING TO THE HARD-OF-HEARING

A. TIPS FOR NORMAL-HEARING PERSONS WHEN TALKING TO THE HARD-OF-HEARING

B. NOISE AND MILITARY SERVICE: IMPLICATIONS FOR HEARING LOSS AND TINNITUS (2005).
This book, under Chapters, may be freely read at:

<http://www.nap.edu/catalog/11443.html>

C. HEARING ISSUES AND TRENDS

(Source: Healthy People 2010 Report: U. S. Department of Health and Human Services)

Information in this memoir is for informational purposes only. It is NOT a substitute for or to be relied upon for professional advice, diagnosis, guidance or treatment.

A. TIPS ON TALKING TO THE HARD OF HEARING (HOH)

These tips are based on suggestions from a speech therapist and teacher of hard-of-hearing children. The original list has been expanded to include input from professionals in audiology, geriatrics and gerontology,

and comments from caregivers of the HoH and the hearing-impaired themselves.

Please disseminate further. Additional 'Tips,' constructive comments, practices and useful anecdotes consistent with the intent of this posting/handout are appreciated provided that they are 'public domain' (not copyrighted or otherwise restricted.) Please email them to Yarnspinner7191@aol.com and they will be considered for inclusion in future updates.

The population of 'older adults' is increasing across the world, and age-related hearing disability is common. The hard-of-hearing (HoH) and deaf phenomena, however, affect all ages and both genders, and children too, everywhere. The public's need for better means to communicate within and among families, friends, students of all ages and their teachers, and professionals in health and patient-care, academia, the arts, and business will accordingly demand more attention. It's important for the 'normal-hearing' person to understand 'how to ...' and to practice the best possible oral and other forms of one-to-one and group communications with the HoH. I've periodically updated and disseminated these Tips on the Internet and will continue to do so.

Please pass the tips along to others who interact with the HoH young, the elderly, the hearing-disabled generally, and to the fortunate who hear 'normally'. Helen Keller said, 'Being blind takes away things, but being deaf [or otherwise hearing-disabled] takes away people.'

United States Government statistics estimate 28 million people - about 10 percent of the U.S. population - are deaf or hard-of-hearing of which, according to Healthy People 2010, about 1,500,000 victims, aged 3 years or older, are deaf in both ears. The earlier issue of Healthy People (HP2000) stated: '... patient and family interpersonal communication training, and environmental structuring can help to enhance the ... quality of life for the hearing-impaired' That's where teaching and applying 'Tips' such as those listed here come in. Being aware of related social isolation, significant emotional and mental health impacts on the HoH, and other adverse effects on the hearing-impaired, and practicing and teaching them to others can make communication easier and reduce stress for both the hard-of-hearing and the normal-hearing that interact with them.

The following Tips on talking to the hearing-impaired are based on suggestions from a speech therapist-teacher. The list is updated and expanded occasionally to include new Tips, comments and 'public domain' anecdotes from professionals and laypersons in all walks of life and the hearing-impaired themselves.

1. Whenever possible, face the hard-of-hearing person directly, and on the same level.
2. Your speech will be more easily understood when you are not eating, chewing, smoking, etc.
3. Reduce background noises when carrying on conversations -- turn down or turn off the radio, TV, or other noise-generating devices.
4. Keep your hands away from your face while talking. Don't shout; speak slowly and distinctly.
5. If it's difficult for a person to understand, find another way of saying the same thing, rather than repeating the original words; move to a quieter location.
6. Recognize that hard of hearing people hear and understand less well when they are tired or ill.
7. Never talk from another room. Be sure to get the attention of the person to whom you will speak before you start talking.
8. Speak in a normal fashion without shouting. If practical, see to it that a light is not shining directly into the eyes of the hard-of-hearing person.

The following comments were received from online community: members and/or subscribers of AOL's SeniorNet and AARP forums and discussion boards, Internet newsgroups and message boards:

9. I teach nursing assistant training at a long-term care facility. Needless to say, we have a number of residents whose hearing is impaired. Add these to your suggestions, especially if you are a healthcare provider or caregiver:

a. A woman's voice is often harder to hear than a man's, because of the pitch. Make a conscious effort to lower the pitch of your voice if you are a female.

b. Speak slowly and clearly.

c. If the person wears a hearing aid, make sure that it has batteries that work, that it's turned 'on' and is clean and free from ear wax.

d. If you know (or if it becomes evident) from which side the person hears best, talk to that side.

