



Antique Wireless Association of Southern Africa Newsletter



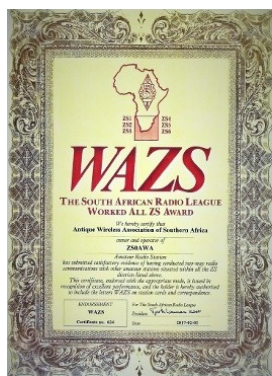
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October 2026



Supreme Oscilloscope

A later version of the Model 546 line of scopes, electrically it is identical to the earlier versions. This model has a metal cabinet and the chassis is painted wrinkle black. The 1941 price was \$64.50



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AWA Committee:

- * President—Chris ZS6GM
- * Vice President—
- * Technical Advisor—Rad ZS6RAD
- * Secretary/PRO—Andy ZS6ADY
- * KZN—Don ZS5DR
- * WC—John ZS1WJ
- * Historian—Louis ZS6SK
- * Members—Renato ZS6REN
Wally ZS6WLY

Reflections:

A week ago we had a discussion on the Saturday net on how to encourage people to become Amateur Radio Operators.

There was quite a lot of discussion on the topic, but now I would like to pose a question of a different kind

How do we encourage our AWA membership to come up on club activities, like our Saturday morning net, the Wednesday evening AM and CW activity and to participate in the AWA sponsored contest, which will be happening this Sunday. (Look for the details in this Newsletter).

It always seems like such a pity to me that we put in so much effort to get hold of old radio's, restore them and then never use them. I know there are a lot of restored, working radio's out there, because I have seen the photo's of your shacks and been into many of them to witness what you have.

Are they there just for bragging rights or do we actually take an interest in using them?

I hear the complaints of all those who try to get some kind of interest going. William ZS4L took it on himself to start a pre-net net to get old radios going before the actual AWA net on a Saturday mornig. I think he has no more than bout 5 or 6 calling in. Ludwig ZS5CN has attempted to get an AM and CW net going on a Wednesday evening, without much success.

Now I can hear all the comments that will be coming out, "Yes but I have family", "Yes but I get home late from work", Yes but.....

Surely we can manage one night a week, one Saturday morning?

I know this will strike some chords of controversy in many, and I'm not going to compare us to anybody else. I know there are thousands more hams in Europe and the Uk and the USA, but I don't want to compare us to anyone else. We are who we are and if we can't make an effort to utilise what we have for our own enjoyment, then so be it.

I was very hesitant at first to broach this subject, but if we don't, then who will ever

know how those who do put some kind of effort in actually feel.

It is so disheartening when we go out of our way to make sure there are different modes of operation so that people can join in one way or another on the Saturday net. 20m, 30m, 40m, 2m, Echolink and now the repeaters that are connected via the AllStar node.

Richard commented last week about how he believes this is something that you would not find anywhere else in the world.

I so wish I could give you all an extra hour a day, but that is not within my capabilities. Anyway you would probably find something else to waste it on.

I am sorry if I sound like a moaning old fogie, maybe I am, but I am really concerned about the well being of our association and where we are heading to.

I would at this stage like to say, that is my complaint for the month.

It would be so nice to hear more of you on one of the many modes of operation that we have. It would be so nice if you would just call in and say "Just listening". It would be so nice toof you to join the conversation and tell us about what you are doing in your shack, on your desk, in your workshop. It would be so nice to get 400 replies to this Newsletter just to say you disagree with me.

I will add one last comment, to say that I feel very privileged to be able to operate my radios on a daily basis.

I need to get my RF fix every day and I do it either on CW, SSB, 2m or HF and enjoy being able to (as a good friend of mine says) have a klat/ragchew/QSO with many of my amateur friends.

I am, as they say in the classics "Radio Active".

Vy 73

De Andy ZS6ADY



There's
no question
about it!

IF IT'S AN RCA TUBE...IT HAS TO BE "HEALTHY"!

RCA specializes in the production of "healthy" tubes. Take the RCA-6AX4-GT, for example. It features important built-in safety factors that minimize internal breakdowns and "arc-over", reducing early-hour failures—while providing reliable performance in TV damper circuits. Here are some of the ways RCA builds this "good health" into the 6AX4-GT:

Heater wire has been specially developed to improve welds, thereby reducing early-hour failures due to an open circuit at the weld point. Heater-spacer assemblies are pre-fired to eliminate leakage-producing contamination during tube production. And micas are specially sprayed to control plate-to-cathode leakage.

These are some of the reasons why many designers and manufacturers of TV sets specify RCA's 6AX4-GT—the very same reasons why you should always ask your RCA Tube Distributor to "Ship RCA Only"!

RCA Technical Booklet Available

RCA Receiving Tubes and Picture Tubes for AM, FM, and Television Broadcast (1275-M) ... includes socket information and useful data for more than 700 tube types. Ask your RCA Tube Distributor for your copy today!



