

CHARLES BLISS AND DAVID SARNOFF,
PRESIDENT OF THE RADIO CORPORATION
OF AMERICA

More than 40 years ago I heard the name of David Sarnoff when I worked in the Patent Department of the firm Joh. Kremenzky of Vienna. At that time the radio firms of Philips and Telefunken had attacked our firm with crushing patent litigations in the patent courts of a number of European countries, and my boss Dr. Karl Dukes was at a loss to cope with the devastating evidence produced in the patent courts against our firm. It was for our firm indeed a matter of survival, of life or death. The old Johann Kremenzky, a fervent Zionist and a personal friend of Theodor Herzl, the originator of the idea of a Jewish State in Palestine, a man with vision who had established factories in Palestine in 1920, was in dire quandaries about the onslaught of the radio giants Philips and Telefunken. He faced bankruptcy. He himself came from Russia as an engineer of Jablochhoff who invented the Jablochhoff candle around the end of the 19th century. Kremenzky illuminated monuments and buildings in Vienna with the Jablochhoff candles which were arc lamps containing two carbon electrodes in parallel position thus they did not need the complicated machinery of keeping the points at the same distance as the carbon sticks burned down. At that time, Edison had already produced the carbon filament lamp and Kremenzky realised that the arc lamp is doomed, except for street lighting. He liked Vienna and Austria, considering that he had left dreadful Russia. He established a factory for electric lamps in Vienna and prospered.

In 1919 I entered the University of Technology in Vienna (having lost 4 years as a soldier in the first world war). Whenever I travelled with the Northern railway line out of Vienna I passed a building which I admired. It was a beautiful three story factory with the walls covered from the ground to the roof with ivy. Every time I travelled north I watched out for that beautiful green-leaved factory and admired it all the time. It appeared to me that the owner had at last broken with the dreadful tradition that factories must be dreadful buildings. Little did I know that I myself would soon work there from 1922 to 1938, and I would surely have gone into pension at the age of 65 from this very first employment - had not Hitler invaded Austria. It was on the 18th March, 1938 when the Gestapo arrested me in the factory and took me first to the Gestapo prison and then to Dachau and Buchenwald.

The reader must forgive me this little excursion into the past. I was happy there, and the old Kremenzky was a real patriarch who knew how to enlist enthusiastic co-workers for his scientific and industrial tasks. The researcher will find in my files, preserved in the Semantography Bliss Collection in the Australian National Library in Canberra, pictures of Kremenzky and his life story. At that time 1922 radio had come into the world - thanks in part to the energetic work of another Jewish engineer from Russia, David Sarnoff who had gone to America. Kremenzky needed scientists because he had decided to start the manufacture of radio tubes, and as it happened, a friend of mine from my own homeland, and the owner of an electrical wholesale business in Vienna, gave me a letter of introduction to old Kremenzky. I met there Dr. Dukes head of the patent and research department, and he hired me after old Kremenzky approved of me, though the outer impression of myself was rather horrid. And here hangs a funny story.

Kremenzky was a real patriarch and looked like one with a wonderful beard. Consequently, he did not approve of anyone in the factory (about 1000 workers and 200 staff members) who too wore a beard. Unfortunately, I wore a rather scraggy beard, and the reason for it may interest readers today (1972) when almost every young man wears a bedraggled and scraggy beard - because it is the fashion for some, and a sign of protest against the "establishment" for others. But in my time (1922) the wearing of a beard was condoned only for old people. No professor at my university and of course no student wore a beard. Why then did I fancy one?