10. (There were several opinions/practices on the preceding 9. (described in the following sub-paragraphs and in Item 26):

a. It is better to speak directly face-to-face. Face-to-face communication in situations where relatively diffuse lighting is adequate and lights the speaker's face helps the hearing-impaired listener to observe the speaker's facial expressions, as well as lip movements.

b. Individuals with hearing impairment can also benefit from seating themselves at a table where they can best see all parties (e.g. the end of a rectangular table). Asking people to let you know beforehand when they are going to change the subject of conversation can also be helpful, as it can often prevent an embarrassing error.

c. Often, a person who is HoH has a 'good' or 'better' side -- right or left -- ask him or her if they do. If they indicate a preference, direct your remarks to the 'good' side or face-to-face, as they wish.

d. See that the light is not shining in the eyes of the hard-of-hearing person... change position so that you are not standing in front of a light source such as a window, which puts your face in silhouette and makes it hard to speech read.

e. Avoid abrupt changes of subject or interjecting small talk into your conversation, as your hard-of-hearing listener will be using context heavily to understand what you are saying.

f. If the HoH person wears an aid, try raising the pitch of your voice just slightly. If HoH is not aided, try LOWERING the pitch of your voice.

g. If all else fails, rephrase or try a relative, whose voice will be familiar to the HOH person.

h. Don't talk too fast ... slow down.

i. Pronounce words clearly. If the hearing-impaired person has difficulty with letters and numbers say: M as in Mary, 2 as in twins, B as in Boy, and each number separately: five six instead of fifty-six; because m, n and 2, 3, 56, 66 and b,c,d,e,t and v sound alike.

j. Keep a note pad handy and write your words and show them if you have to -- just don't walk away leaving the hearing-impaired puzzling over what you said and thinking that you just don't care.

k. Be patient.

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COMMENTS FROM FAMILIES AND FRIENDS OF THE HOH AND FROM THE HOH THEMSELVES

11. I have been using your list for my beginning nursing students -- for about three years. It is a wonderful asset. Besides my dealings with patients, I have a lived experience. My nephew (now in his mid twenties) is hearing impaired since birth, but has partial hearing with hearing aids. His steady girlfriend is also hearing impaired but has partial hearing with cochlear implants. I have found that it is very important to decrease the length of sentences. One can use the same vocabulary, etc., but avoid excessive strings of words. I also watch my hand movements. I tend to talk with my hands and when my nephew was very young and learning to talk, he would watch my face for cues. One day he told me he did not know whether 'to watch my face or watch my hands.'

12. I'm a hearing-disabled senior citizen who had a heart attack some years ago which required 'by-pass' surgery. Subsequent follow-up monitoring and treatment consisted of routine follow-up by my cardiologist which included periodic tests in a clinic's radiology lab and heart, lung and blood department. At both locations the administrative staffs and the nurses and technicians were always courteous, considerate and professional. No difficulty there. Where I invariably did experience considerable difficulty was in hearing and understanding what staff, technicians and physicians were saying to me.

At the outset of an exam or test I always pointed to my hearing aids and told those attending that I was HoH. I assumed that by noting this those attending would keep in mind when they asked questions of me or gave me information and instructions during the exam and test. Yet, during the exam or test, invariably, when any one of them looked directly at me and spoke - and from their expressions it was clear that they were addressing me - I did not grasp their 'words' or their speech came through garbled. The problem was not with the hearing aids; I usually installed new batteries before such visits and double-checked that they were 'on' well before any oral exchanges were to take place.

I believe that what likely happened was that the staff and technicians (and physicians) did take note of my hearing aids. They adjusted their speech patterns accordingly, then, concentrating on their work they drifted back into their normal manner of speaking. Consequently, I often missed much of what was being directed at me. If I was certain that I had missed something I usually brought myself to ask a speaker to 'please repeat that.' More often, embarrassed, I relied on context.