RADIO CORPORATION OF AMERICA

Electron Tube Division

Harrison, N. J.

AWA CW Interest Group

October
2026

Morse keys, CW telegraphy, transmitters, receivers, history, procedure, exercises, and anything else related to CW.

Join the ZS0AWA CW net, Saturdays, 14H00 SAST, 7025 kHz, net controller Andy ZS6ADY
AM and CW net, Wednesdays 19H00 SAST, AM 3650 kHz, followed by CW 3550 kHz, net controller ZS5CN.

Article no. 3

Ludwig Combrinck ZS5CN

Introduction

In this October issue, we have a look at the Pattern 1056A Morse key and the World War 2, ITG200 AM/CW transmitter.

The 1056A was a straight telegraph key, used extensively by the British General Post Office (GPO) as well as by British Commonwealth countries from the 1880's and well into the mid-20th century. It was manufactured by Walters Electrical. The company originated as P. Walters and Co. before incorporating and being renamed to Walters Electrical Manufacturing Co. Ltd. by 1908. They manufactured Morse writers, sounders, relays, and telegraph keys the GPO. On the front of the wooden base of the key, it is stamped as PATT.1056.A. in white lettering.

The ITG200 transmitter appeared on the market in 1941. It is a very robust high quality AM and CW transmitter manufactured in the USA by the International Telephone & Radio Mfg. Corp., which was part of the International Telephone & Telegraph Corp. (ITT), for Standard Electric. It has an AM output of 200 W, and easily does 300 W in CW mode. Two triode RCA 8005 valves (8.5 W dissipation) are used in a push-pull configuration, and two 8005 valves are used in the Class B modulator. The transmitter was built to operate continuously, so when tuned to specifications idle along under no stress in either mode.

PATT.1056.A. Telegraph Key

This key (Fig. 1) was built onto a mahogany base (75 mm width, 153 mm length and 13 mm height), with two countersunk holes, one in the front right-hand side and the other in the left rear of the base. It was thus supposed to be fixed down, and was not designed as a portable key. Construction is solid brass, featuring beautifully turned brass terminal screws with large straight knurled heads unlike almost any other key of the era. Its solid brass lever arm is held securely in its trunnion block using a distinct tapered pin; this is locked by a small flathead machine screw.



Figure 1. Walters Electrical PATT.1056.A. telegraph key.

The brass lever arm contains an integrated casting pattern number, WE8208, followed by the letter D enclosed within a circle; (D) is a Registered Design Notice that indicates the key is officially registered. The arm uses an adjustable under-lever tension spring to create the key close/open function. Spring tension can be adjusted from the top of the arm by rotating a machined tall-head screw that is recessed into a pin locked onto the spring. Two contact heads provide for keying, the rear one is closed and the front is open when the key arm is in rest mode.

I find it to be very easy on the hand and due to its relatively long arm, reasonably fast. I also use it with the thumb and base of the index finger placed over the knob, this is very comfortable and results in minimum move of the wrist and consequently reduces fatigue when doing long keying sessions.

The tall thin Bakelite knob can be difficult to use if you had a navy background and favour skirted knobs, the skirted knob allows the operator to place their thumb and middle finger against the knob, on the skirt, index finger on the knob, this provides extra stability and control during rapid or extended keying, with minimum wrist movement.

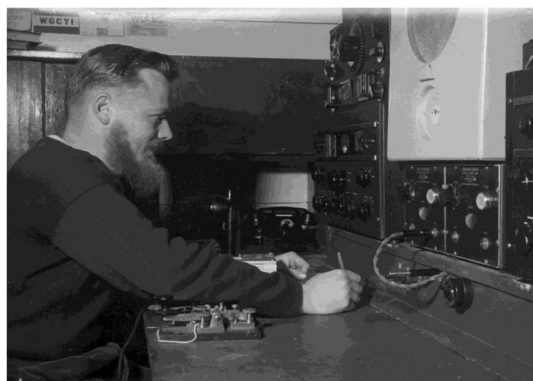


Figure 2. Radio operator Ken Edmunds in front of AR88 receivers, HRO receiver (left top). The two AR88 receivers flank the two control boxes of the two ITG200 transmitters used at the base. The Morse key (PATT.1056.A.) has been modified to use a skirted knob obtained from a military Morse key. (Picture sourced from Stellenbosch University, Antarctic Legacy Archive.)

An example of this (Fig. 2) is the use of this key at the South African Marion Island base during 1956. Here we see Ken Edmunds, radio operator of the 13th Marion Relief Team next to a skirted knob PATT.1056.A key. In this case the skirted Morse key knob is one that was used on World War II British Royal Air Force (RAF) "bathtub" Morse keys. The Marion Island skirted knob key can be seen in Fig. 3.



Figure 3. Skirted knob PATT.1056.A. Morse key used on Marion Island during the 1950's.