My father had died during the war, and my mother could not support me in Vienna during my studies. I had to pay my way through the university and did it by tutoring my fellow students, not single ones, but whole classes in cram courses. And there I discovered that I am a born teacher. It was therefore natural to

think that teaching will be my profession. But though I was 25 years old when I graduated, I looked so young, as if I would be a lad of 17. I had to grow a beard to look older. There was something even worse to go with the beard. I was so poor I could not afford a white starched collar and a white shirt for daily wear. I had only one pair of good trousers when I graduated. And the heat in the chemical laboratories by hundreds of bunsen burners was dreadful. I then decided to wear sandals only without socks with my bare feet sticking out. I went around without a coat, just a pair of trousers and a coloured shirt (which did not get so quickly dirty) - and I wore a beard too. In fact, when I look at today's hippies at the university I realised that I looked like one 50 years ago. But I was the only one, and I was looked on with disdain by students and professors, so much so that the students' council sent a deputation to me who expressed horror at my undignified appearance. But what could I do? I had not the money to buy good clothes, and I was studying very hard and working harder in the laboratories, especially in the summer months when I abandoned ideas about a summer vacation in order to get on with my studies.

As it happened, my beard to make me look older did not help me when I applied for a teacher post advertised for the teaching of chemistry and physics at the Teaching and Research Institute for the Graphic Arts in Vienna. What I did not know was that the professoriate was almost totally Roman Catholic in Austr which was almost totally Roman Catholic. A few Jews were accepted, but only after they had decided to accept baptism. This was out of the question for me, because at that time I did not make any differences between Jewish and Christian superstitions. I then decided to go into industry. Part of my story I had told in my last book "The Invention and Discovery" especially in the pages in which I lambaste our teachers and professors that they cannot teach (see pp. 312-335 titled "Let's revolt against the educators of mankind.")

And so I appeared with my scraggy beard before old Kremenezy on the 1st November 1922. He had recognised my intelligence - but that beard? He told me to get it off immediately. Half an hour later I appeared before him clean-shaven. And thus we became good friends. And he needed dedicated friends like me. The firm faced bankruptcy by the attacks of Philips and Telefunken, and Dr. Dukes realised that he needs just that little Jew who worked so diligently in the chemical laboratory. Suddenly I was relieved of my dustcoat and my bedraggled clothes. I was given a good salary, advised to buy good clothes and then I went with Dr. Dukes to the court hearings in Austria, in Germany and in other European countries. And I made good. We did not lose our cases. On the contrary. I discovered a new science the name of which I didn't even know: semantics. I began to examine and analyse the professorial announcements and expertises of the scientists hired by Philips and Telefunken who testified in court that our firm is infringing vital patents which covered the manufacture of radio tubes. I found out their half truth and their full lies.

I worked day and night, and in the end we won, and there was talk that we could become affiliated with the Radio Corporation of America and thus out of the clutches of Philips and Telefunken. And at that time, about 1931 I heard for the first time the name of the president of the RCA David Sarnoff. "Who is David Sarnoff?" I asked Dr. Dukes. He answered: "Little David is one of our people" meaning he is a Jew like Kremenezy, Dukes and myself.

In later years I forgot about Sarnoff. Hitler came and I went to Dachau and Buchenwald and later to China. It was only much later in the sixtieth that the name of David Sarnoff made headlines in the papers. Eugene Lyons, his first cousin and a senior editor of the Reader's Digest wrote a book, and herebelow is the review in Time magazine dated 4 March, 66

DAVID SARNOFF by Eugene Lyons. 372 pages. Harper & Row. \$6.95.

Papa wanted his first-born son to be a trader: Mama, who came of a long line of rabbis, was determined that he should become a scholar. So when Papa left the tiny Russian-Jewish village of Uzlian to try his luck in America, Mama immediately sent her five-year-old son off to her uncle, a penniless rabbi who lived several hundred miles away. For almost five years the little boy lived there. He was an only child among a household of grown-ups: he rose with them at sunup and for 12 or 14 hours a day intoned pages of ancient texts in Hebrew and Aramaic until he could repeat them by heart.