I suggest that the 'questionnaire' that each patient usually completes in a doctor's outer office or lobby before entering the examination room, include a prominent space with the question: 'Are you hard-of-hearing or deaf?' [Calling for a yes-no entry by the patient.] This should alert all those that review the form's entries that the patient has a hearing problem, and remind them to communicate accordingly. (I can't think of any reason why a patient can't just add this information on his/her own to the questionnaire.)

I also suggest consideration be given by the AMA, the APA, and other healthcare oversight entities that a patient's medical record or folder (especially for hospitalization) have a color-coded label affixed to signify that the patient is HoH or otherwise hearing-disabled. The implications of disabled hearing are far too serious in healthcare matters where a patient's full understanding of his/her doctor's diagnosis, prognosis and relevant treatments is literally vital, and all too often can involve life-death decisions. Physician's and staff's conscientious responsiveness to a patient's hearing-disability and consequent comprehension limitations deserve to be an ethical, if not a legal responsibility.

13. As a long time health care professional (dietitian) who has had hearing aids for 25 years, I am on both sides of the [problem]. I work in long term care and notice that the staff tend to repeat themselves when a

resident doesn't hear - they also raise their voices. If the resident still doesn't hear, they rephrase the question so different sounds are used. In my case, this raising of the voice works as my hearing loss is opposite of most people in that I can hear high frequencies better than the low ones. In fact, I have more trouble hearing the residents and have to ask them to repeat their comments. (I have had the aids adjusted and it doesn't improve the situation) What bothers me is when they raise their voice and it sounds like an angry voice rather than a questioning or commenting voice. This is something health care professionals need to work on.

14. I have very good hearing but work with a person who not only mumbles but also walks away as he is talking to you. I think he is so preoccupied with what he is thinking about that he thinks everyone will follow him as he goes to whatever he intends doing next.

15. I know exactly what you mean! I've had that problem all my life. I never considered myself 'handicapped' or 'disabled' but other people sure made it hard for me to 'fit in.' I, too, avoided joining clubs and going to meetings because of the difficulty. That is the problem with deafness, it is so isolating.

16. I do agree that other people often just don't think about the HOH. I have a so-called friend who, when I once told her that her extra low voice is hard on me, rolled her eyes to heaven and sighed. I almost told her to go to hell. That's not friendship, in my opinion.

I once asked a speaker to raise his voice a little. He looked at me with disdain and said for me just to move up to the first row. His voice almost got lower after that. Let there be peace on earth, and let it begin with me. It's not easy being a good HOHer

17. I have one relatively dead ear (left) and one relatively good ear -- have a fairly adequate hearing aid in right ear, nothing in left ear (because no use) -- I have discovered that I lip read a lot -- which means that if you talk to a HOH person, face them. If you are around the corner, or you turn away, you become much harder to understand. Also, do not hesitate to let people know hearing is a problem. I have a friend who is too proud to say, 'please repeat' or 'I missed your last remark' etc. There are a few controlling, slightly sadistic folks who won't speak up regardless of whether you ask them to. Not much you can do about them. But they are far and few between. On the telephone I often have to ask people to talk a bit more slowly and usually get prompt and satisfactory results.

18. In all fairness, I don't believe people are sadistic; they just do not relate to hearing problems. They often feel 'put upon' if they are expected to accommodate our handicap. I have an EAR DOCTOR who turns and walks away from me as he is giving me instructions. I've asked him repeatedly to face me as he speaks, but he forgets. In small meetings, I may ask a speaker to 'speak up' and they do - for a few seconds - and then fall back into their normal tones. Some, I hear perfectly well and others, not at all. Hearing aids are not for everyone I've learned to my dismay. For me, they make speech louder, but not clearer.

19. I can hear some people perfectly well, and not others. What is unbelievable is that my ear doctor will turn and walk away while talking to me! I've told him repeatedly that I cannot understand him unless he faces me when he speaks. People take note of that when you first mention it, and moments later, they forget. It has come to a point that I avoid meetings, even of small groups. If I ask the speaker to 'speak up,' they do so, but only for a moment. Unfortunately, hearing aids have not resolved my problem.