Standard Electric ITG200 Transmitter

The ITG200 has a nominal carrier power rating of 200 watts and is arranged for continuous frequency coverage from 2 to 20 MHz. It operates from a 220 volt 50/60 Hz single phase power source. The fan in the door uses 110 volts, so it has its own step-down transformer.

Two of these transmitters as used on Marion Island in the 1950's can be seen in Fig. 4. A BC221 was used to calibrate adjustment of the frequency of the ITG200's VFO; it has provision for four crystal controlled frequencies as well. Two 866A Mercury vapor rectifiers can be seen in the photo, in the rack on the wall to the right of the right-most ITG200.

This transmitter consists of five rack-mounted units (Fig. 5). Starting from the bottom unit, we find the RF power supply, then the modulator power supply, modulator, RF exciter and the RF amplifier as the topmost unit. The rack and rack-units were painted a deep charcoal. A hinged door opens at the rear, providing access to the cabling harness and plugs to individual rack-units; the door has a large fan built into it to help circulate cool air into the rack, exit vents at the top of the sides of the rack allow hot air to escape.



Figure 4. Two Standard Electric ITG200 transmitters used on Marion Island during the 1950's. They stand on plinths as the old radio hut was built on very marshy soil and had wooden walls, covered with corrugated iron panels; it had a raised wooden floor. (Picture sourced from Stellenbosch University, Antarctic Legacy Archive.)

Each transmitter had a remote control box, containing a plug for a microphone (left-bottom) and a CW key (right bottom). A mode switch was located on the top-left side, allowing switching between AM, MCW and CW. Modulated CW (MCW) was not used at Marion Island however. To the right of the mode switch was a light that came on when the plate voltage was switched on. A panel switch in the centre of the face of the control box labelled "Start" activated the transmit relays of the transmitter. A power switch on the power supply activated a 30 second timer. The timer was located on the front panel of the power supply unit; it would switch on the rest of the transmitter and HT relays after the rectifiers were warmed up. These are 866A Mercury vapour rectifiers, and the Mercury had to evaporate before high voltage could be applied to them, otherwise they could arc between anode and cathode causing damage to the rectifiers and possibly other circuits. A bank of fuses in the rear of the ITG200 protected circuits against over-current conditions. If the transmitter had stood for some time, the timer was triggered repeatedly to allow all the Mercury to evaporate, before HT was applied.

Keying is by a relay, effecting screen grid keying of the 807 oscillator tube. There is no noticeable chirp due to stiff voltage at the screen, and capacitors sized to damp sharp RF harmonics and eliminate key clicks. In practice it works very well.

The final output stage is balanced, so a balanced feeder can be used directly. There are two ceramic insulators mounted on the top of the rack allowing easy access to the output stage.



Figure 5. Five rack-mounted units complete the ITG200 transmitter. A terminal strip in the rear of the rack allows connection of microphone, CW key and remote control.

The exciter (Fig. 6) uses 807 valves for the oscillator, buffer/doubler and driver stages. Robust construction, ceramic coil formers and high quality components result in a very stable VFO that varies less than 100 Hz when warmed up. For any practical purpose, AM or CW, the transmitter is stable enough to be switched on, warmed up for 10 minutes and will be found to be very near its original frequency.



Figure 6. Exciter front panel of the ITG200. The VFO dial is to the right, followed by the intermediate stage and final stage tuning. Adequate metering is available to adjust and monitor all stages.

The ITG200 might not be found in many (if any!) radio shacks today as it is 85 years old now. One thing is for sure, if it survived Marion Island, and served the expedition operators well, it was very good equipment. Teamed up with a 1056A key, it makes a very good CW transmitter.

History Snippet: Alfred Vail (September 25, 1807 – January 18, 1859) built the first telegraph key. This was an improvement on Samuel Morse's original transmitter. Vail assisted Morse in building a practical system for sending and receiving coded electrical signals over a wire. This system was successfully demonstrated in 1844.

Antique Wireless Association Valve SSB QSO Party

1. Aim

The aim of the AWA Valve QSO party is to create activity on the 40m and 80m bands. It is a phone only contest using SSB. Preferably, valve radios or radios with valves in them may be used. No linear amplifiers may be used.

2. Date and Time

13:00 to 17:00 UTC Sunday 4 October 2026

3. Frequencies

3.1. 40m SSB: 7 063 to 7 100 kHz and 7 130 to 7 200 kHz

The segment from 7 100 to 7 130 is contest free.

3.2. 80m SSB: 3 603 to 3 650 kHz

The segment from 3 651 to 3 699 kHz is contest free

4. Power

The output power may not exceed 100 w, unless the rig itself has a higher output power (FTDX400, etc.)