To this day 75-year-old David Sarnoff, Chairman of the massive Radio Corporation of America, Brigadier General of the Army in World War II and adviser to five Presidents, resents those years of everlasting drudgery and clammy poverty, and the denial of a normal family life. Eugene Lyons, Sarnoff's first cousin and a senior editor of the Reader's Digest, suggests that this deprived childhood sparked the insatiable drive for success which marked Sarnoff's public career. That is undoubtedly true, just as it is true that Sarnoff's success rests on his capacity for perseverance, his almost unique administrative genius and a bullheaded belief in the ever-expanding universe of electronics and communications.

Unhappily, Author Lyons has produced something closer to an excruciatingly detailed publicity release rather than a definitive and probing biography, a glossy photograph rather than an interpretive painting. Sarnoff's achievements deserve better recognition - and a better biography.

Then Professor Reiser sent me a reprint from the Saturday Review which follows herebelow.

THE ONE-WORLD CONCEPT OF MASS COMMUNICATION

by

Richard L. Tobin

From Saturday Review

January 8, 1966

David Sarnoff, chairman of the board of the Radio Corporation of America, has been a communicator for half a century and seldom says anything for public consumption not pretty carefully thought through and even more precisely worded. Regardless of which assistant in which department has delivered material for his speech or portions of it, General Sarnoff's judgement based on unprecedented experience in electronic communication is what finally matters. We know he will not say anything to us that is not solidly provable and we can be pretty certain that, before a special audience, he will speak of the future of communications with an authority probably unsurpassed in today's world. Therefore, when General Sarnoff said the other night at the annual dinner of the Advertising Council that he foresees a one-world concept of mass communication we must listen carefully and follow his thought into whatever future it leads us.

As he received the 1965 Public Service Award of the Advertising Council, General Sarnoff suggested unification of all present communications media - television, radio, newspapers, magazines, and books - into a single integrated electronic medium that would serve a global audience with instantaneous sight and sound. He said that technical advances in recent years, even in recent months, have removed the distinctions among the various traditional communications media. We are now able, he says, to "transmit across vast distances all types of information - print and picture, the spoken word, telegraphic messages, televised images, and even the esoteric language of computers." We are then on the threshold of radical change in the ways we communicate everywhere on the planet.

Radical change was, after all, the hallmark of the Industrial Revolution - and we managed to adapt successfully. We can, says Sarnoff, expect the coming revolution in communications to be equally dramatic and adaptable. On planning boards and in engineering centers and research laboratories, advances in electronic communication are now so far along that they should reach practical form by the 1970's, weaving a world-wide pattern of total communication that joins homes, communities, and nations.

What form will these new electronic communication tools take? One, says the chairman of RCA, will be laser pipes providing superhighways for communication among major population centers. Through these narrow light beams any individual will be able to have his "private line" for sight-and-sound communication across any distance, as he now has his private telephone line-lasers with a total capacity millions of times greater than the most advanced communications system today. We shall have available microwave channels carrying radio, television, telephone, facsimile newspaper, magazine, and book printing, telegraph message, and computer data directly into office or home, giving the individual new access to the entire earth, if the politics of the world by that time allow such access. Then there will be continental and global networks of computer centers available to scholars, professional people, and businessmen, a sort of instant world library where all known and recorded data on any conceivable subject from social statistics to medical knowledge, from ancient history to market trends, will be instantaneously available. We should not forget our old friend the satellite, which, in synchronous orbit, will, says Sarnoff, "broadcast directly to individual television sets and FM radio receivers in the home, anywhere on earth," beaming its programs simultaneously over vast areas with a number of sound channels from which the viewer can select his own language. The next great step in communications is, then, the move toward unity in the use of light and air waves, telegraphy, radio broadcasting and radio telephony, television in all of the colours, even the computer with its sophisticated data processing and data storage.