20. Had an interesting work experience. Many years ago [pre-computer age], I taught at The New York School of Printing in NYC, a boys' [not PC these days] vocational high school. Many deaf [also not PC 'hearing impaired'] boys were channeled there, because printing presses in those days made a huge noise. I taught 11th grade English, and I was told that all I had to do was be sure to face those students. They did just as well as the rest of the class.

A dear friend of mine is blind - she holds a regular, full-time job, is married, cooks, plays 'beep' ball [noisy

version of baseball], goes to Marlin games, rides a tandem bike with her husband, 'watches' movies, and has the most marvelous guide dog in the world. She prefers the word 'blind.' She says, 'I'm not visually-impaired - I'm blind!'

As those of you who have met me in the chatroom know, I am also 'impaired' - I am keyboard/challenged. Only 4 of my fingers can type, so I must look down at the KB. Here, though, I rarely make a mistake; I can review what I've written. ;-)

21. Appreciated your list of suggestions when talking to the hard of hearing. My mother, in her 80's is extremely hard of hearing. We've all gotten used to it, but occasionally it creates peculiar situations when she answers a question different from the one you asked because she only gets 3 or 4 words in the sentence and guesses at whatever else was said. For a while, my father thought she was in early stages of Alzheimer's because she gave these screwy responses. Believe me, we were all happy to find out that her non-sequiters were the result of hearing loss. So maybe you should remind people that the hearing-impaired may appear senile because they are only getting part of what is said and responding as best they can without realizing the response may be inappropriate.

I love it when my kids come back from visiting my parents. They plant themselves directly in front of me and speak distinctly and slowly and they never call to me from another room. Unfortunately the effect wears off after half a day.

22. As someone who was born with only 50% hearing and down to 20/30, I know the suggestions you've posted will be most helpful to everyone with a hearing loss.

The 'keep hands away from mouth' part really helps if the HoH person is a lip-reader also. I found dangling cigarettes, gum-chewing, and mumbling the hardest to 'read.'

I hope with education, people will begin to be less rude to the hearing-impaired. I had a supervisor once who would turn her back on me because she didn't like me 'looking at her' when she talked. She also wore braces and it was extremely difficult to understand her. Unfortunately, some people still equate 'deaf' with 'dumb.' Hearing-impaired may have difficulty communicating but that doesn't mean there's anything wrong with their ability to think. Don't leave them thinking you lack manners and education.

23. My niece lost her hearing at the age of 10. They never determined why it happened. The toughest thing for me was to tell her that I didn't understand what she was saying... so I stopped. Then one day my brother asked if I was upset with her. Of course I said 'no'. Then he told me that it hurt her when I didn't ask her to repeat herself until I understood. We began to talk and when we had difficulty with each other, would reach for pencil and pad. It became a game! We would spend more time working to understand because to write it down meant we hadn't yet succeeded to complete the bridge. Today, we still have to ask each other to repeat, but never have to reach for a pencil. She is the mother of two older teenagers, is employed at the University of -- Library and is an avid cyclist.... far from being 'Dumb'.

24. The one time I purchased a hearing aid, I thought it was necessary to put up with discomfort in order to get used to it. Returned from a trip with a badly infected ear caused by a 'spur' on the plastic. Your friends may be hypersensitive to the material that the hearing aids are made of - let them know. Ear doctor was concerned that I had not consulted him before purchase. He said a hearing aid will make things sound louder, but not clearer because of my type of hearing loss.

25. I have three lady friends that refuse to wear their hearing aids. Their ears get red and swollen when they wear them and I'm tired of having to talk so loud. Does anybody know what the aids could be coated with to stop this irritation to their ears. I use clear nail polish on my glasses and watch to keep them so I can wear them, but the hearing aids are made of different material and I don't want to make their ears worse.

26. (Re Item 10) I remember always wanting to sit to the right side of the class, from where I was sitting facing the teacher. I never really thought about why I always preferred that site. I didn't do so great in class when I was placed on the left side of the classroom or put near the back. I got too distracted when I sat in back - I obviously needed to pay attention to hear what was being said. Visual distractions threw me then, as they REALLY do now!