5. Exchange

5.1. Call sign, RS report, a consecutive serial numbers starting at 001 and the type of radio used, eg HT37 TX.

5.2. Each QSO claimed for competition credit must comply with the rules found under General Rule "5. Contacts".

6. Scoring (Your radio)

There are 4 classes you can enter:

All valve radio (Mostly valve that is 80/20)

Hybrid radio (Valve finals and driver)

Solid State Radio - Pre 1970

Solid state radio - Post 1970

All score 1 point per contact.

7. Log Sheets

7.1 Excel logsheets can be downloaded from the SARL website.

7.1. The log sheets must be submitted by Friday 9 October 2026 to

andyzs6ady@vodamail.co.za. And uploaded at <https://mysarl.org.za/contests/uploads.php>

7.2. Certificates will be awarded for the highest score in each category.

From Spark-Gap Amateur to Hallicrafters

William J. Halligan

A portrait of the man, the hustle, and the camaraderie behind Hallicrafters

"Combine precision craftsmanship with the passion of the amateur, and you can build an empire on credit."

By Paul ZS6PMS

William J. Halligan is frequently introduced through a catalog of industrial milestones: early wireless operator, Journalist, pioneering radio parts salesman, founder of the electronics giant Hallicrafters, and a key manufacturing architect of the Allied victory in World War II. All of that is true, but it misses the true character of the man.

To understand Halligan, one must look past the factory floors of Chicago and focus instead on a nineteen-year-old military wireless operator shivering in the North Atlantic during World War I. At a time when radio was still a raw, unpredictable science, young Bill Halligan learned that a signal wasn't just an engineering formula—it was a lifeline.

Unlike his contemporary Arthur Collins—who approached radio with a quiet, severe, architectural perfectionism—Halligan viewed the airwaves through the lens of human connection and relentless entrepreneurial hustle. He was a man who understood that technical brilliance meant nothing if the average "ham" operator couldn't afford or access the equipment. His imagination was disciplined not just by proof, but by market reality.

That combination—commercial grit and deep hobbyist empathy—became the governing pattern of his life.

The Spark-Gap Apprenticeship

The character of Bill Halligan was forged in the brass and ozone of the early wireless era. Born in Charleston, Massachusetts, on December 8, 1898, he entered the world just as radio technology was shedding its very early experimental infancy. By the age of fourteen, while other boys his age were consumed with conventional schoolyard games, Halligan was completely captivated by the invisible mysteries of the electromagnetic spectrum. Operating out of a crude home workshop, he constructed his own spark-gap transmitter and coherer receiver and a bit later using a crystal such as galena connected by a fine "cat's whisker", operating the illegal amateur radio station, call sign **1AEH**.

This was not a passive hobby. In 1912, operating a wireless station required a hands-on relationship with raw machinery. Tuning a station meant physically adjusting a mechanical gap where thousands of volts of electricity literally jumped through the air, casting a bright blue light and producing a deafening, machine-gun crackle. It was an environment that demanded patience, physical coordination, and immediate problem-solving skills. If a component failed, there was no retail store to visit; an operator had to wind their own coils and construct their own capacitors from glass plates and tin foil.

For Halligan, this early technical trial was less about isolating a scientific principle and more about the thrill of reaching beyond his immediate physical boundaries. At sixteen, his competence was advanced enough that he secured professional employment as a wireless operator on passenger excursion ships traveling the coastline between Boston and adjacent maritime cities.

This maritime service completely reshaped his worldview. Placed alone in a cramped radio shack, the teenage operator bore sole responsibility for the vessel's link to safety. He quickly learned to read signals through heavy atmospheric static, to interpret the frantic cadences of distant operators, and to recognize that behind every rhythmic sequence of Morse code was a real human voice striving to overcome isolation.

When the United States entered World War I, Halligan immediately volunteered his specialized skills to the nation. Assigned as a U.S. Navy wireless operator aboard the battleship *USS Illinois*, he served throughout the conflict. On the rolling deck of a wartime capital ship, radio was stripped of any lingering hobbyist romance; it was an environment of absolute discipline where a single misinterpreted character could lead to catastrophe. This intense naval service permanently ingrained in Halligan a profound respect for ruggedness, absolute operational reliability, and the critical importance of standardization in communication hardware—lessons that would later define his manufacturing philosophy.

The Pavement and the Depression

Following his honorable discharge, Halligan sought to formalize his technical background. He enrolled in the engineering school at Tufts College in Medford, Massachusetts in 1919, intending to study the theoretical frameworks of the rapidly evolving electronics industry. However, the economic pressures of civilian life soon intervened. Financial constraints forced him to withdraw from Tufts, disrupting his path toward a conventional corporate engineering career. (3)

Seeking an alternative route toward leadership, he secured an appointment to the United States Military Academy at West Point in 1920. For two years, Halligan immersed himself in the academy's demanding regime of tactical planning, logistics, and strict institutional discipline. Yet, his personal life soon brought a crossroads. Falling deeply in love with Katherine "Kate" Fletcher, he chose to leave the academy without graduating to marry and establish a household, returning to civilian life in Boston. To support his new family, Halligan initially turned to journalism, working as a newspaper reporter in Boston and later in New York City. This brief journalistic career was pivotal; it sharpened his innate ability to communicate rapidly, to read human nature, and to distill complex events into direct narratives.