One result, of course, will be the emergence of a universal language probably spoken and understood by all men in addition to their native tongue, and it is almost certain that this new language will derive largely from English, the most widely used of the more than 4,000 languages now spoken around the world. 600 million people now speak or understand English, more than one-fifth of the total

population of the world. Three hundred million use English as their primary tongue. But, what wonders us, as they say in Pennsylvania Dutch country, is what these hundreds of millions (and the rest of the world) will communicate to one another over all the fancy communications media RCA perceives. Will the West one day use its advanced gadgetry to send to the less-lettered portions of the globe the contrived and dreadful situation comedies now flooding NBC (and CBS and ABC)? How many dismal Westerns per night will flow by esoteric laser beam from Radio City to one of the emerging nations thirsting for American culture? Will the worldwide person-to-person communications the chairman of RCA foresees lessen the threat of human suicide and stir up at last a genuine interest in a fully functioning assembly of nations? Or will a Big Brother run all our communications at a level of the lowest common denominator?

Will the fact of common mass publication lower further still the quality of both print and electronic fiction and non-fiction? Will we all one day be forced to get out entertainment and our information from a single low common denominator where there isn't room for a Saturday Review or a WQXR or, for that matter, the dissenting voice? These are the important questions to a free democratic society, lovely as is the concept of one-world mass communication and fantastic as General Sarnoff's technical blueprint of the 1970s may seem to us now. End of article

Then the Reader's Digest of April 1966 brought this article by Sarnoff himself.

TV REVOLUTION AHEAD!

Soon it will be possible to see, hear and talk with anyone, anywhere on the globe. A leader of the communications industry discusses the promise and the pitfalls in the coming developments.

By Brigadier-General DAVID SARNOFF

Chairman of the Board, Radio Corporation of America.

Mankind is today on the brink of a Communications Revolution that will change the patterns of life as profoundly as did the Industrial Revolution of the 19th century.

In the next five to ten years, high-power satellites hovering above the equator will broadcast television directly to set-owners anywhere in the world, without the rebroadcast at the receiving end required today. Long before the year 2000, man will be able to communicate instantaneously - in sound and sight, in written message and in exchanged computer information - with anyone anywhere. People in Stockholm, Melbourne or Buenos Aires will be able to order, and receive almost at once, copies of business agreements, historical documents, photos and blueprints from anywhere else on this planet.

Students in any part of the world will be able to "attend classes" by closed-circuit TV at Oxford or Harvard, the Sorbonne or Moscow University. "Conference" phone hook-ups will be extended so that scientists, for example, will be able to participate in international discussions, seeing as well as hearing colleagues, without leaving their laboratories. In a crisis, delegates to the United Nations will be able to "meet" at once, discuss issues and vote on them, without flying to New York.

Many people are aware of the separate technical elements involved - communications satellites, electronic miniaturization, computers, the amazing light-generating laser which in a single beam will provide almost limitless electronic channels. Some are aware that underwater cables, now transmitting telegraph and voice signals, will in the near future be equipped to carry television facsimile transmissions and virtually all other electronic traffic as well. But only specialists as yet realise how these elements will all be combined - and even fewer recognise the far-reaching social, economic and political implications. Forces will be set in motion whose ultimate effects for good or ill are incalculable.

SKY-HIGH TOWER. The most significant harbinger of the new communications era has been in orbit since April 6, 1965, when the Early Bird satellite was successfully positioned 22,300 miles above the equator. Early Bird can pick up and radiate the impulses of television, telephone, computer and facsimile transmissions between North America and Europe. Already millions of people on both sides of the Atlantic have been thrilled by viewing the same TV broadcast at the same time. In surmounting the last great barriers of distance, man-made satellites have opened a new age in human relations. In any physical sense, geographical and political frontiers will cease to exist.

To understand the satellites' victory over space and time, bear in mind that TV and high-volume, long-distance telephony travel on extremely high frequencies called microwaves. These waves do not follow the earth's curve but move in a straight line, like light. Consequently, their "reach" is limited by the horizon - 30 to 50 miles, depending on the contours of the land.