27. Technically, hearing loss is asymmetrical, something I learned on a listserv this spring. This means loss in both ears, but one different from the other. The audiologist has always called it unilateral loss, thus minimizing the impact of the loss in his 'good' ear, the left ear. We always sit to his left when we hold him, read to him or do anything with him. When he had access to his ALD (assistive listening device) at home, it didn't matter which side we sat on. However, he just can't understand what we say if we're on his right. I'm so used to being careful about sitting on his left that when I sit next to anyone I'm already checking which side of them I'm sitting on.

When I call to him I always tell him the room that I'm in, not just say, 'I'm here!' In school, we wanted a C-shaped arrangement with (him) sitting so that he could lip-read the kids. They instead grouped the tables into four and placed them throughout the room. The teacher is supposed to use a conference mic but I'm starting to suspect she doesn't. (He) does say he can hear the children.... but hearing and truly understanding are often different. Might be part of the LaLaLand syndrome.

He hears but doesn't always understand. He does automatically turn his good ear to people now and says 'What...' Very typical of the image you have of a deaf old codger... except he's a little guy. It's good though because finally he's advocating for himself and starting to let the world know he doesn't understand. With all of his 'whats' it's a lot harder for the world to miss his hearing issues.

28. Back when I gave 'grandpa' talks to youngsters in elementary schools, I usually told them up front that I was hard-of-hearing and to speak up when they asked a question or offered a comment. I would then 'beep' one of my hearing aids with a 'shave and a haircut beep beep' which got me off to a good start for my storytelling. Often, after my talk, as I prepared to depart the classroom, at least a couple of youngsters would announce, usually proudly, that their grandpa or grandma (or someone they knew) was also HoH and that they (the kids) knew just what to do to make sure that their words were clearly transmitted and had been understood.

B. NOISE AND MILITARY SERVICE: IMPLICATIONS FOR HEARING LOSS AND TINNITUS

Larry E. Humes, Lois M. Joellenbeck, and Jane S. Durch, Editors, Committee on Noise-Induced Hearing Loss and Tinnitus Associated with Military Service from World War II to the Present. 338 pages, 6 x 9, 2005, National Academies Press.

Read CHAPTERS online *free* at:

<http://www.nap.edu/catalog/11443.html>

DESCRIPTION

The Institute of Medicine carried out a study mandated by Congress and sponsored by the Department of Veterans Affairs to provide an assessment of several issues related to noise-induced hearing loss and tinnitus associated with service in the Armed Forces since World War II. The resulting book, Noise and Military Service: Implications for Hearing Loss and Tinnitus, presents findings on the presence of hazardous noise in military settings, levels of noise exposure necessary to cause hearing loss or tinnitus, risk factors for noise-induced hearing loss and tinnitus, the timing of the effects of noise exposure on hearing, and the adequacy of military hearing conservation programs and audiometric testing. The book stresses the

importance of conducting hearing tests (audiograms) at the beginning and end of military service for all military personnel and recommends several steps aimed at improving the military services prevention of and surveillance for hearing loss and tinnitus. The book also identifies research needs, emphasizing topics specifically related to military service.

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C. HEARING ISSUES AND TRENDS

(Source: Healthy People 2010 Report: U. S. Department of Health and Human Services)

An estimated 28 million people in the United States are deaf or hard of hearing. Some 1,465,000 individuals aged 3 years or older are deaf in both ears. Deafness or hearing impairment may be caused by genetic factors, noise or trauma, sensitivity to certain drugs or medications, and viral or bacterial infections.

Language is the set of rules that allow for the sharing of thoughts, ideas, and emotions. Speaking is one way that language can be expressed. Language also is expressed in writing or through sign language by some groups of individuals. In some cases, language can be expressed in additional ways by people who have neurological disorders. The most intensive period for development of language, either spoken or signed, is during the first 3 years of life. This is the period when the brain is developing and maturing.