However, the pull of the airwaves remained undeniable. In 1924, Halligan abandoned the newsroom to

accept a position as a sales manager for his friend's Tobe Deutschmann Corporation, an early electronics company that specialized in fixed capacitors and radio filtering equipment. It was here that Halligan discovered his true genius: he was a consummate salesman who could speak the complex language of the laboratory but completely understood the practical anxieties of the retail buyer. He excelled on the road, managing accounts and eventually establishing a small radio parts retail storefront near Boston's City Hall. Recognizing the vast, untapped market of individual experimenters, he colloquially dubbed this parts venue a "Radio Shack"—unwittingly pioneering a retail concept that would echo across consumer electronics for the next half-century.

Seeking greater opportunities, Halligan packed his family and moved to the industrial hub of Chicago in 1928, establishing himself as an independent manufacturers' representative for radio components. Then, the American economy collapsed. The Great Depression devastated the traditional industrial sectors, and Chicago became an epicenter of business failures.

Yet, as Halligan walked the pavement of the city's commercial districts, he noticed a remarkable counter-trend. While major appliance sales plummeted, the passionate community of amateur radio operators refused to abandon their listening posts. In an era of widespread unemployment and profound social fragmentation, the radio shack offered an invaluable portal to global community and mutual support. Hams would willingly skip meals or repurpose old household appliances just to find the funds to purchase a new vacuum tube or a more sensitive audio transformer.

Halligan recognized a deep, unfulfilled market need: amateur operators needed high-performance, precision-engineered shortwave receivers that were professionally pre-built, factory-calibrated, and affordable. Up to that point, a high-quality shortwave setup required an operator to either buy a prohibitively expensive laboratory receiver or attempt to hand-assemble a complex circuit on their kitchen table, often with highly inconsistent results. Halligan envisioned an organization that would bridge this gap, delivering professional-grade craftsmanship directly to the enthusiast community.

The Birth of Hallicrafters and Patent Defiance

On New Years Eve in 1932, at the absolute nadir

of the Great Depression, Halligan was in his small Chicago apartment with Larry Chambers and Burton Brown. He announced that he was going to start a radio company. He had about \$ 800. Leaving both of his friends in total disbelief. It was by far not enough to build a factory, but it was enough for a man with conviction to begin.

The recollection comes from Fritz Franke, Halligan's chief systems engineer and later described by John Nagle as Halligan's "right hand man". Franke told the story in Dayton in 1983, fifty years after that New Year's Eve. So, Bill set out to realize his vision with virtually zero capital. His primary assets were his spotless reputation among Chicago parts distributors, his technical fluency, and an absolute confidence in his concept. Using sheer force of personality, he convinced a network of component suppliers to extend him lines of credit based entirely on future production promises.

He established his new enterprise in a modest facility at 417 North State Street in Chicago. Seeking a corporate identity that would instantly communicate his philosophy, he merged his own surname with the word "handcrafters" to form The Hallicrafters Company. This title was a deliberate philosophical statement: it promised the precision and structural integrity of industrial manufacturing combined with the dedicated, artistic care of the individual craftsman.

The fledgling company immediately faced an existential threat that nearly crushed it in its first months.

The Radio Corporation of America (RCA) held an aggressive, iron-clad monopoly over the fundamental patents governing superheterodyne receiver circuitry. RCA fiercely guarded these patents, utilizing a formidable legal apparatus to sue any independent manufacturer that attempted to build or sell radio sets without an official, highly restrictive patent license. RCA flatly refused to issue a new license to an undercapitalized startup like Hallicrafters.

Faced with an immediate shut-down order and ruinous litigation, Halligan refused to capitulate. Instead of surrendering, he applied the tactical maneuvering and logistical analysis he had absorbed during his time at West Point.

In 1933, he discovered that a prominent radio firm, Silver-Marshall Inc., had collapsed into bankruptcy. Crucially, the most valuable asset remaining in the bankrupt estate was an old, legally iron-clad, fully transferable RCA patent license.

In a swift and daring financial maneuver, Halligan

scraped together his remaining resources, purchased the assets of Silver-Marshall, and absorbed the entity to form the Silver-Marshall Manufacturing Company. By acquiring the corporate shell, he legally inherited the patent protection. He had completely outmaneuvered the legal departments of the major radio cartels, clearing the path for independent production.

To satisfy immediate financial debts accrued during the acquisition, Hallicrafters initially operated as a contract manufacturer, assembling radio chassis for other established brands until they achieved fiscal stabilization. By late 1935, Halligan was finally ready to unleash his own signature product line. The company introduced the S-9 "Super Skyrider," a communications receiver that completely revolutionized the amateur and shortwave listener's market.