To send signals longer distances overland, TV and telephone normally use a series of relay towers. The higher the tower, the farther it can radiate signals. Early Bird is, in effect, simply another tower - but 22,300 miles high! It can radiate signals across nearly one third of the earth's surface. Two more such

satellites, strategically positioned, would complete a network embracing the entire inhabited world.

The precursors of Early Bird, the two Telstar and two Relay satellites, reached vast areas, but only for limited periods each day - until our ever-rotating planet moved those areas beyond the satellites' line-of-sight. Early Bird eliminated the interruptions because it is "synchronous." That is, it moves round the globe in exactly the same 24-hour period during which the earth makes one rotation. This, for all practical purposes, makes it stationary.

Early Bird is only a forerunner. It will soon be followed by larger, more powerful satellites, accomodating as many as a dozen TV channels and thousands of telephone-voice, facsimile and computer-data channels simultaneously. These satellites which evolve into huge orbit "switchboards", automatically relaying electronic signals of every kind, from and to any place on earth.

DANGEROUS INSTRUMENTS. The most momentous communications advance - replete with opportunity and with danger - will come, I believe, with these high-power satellites able to beam broadcasts directly to any television set. (The standard set will require only minor and inexpensive modification to receive programmes from the skies.) Today, Early Bird needs special ground stations to rebroadcast its TV programmes. Control is thus with the receiving station. Ours decides whether a programme from Europe will be relayed to U.S. viewers: theirs decides whether to make a U.S. programme available to European audiences. This local option will be cancelled as soon as we can receive foreign television direct, as today we can receive short-wave radio programmes.

The earlier assumption that only the rich, technically advanced nations could afford communications satellites has been disproved. The costs have been sharply reduced. A single synchronous satellite can now be built and positioned for \$A9 million, a three-satellite complex for \$A27 million.

About the same time that Early Bird was launched, the Soviet Union began operating its first communications satellite, relaying television across the 4000 miles between Moscow and Vladivostok. Its "tower" is also capable of relaying two-way multi-channel telephone and telegraph messages and radiophotos. Unquestionably the Soviet will in time set up a world-wide satellite complex competitive with America's - and offer its facilities to other countries on terms determined more by political than by economic considerations. Eventually there may be many such systems.

When a Soviet satellite can telecast directly to a Kansas farm - or a U.S. satellite directly to a Hungarian collective farm - who will keep this form of communication from turning into a deadly weapon, an instrument for massive subversion and the incitement of conflict? The appeal of television from far-off sources, ultimately in full color, will be almost irresistible. Propaganda, subtle or crude, will come excitingly packaged as entertainment, culture, education. Thus, a potential for mutual understanding and sharing of knowledge may boomerang in deepened tensions and hatreds.

The time to head off this palpable threat is now. If we delay even five years in coming to grips with the problems of international regulation, the disorders resulting from lack of it may pass beyond control.

FIRST CONTACTS. Via global satellites, special instructional programmes on hygiene, literacy and other subjects will be beamed to backward and even primitive regions. Governments and private agencies will make TV sets available to isolated populations, where a single set can serve an entire small community. Many millions of people - on Polynesian islands, in Amanian jungle villages, in isolated settlements in India - will then be able to see broadcasts simultaneously with viewers in New York, Paris and Moscow. Large countries such as Brazil or India will be able, with one synchronous satellite, to extend television to all their citizens.

It is an exciting thought that millions who have never seen a train, a car or telephone may make their first contacts with the wider world through television via outer space.

MACHINE TALK. Few people as yet think of computers or "electronic brains" as a means of communication. Yet they are. And tomorrow the computer's present functions will seem to have been a mere beginning. Through processes akin to human logic, the computer will be able to learn from experience. It will respond to handwriting, images and oral commands - selecting or rejecting one voice, face or symbol among tens of thousands.

Already these extraordinary machines have been linked experimentally across the Atlantic. Computer instructions from the United States have actuated type-setting equipment to produce a newspaper in England. Soon there will be computer networks, linked through satellites and other electronic channels. In time, computers will be able to exchange information tirelessly with one another, and with people, regardless of distance. Automatic translation from the sender's to the receiver's language will come to be part of this development.