The skills associated with effective acquisition of language, either speech or sign, depend on exposure to, and manipulation of, these communication tools. Early identification of deafness or hearing loss is a critical factor in preventing or ameliorating language delay or disorder in children who are deaf or hard of hearing, allowing appropriate intervention or rehabilitation to begin while the developing brain is ready. Early identification and intervention have lifelong implications for the child's understanding and use of language.

The standard estimate of congenital hearing loss (1 in 1,000 live births) appears to underestimate actual congenital hearing loss as reported in data from States with universal newborn screening programs. Estimates based on emerging data place the number at 2 to 3 per 1,000 live births. These data do not include children who are born with normal hearing but have late-onset or progressive hearing loss. Hearing loss often is sufficient to prevent the spontaneous development of spoken language.

More than 50 percent of childhood hearing impairments are believed to be of genetic origin. Earliest possible identification of infant hearing loss has been endorsed widely as critical for the developing child. Minimal hearing loss also is an important factor in school success and psychosocial development.

Estimates for the average age of diagnosis of hearing loss in infants and children range from 14 months to around 3 years. This delay of diagnosis is significant in terms of time lost for rehabilitation and time lost during unique opportunities provided by brain development in the infant and young child for language acquisition, spoken or signed. Nearly 15 percent of children have a low-frequency or high-frequency hearing loss.

Strategies for intervention or rehabilitation depend on the kind of hearing loss, age of onset, services available, and family preferences. Strategies include hearing aids, augmentative and assistive devices, oral-auditory instruction, sign language instruction, interpreter services, cued speech, cochlear implant, or combinations of these devices and strategies.

More than 300 inherited syndromes involve hearing impairment. Hereditary hearing loss can be either syndromic (accompanied by other characteristics, such as visual impairment) or nonsyndromic (where hearing loss is the only identifiable characteristic). Not all hereditary hearing loss is present at birth. Some hereditary hearing loss may be progressive or may appear later in childhood or adulthood as late-onset hearing

impairment or deafness.

One cause of late-onset hearing loss is otosclerosis. Otosclerosis, an abnormal growth of bone in the middle ear, results in gradual loss of hearing and affects 1 out of 100 adults in the U.S. population. Another form of hearing loss is Meniere's disease, which causes bilateral, often fluctuating, hearing loss in 20 to 40 percent of cases, usually in conjunction with balance disorder and tinnitus.

Otitis media, or middle ear infection, accounts for 24.5 million visits to doctors' offices and is the most frequent reason cited for taking children to the emergency department. Health care costs for otitis media in the United States have been reported to be \$3 billion to \$5 billion per year. Otitis media often occurs in repeated bouts, causing periods of hearing loss that can affect children during the critical time for language and speech acquisition and hamper children in a variety of learning environments.

Approximately 10 million persons in the United States have permanent, irreversible hearing loss from noise or trauma. Additionally, 30 million people are estimated to be exposed to injurious levels of noise each day. Noise-induced hearing loss (NIHL) is the most common occupational disease and the second most self-reported occupational illness or injury.

In industry-specific studies, 44 percent of carpenters and 48 percent of plumbers reported they had a perceived hearing loss. Ninety percent of coal miners are estimated to have a hearing impairment by age 52 years, and 70 percent of male metal and nonmetal miners will experience a hearing impairment by age 60 years.

Data indicate that people are losing hearing earlier in life and that men are more frequently affected in the 35- to 60-year-old age group. Noise-induced hearing loss can be the result of a traumatic, sudden level of impulse noise, such as an explosion, that can leave an individual immediately and permanently deafened; the result of continuing exposure to high levels of sound in the workplace or in recreational settings; the consequence of years of exposure causing subtle, progressive damage; or exacerbated due to individual vulnerability to noise. Noise-induced hearing loss is related to noise level, proximity to the harmful sound, time of exposure, and individual susceptibility. Many of these causes can be controlled by prevention. Prevention of noise-induced hearing loss is necessary for people both on and off the job.

DISPARITIES

The work environment of the 21st century will require intense use of communication and information skills and technologies. The individual who has a communication disability, disorder, or difference may be at a disadvantage.

Data show that students with disabilities, including hearing impairment and deafness, are disproportionately disadvantaged. The average reading level for deaf persons aged 18 years is estimated at the fourth grade. Early intervention for language acquisition, spoken or signed, can improve later ability to use language. Hearing impairments also are a major barrier to health care access and information.