The Skyrider line was a revelation. It offered a rugged, professional metal cabinet, a highly visible and precise tuning dial, an integrated beat-frequency oscillator for CW (Morse code) reception, and exceptional sensitivity across multiple shortwave bands—all at a price point that was within reach of a dedicated working-class operator. The radio was an instant commercial triumph. Halligan's insight proved correct: the amateur radio community responded with fierce brand loyalty.

By 1938, Hallicrafters had expanded its distribution network to eighty-nine countries, establishing itself as the premier manufacturer of communications receivers in the United States leading the big tree – National—Hallicrafters – Hammerlund and expanding its catalog to include high-quality radio transmitters.

Two Paths to Genius: Halligan vs. Collins

The mid-twentieth century was defined by two distinct titans of American radio massive

electronic empires from midwestern roots, their internal motivations, operational methodologies, and personal characters stood in stark, fascinating contrast (6)

Arthur Collins was a classic introverted intellectual, a severe and uncompromising systems architect. He viewed a radio not as a commercial product, but as an integrated, mathematically perfect component within a larger, global system of data and voice transmission. Collins was intensely inward-looking, frequently retreating from the corporate boardroom to his private laboratory to obsess over frequency stability, mechanical filters, and theoretical engineering challenges (6). He demanded perfection regardless of cost, building luxury equipment for government agencies, commercial airlines, and wealthy elites who could afford his uncompromising standards. His identity was entirely embedded in the absolute technical correctness of the hardware.

Bill Halligan, by contrast, was an extroverted operator-entrepreneur who viewed radio primarily as a democratic vehicle for human connection. He was not driven by abstract mathematical perfection, but by operational utility and social accessibility(14). Halligan was a populist who believed that a radio's ultimate value was measured by how effectively it performed in the hands of an ordinary human being under real-world conditions(14).

While Collins communicated through rigorous engineering papers and internal design mandates, Halligan communicated directly over the airwaves. Operating his personal amateur stations under the call signs W9WZE and later W9AC. Halligan spent countless hours participating in amateur nets, chatting with hobbyists, and gathering direct, unvarnished feedback from the field. In the industry, he became affectionately known as "Wireless Willie" or "Radio's Number 1 Ham"—titles he wore with immense personal pride.

This fundamental difference in character directly influenced their manufacturing philosophies. Collins built delicate, high-precision laboratory instruments encased in clean, formal enclosures. Halligan built heavy, battle-ready electronic tanks housed in rugged steel cabinets designed to survive damp basements, dusty farmsteads, and rough handling.

Collins approached engineering from the top down, forcing the user to adapt to the rigorous demands of the system. Halligan engineered from the bottom up, tailoring his controls, dial layouts, and pricing

structures to match the natural habits and financial realities of the everyday user.



Bill Halligan in his office November 1941 with the SX28 and PM23 speaker behind him

The Industrial Crucible of World War II

This fundamental focus on rugged practicality and rapid industrial adaptation faced its ultimate test when the United States entered World War II. Following the attack on Pearl Harbor, the Federal Communications Commission immediately suspended all domestic civilian amateur radio operations to secure the airwaves and conserve manufacturing materials.

For a company like Hallicrafters, which had built its entire corporate foundation on serving the civilian market, this mandate could have been a fatal blow. For Halligan, however, it was an industrial call to arms that aligned perfectly with his previous naval experience.

He completely suspended civilian production and re-engineered his entire Chicago manufacturing infrastructure to meet the demands of global conflict. The primary challenge facing the U.S. Army Signal Corps was the desperate need for a highly mobile, high-power, and completely reliable communications center that could accompany fast-moving armored divisions across rugged, unpredictable terrain. Military bureaucracies were struggling to design such a system from scratch, bogged down in

specialized specifications and lengthy development cycles.

Halligan bypassed the bureaucratic inertia by presenting a brilliant, practical solution. He took an existing, highly successful Hallicrafters civilian transmitter (the HT-4) and a standard commercial receiver, ruggedized their internal chassis with heavy-duty shock mounts, reinforced the electrical shielding, and integrated them into a standardized, self-contained mobile package. The resulting system was designated by the military as the SCR-299 mobile communications unit.

The SCR-299 was an unmitigated triumph of war-time engineering. Housed entirely within a standard multi-ton truck shelter and powered by a towed generator, it constituted a complete, high-power radio station capable of transmitting reliable voice and CW signals across hundreds of miles while moving at high speeds over open country. 29,000 of these were built. ⁽⁵⁾



The unit became the literal backbone of Allied operational command. During the chaotic campaigns in North Africa, Sicily, and the European theater, the SCR-299 allowed generals to maintain immediate, continuous contact with advancing tank columns and tactical air support. General Dwight D. Eisenhower credited the SCR-299 as a vital technology that helped preserve unified command structures during the rapid liberation of Europe.