In our present "knowledge explosion", the volume of data in every field grows continually, and tends to become unmanageable. To make information instantly available where it is required will be the computer's primary communication job. Electronic libraries will store all human knowledge and documentation as it pours forth from laboratories, universities, research institutes. Ultimately, any person will be able to query a computer on any conceivable subject and receive an answer within seconds - by voice response, photographic reproduction, or on a display screen. Within 25 years we will see nation-wide or world-wide information-processing utilities - analogous to power, water and other utilities. Chains of interlinked computers will serve hundreds of thousands of subscribers.

INHERENT RISK. The communication Revolution will have wide-ranging effects on everyday living. Equipped with a compact TV transmitter-receiver, you will be able to converse in sound and sight with people anywhere in the world. You will probably have your own personal code number for making and receiving televised phone calls, for obtaining information, credit data and so on. Businessmen will have instant access to production, quality and market details from data stations positioned throughout the country and round the globe. Similar systems will operate, on a tremendously larger scale, for government agencies - military, diplomatic, economic. Doctors, feeding a record of symptoms into a computer network linked to an electronic file of complete, current, world-wide medical data, will receive at once a general diagnosis, plus suggestions, if desired, for further tests or treatments.

In foreseeing the potentials of the new communications era, however, prudence and sad experience demand that we never close our eyes to the risk inherent in all major technological break-throughs.

Every significant new scientific capability has imposed a corresponding responsibility upon those who exercise it. Above all, we must not permit the wonder-working machines to blot out or diminish man. There can never be an electronic substitute for a man's private conscience, his sense of justice, compassion and dignity.

End of Article.

At last I decided to write to him. At that time I was involved in a dreadful frustrating correspondence with the Pentagon. The United States Armed Forces had advertised for some medium of communication to be used for military personnel who could not speak English (as in the combined NATO, SEATO, ANZUS and other regional military commitments in the far flung U.S.A. bases in foreign countries.) I explained in my letters how my semantography could help even in squadrons of warplanes where pilots who speak different languages but English, could still understand the squadron leader's commands. I envisaged closed TV circuits within the planes which would show a quick drawn symbol in all other planes. Indeed, I said, that this could even help in Russian planes. At that time, the world faced the dreadful tragedies which happened when a Western military or civilian airplane blundered into communist territory. The Russian fighter planes could sometimes force the intruding plane down to land. Some other times they simply shot them down with tragic loss of life. The Russians would quickly copy the closed TV circuit in their own planes and thus could advise ^{the} intruding airplane in symbols to follow them or the intruding airplane could explain the situation, asking for advice and direction, etc. etc. Being an engineer I know what I am talking about, and thus I sincerely hoped that the military bureaucrats in the Pentagon would look up and listen.

I advise the reader to look up the issues of S.S. 190 The United States Armed Forces and Semantography S.S. 288 Bliss and the Pentagon.

Alas, the various departments in the Pentagon played musical chairs with my papers. It then occurred to me that David Sarnoff, a brigadier general himself, and an industrial wizard, would sniff out any new idea which could be sold to the Pentagon and result in big orders for hundreds of airplanes, etc. etc. I decided to write to him.

Search as I may, I cannot find the letters. May be they are with the Pentagon correspondence. May be I shall never find them. Enough to say here that I wrote a most eloquent letter to him, playing on his own words in the Reader's Digest article, reminding him that I am one of his party in the electronic field, in which I worked in Europe, and exhorting him to follow up my invention as proposed by me to the Pentagon. I remember that I received a letter from one of the directors of RCA that he will investigate in Washington the feasibility of going ahead with my idea. But the Pentagon is a warren of rabbit and pidgeon holes, and thus nothing came from Sarnoff and the RCA. Should I find the correspondence I shall add a page or two to this issue. But so far, the issue is dead.

The End