Older people also are a major concern in terms of hearing health disparity. Presbycusis, the loss of hearing associated with aging, affects about 30 percent of adults who are aged 65 years and older. About half of the population over age 75 years has a significant hearing loss. As the population ages and lives longer, these numbers are increasing. Only about one-fourth of those who could benefit from a hearing aid actually use one. More than 8 percent of the population aged 70 years and older report both hearing and vision impairment. With the exception of increased hearing loss in men, there are no currently available data on these disparities.

OPPORTUNITIES

Two activities have yielded opportunity for early identification and intervention for infants who are born deaf

or with hearing impairments. As of 1999, 20 States had laws requiring hearing screening in the newborn nursery. Early identification allows for language acquisition, either spoken or signed, during the critical time period when the child is developing communication skills. Research in the field of molecular genetics has identified genes that contribute to hereditary hearing impairment. The potential exists for early identification and intervention for hearing impairment. Identifying individuals who may experience late-onset or progressive hearing loss provides time to make the appropriate treatment or rehabilitation options available.

Public education can promote hearing health and behavior to reduce noise-induced hearing loss, which is a fully preventable condition. An education effort, WISE EARS!, has been launched by a coalition of government agencies headed by the National Institute on Deafness and Other Communication Disorders at the National Institutes of Health and the National Institute on Occupational Safety and Health at the Centers for Disease Control and Prevention. They have joined with State agencies; some 70 public interest, advocacy, and patient organizations; businesses; industries; and unions as well as health professional organizations in a national effort to educate the public about ear defense.

The education effort focuses both on the public, with special emphasis on children, and on the workforce and has important World Wide Web-based components. A further opportunity exists with noise-induced hearing loss prevention. Tinnitus, a ringing, buzzing, or roaring in the ears, is a symptom that accompanies many forms of hearing loss and can be debilitating. Data indicate that tinnitus affects almost 15 percent of adults aged 45 years and older. Because tinnitus often is associated with preventable noise-induced hearing loss, hearing protection is key to reducing one important cause of tinnitus.

Assistive technologies are providing additional strategies for individuals with disabilities. For individuals who are deaf or hard of hearing, improved technologies will facilitate their ability to have an equal opportunity in the workplace and in society. Early identification for improved intervention strategies, prevention of noise-induced hearing loss through health education, and the development of innovations in assistive technology could improve significantly the hearing health of the HoH of all ages.

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#### About the Author

Meyer (Mike) Moldeven was a civilian logistics technician with the United States Air Force from 1941 until 1974. He was an aircraft emergency survival equipment specialist in the Pacific Area during World War II and a technical writer for several years afterwards.

During the Cold War he transferred to a USAF base in North Africa where he developed logistics plans for USAF-NATO emergency maintenance of disabled aircraft that would land along the North African coast after returning from missions in any future war with the USSR. During the U.S. post-Sputnik initiatives to create a national space program, he critiqued aerospace industries' logistics concepts on future space systems organization, infrastructure and support. Among the studies he critiqued was 'Space Logistics, Operations, Maintenance and Rescue' (Project SLOMAR).

During the Viet Nam War, he was the senior civilian in the Inspector General's Office at McClellan Air Force Base, a major logistics installation near Sacramento, California. As part of his 'added' duties during 'Viet Nam' Mike was a hotline volunteer in a suicide prevention center and consequently, an advocate for professionally-staffed 'suicide prevention' capabilities throughout the entire Department of Defense. He compiled documentation, published, and widely distributed copies of his book, 'Military-Civilian Teamwork in Suicide Prevention' (1971, 1985 and 1994.) Mike's updated essay on suicide prevention is included in this collection. See Memoir: Military-Civilian Teamwork in Suicide Prevention; McClellan AFB, California, 1969 and afterwards.

The Memoir: Space Logistics 1960s and afterwards, adds context to Mike's novel 'THE UNIVERSE-or nothing' archived in the Gutenberg Project at:

<http://www.gutenberg.org/etext/18257>

and MANYBOOKS at:

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