Under Halligan's energetic leadership, Hallicrafters scaled its operations exponentially to meet the insatiable demands of the war effort. The company grew from a modest assembly plant into an industrial juggernaut, ultimately performing over \$150 million in vital war contract work. Halligan spent his days on the factory floors, motivating his workforce, troubleshooting supply chain bottlenecks, and ensuring that every single radio set leaving the line was capable of surviving the extreme conditions of combat.

This relentless focus on manufacturing excellence

did not go unnoticed; the War Department awarded the Hallicrafters Company successive Army-Navy "E" Awards for outstanding achievement in the production of war equipment, an honor that Halligan shared directly with his line workers. He had successfully demonstrated that an organization grounded in the passionate, practical culture of amateur radio could out-produce and out-engineer the rigid, traditional military suppliers.

Bill could also be quite stubborn as Fritz Francke recalls in 1983: "The DD-1 was the world's first dual diversity receiver. In 1942 somebody, I forgot the name, came out with a push button band switch and Halligan was fascinated by it. His designers McLaughlin and Carl Miles did everything except stand on their heads to convince Bill not to have push buttons put in the DD-1, because they weren't good, and they wouldn't last.

This was for a military contract! Bill wouldn't listen. They put push buttons in it and every darn DD-1 that was shipped out had problems and that was part of the reason that only 500 DD-1's were built. Bill's fascination with those push buttons caused the receiver to be unreliable and the military cancelled their contract" ⁽¹⁰⁾.

The Post-War Boom and the Corporate Squeeze

When peace returned in 1945, the restrictions on amateur radio were lifted, unleashing an unprecedented surge of civilian demand. Thousands of returning veterans, having been trained in communications electronics during the war, flooded into the amateur radio community, seeking to establish their own home stations. Halligan was uniquely positioned to capitalize on this post-war boom. The name Hallicrafters had achieved mythical status on the battlefields, and every new ham aspired to own a piece of that legendary reliability. ⁽⁶⁾

Halligan transitioned his factories back to consumer production with remarkable speed. He introduced iconic post-war receivers like the S-38 and the SX-40, which featured sleek, industrial styling created by renowned industrial designer Raymond Loewy. These radios were not just hidden away in technical workshops; featuring beautiful, smooth cabinets and elegant green-illuminated dials, they were proudly displayed in family living rooms across America.

Halligan secured massive distribution contracts, ensuring his receivers were featured prominently in the ubiquitous mail-order catalogs of Sears, Roebuck & Co. and Montgomery Ward, making

*Tomorrow's
Tube TODAY!*

NEW RCA 813

**gives 260 watts output
with less than 1 watt**

Driving Power!



IT'S A FACT! This sensational new RCA Beam Power Transmitting Tube actually requires less than one watt driving power to give 260 watts output in Class "C" Telegraph service. Needing no neutralization, a pair of 813's makes a bang-up final for that quick-band-change, high-power transmitter.

The new 813, is among the finest transmitting tubes RCA has ever developed, employs a new stem structure which makes practical a compact tube—only $7\frac{1}{2}$ " long—having very short heavy leads and low lead inductance. Because of its design, this new high-power beam tube can be operated at full ratings up to 30 megacycles without neutralization.

Other noteworthy features of this new tube are: Heavy-duty thoriated-tungsten filament, oversized graphite plate, dome-top bulb with cushion mount supports, low screen current, and a new Giant 7-pin base having short shell and wide pin spacings.

Typical Operation (Class "C" Telegraphy)

Filament Voltage
10 volts (a. c. or d. c.)

Filament Current
5 amperes

D-C Plate Voltage
2000 volts

D-C Screen Voltage
400 volts

D-C Grid Voltage
-90 volts

D-C Plate Current
180 milliamperes

D-C Screen Current
15 milliamperes

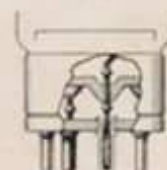
Driving Power
0.5 watt

Power Output
260 watts

Price, \$28.50 Amateur Net.



View of molded glass stem assembly showing individual lead seals.



Cut-away view showing short, heavy leads to terminal pins.



Radio Tubes

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.

A Service of the Radio Corporation of America

shortwave radio accessible to millions of ordinary citizens.

Ever the opportunist, Halligan expanded the corporate footprint into the exploding consumer television market, as well as home phonographs, clock radios, and specialized commercial marine electronics. Throughout the late 1940s and early 1950s, Hallicrafters was a thriving, highly profitable empire that epitomized the triumph of post-war American industrial manufacturing.

Success brings another problem

By the 1950s Hallicrafters was a large and diversified company. It was involved in amateur radio, consumer electronics, television and increasingly sophisticated military and defence work. Halligan had succeeded in turning a personal interest into a major industrial enterprise. But success creates a different problem. The founder eventually has to decide what his relationship with the company will be when the company becomes larger than the founder. This is where Halligan's story becomes particularly interesting.

The early 1960s brought a profound structural shift in the electronics landscape, initiating a slow corporate squeeze that would ultimately challenge the traditional foundations of the company. The invention and rapid commercialization of the solid-state transistor began to render the traditional, heavy, heat-generating valve architecture and point to point wiring obsolete. Solid-state technology demanded entirely different engineering methodologies, highly specialized automated assembly lines, and massive capital investments.

Concurrently, the American consumer electronics market faced intense, highly efficient competition from emerging foreign manufacturers. Companies like Sony and Trio-Kenwood began importing compact, highly efficient, and aggressively priced solid-state equipment that targeted the exact amateur and consumer markets that Hallicrafters had dominated for decades.

This period revealed the inherent vulnerability of the romantic, founder-led electronics firm. Like Arthur Collins—who drove his corporation into a severe cash-flow crisis by pouring millions into visionary, uncompensated digital communication research — Halligan found himself caught between his historical dedication to traditional, robust craftsmanship and the cold realities of modern corporate finance.

The era of the independent, street-smart entrepreneur who could run a global manufacturing firm

based on personal credit and ham radio camaraderie was drawing to a close.

The market now demanded massive corporate hierarchies, institutional venture capital, and rigid bureaucratic management (1).

In view of all this the Halligan family sold Hallicrafters to Northrop Corporation in 1966. Northrop paid more than \$13 million for the company and its associated operations. For Halligan, this was a very different ending from that experienced by some of the great radio founders of his generation. He did not die fighting to preserve control of the company. He did not see the company collapse around him. He did not leave behind a business destroyed by technological ambition or financial overreach. He sold. And he sold very successfully. After the sale to Northrop: Northrop used the company for a line of para-military equipment much of it in El Paso TX. Annual sales of Hallicrafters had been falling off sharply since 1970 so Northrop sold the company to its partner Wilcox. On December 4th 1975 Wilcox in turn sold to Braker of Dallas. In 1980 Braker went out of business and Hallicrafters went with it.

What happened to the radio man?

The most attractive part of Halligan's story may be what happened after the sale. The company could change ownership. The buildings could change. The Hallicrafters name could eventually disappear. But Halligan did not stop being a radio man. In 1983 he was photographed with Fritz Franke at the Hallicrafters Old Timers Reunion. Franke had been his chief systems engineer and, decades later, still remembered the founder with enough detail to describe both his strengths and his stubbornness.

Ninety-three years of radio

William J. Halligan passed away in Miami Beach on 14 July 1992, aged ninety-three. His life therefore spanned almost the entire first century of practical radio. He had entered radio when it was still young enough to be mysterious. He became an operator. He became a salesman. He became an entrepreneur. He built a company. He supplied the military. He entered consumer electronics. He built an international industrial organisation. And eventually he sold it. Yet the most interesting description of him may remain the simplest:

He was a radio man.

That is why Halligan's story should not be reduced to a history of Hallicrafters equipment. The equipment is what remains visible. The man is harder to

see. But the clues are there. A teenage boy who wanted to hear the wireless. A young operator who went to sea. A wartime radio man. A salesman who learned what customers wanted. An entrepreneur willing to start a company during the Depression. A businessman who built an industrial organisation without losing his connection with the amateur community. And finally, an old man who, after a lifetime of commercial success, still remembered what had attracted him to radio in the first place. Perhaps that is the real reason Bill Halligan deserves to be remembered. He did not simply manufacture radios for radio amateurs. And perhaps that is why the name Hallicrafters became associated with something more personal than a manufacturer. It became, quite appropriately "The Radio Man's Radio."

Sources and further reading

This article draws on the following historical, museum, and biographical company-history records. The interpretive passages are identified in the text as interpretation or inference where appropriate.

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HALLICRAFTERS SX28 SKYRIDER



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**Antique Wireless Association
of Southern Africa****Mission Statement**

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yester-days radio's and associated equipment. To encourage all like minded amateurs to do the same thus ensuring the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website.

Notices:**Net Times and Frequencies (SAST):**

Saturday 07:00 (05:00 UTC) — Western Cape SSB Net — 7.140; Every afternoon during the week from 17:00

Saturday 08:30 (06:30 UTC) — National SSB Net — 7.125

Echolink — ZS0AWA-L;

ZS6STN Sandton repeater — 145.700

Kempton Park Repeater — 145.6625

Relay on 10.125 and 14.135 (Try all and see what suits you)

Saturday 14:00 (12:00 UTC) — CW Net — 7.025

AWASA Telegram group:

Should you want to get on the AWA Telegram group where a lot of technical discussion takes place, send a message to Andy ZS6ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business. You must download the Telegram App first.+27824484368

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