

audio record

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AUDIO DEVICES, INC.
444 MADISON AVENUE, N. Y. 22, N. Y.

audiorecords
audiotape
audiofilm
audiopoints



Audiotaping of the Continental Air Command's radio program "Reserved for You" progresses smoothly under the direction of the Radio-TV Division of CONAC. Story on page 6.

HOLY CROSS OPENS AUDIOTAPE LANGUAGE LAB



Left: Four Holy Cross students compare their foreign language pronunciation and comprehension with the master tapes at the college's new language laboratory.

Below: A panorama view of the laboratory showing arrangement of the forty individual soundproofed booths.

At left is a closeup of the Webcor five-channel master console. Audiotope is being used exclusively at the Holy Cross laboratory.



The latest and, to date, possibly the most advanced language laboratory in New England colleges and universities is now functioning in Carlin Hall at the College of the Holy Cross, Worcester, Massachusetts.

Now 114 years since its inception, the college has turned to the medium of magnetic tape as an aid in the teaching of language. Under the leadership of Rev. Alfred R. Desautels, S. J., Chairman of the Modern Language Department, a laboratory of unusual versatility and recording facilities is in operation. The entire installation was designed and erected by DeMambro Sound Equipment Co., Boston, Mass.

The physical layout of the laboratory consists of 40 individual soundproofed booths, each equipped with a Webcor tape recorder, microphone, earphones, volume and channel tuning controls. A master console with five recorders, operated by Mrs. Gertrude LeBlanc, laboratory technician, controls the whole operation. Five different languages can be taught simultaneously. At present three languages are being taught at the elementary and intermediate levels: French, German and Spanish.

The student using the laboratory picks the proper channel, which is posted at the front of the room, and proceeds. For example, a French student tunes into Channel One. While he listens to the master tape, his own recorder transcribes the lesson onto his own tape. Using the microphone, the student then repeats the lesson and puts his own version on the tape. On

the playback, the professor can plug in his own earphones on the side of the booth for criticism.

Aside from regular laboratory work the student is also given examinations on tape which are then reviewed by the various professors and marked accordingly. Master tapes have been prepared on Audiotope on 1½-mil Mylar* by the Department's eleven-man staff. Other master tapes have been borrowed from language laboratories in colleges and universities throughout the country. Father Desautels stated that students will be required to attend the lab at least one hour a week. The students purchase their own 5" reels of LR Mylar Audiotope from the college.

Father Desautels notes a vast improvement in pronunciation, oral comprehension, and diction. The students are encouraged to use the lab facilities during their off hours. Holy Cross can be proud of this forward step in the teaching of languages through the use of electronics and Audiotope.

*Du Pont Trade Mark

Editor's Note: We were not surprised to learn that Audiotope on 1½-mil Mylar had been chosen by Holy Cross for the master tapes at their laboratory. This premium-quality professional tape provides the utmost in mechanical strength and immunity to temperature and humidity. It will not dry out or embrittle with age, even under unfavorable storage conditions. Holy Cross has made a wise decision.

VARIETY OF SCHOOLS APPLY FOR AUDIO AWARDS

Hundreds of schools and colleges have submitted applications for awards worth \$16,000 in the Audio Devices' Educational Award Program. Entries were just about equally divided between the two classes: Class I (junior and senior high schools) and Class II (junior and senior colleges).

Schools from all over the United States and Canada applied for awards. In addition to "conventional" schools in both classes, entries were submitted by numerous special institutions: a speech defect school, a correspondence school for the blind, a community center, a missionary school, divinity schools, and several medical schools using tape largely for psychiatric interviewing. Three of the Canadian entries were in French.

The range of sizes in Class I schools ran from a private school in the West with 25 students to a technical high school in the mid-west with 4500 pupils. College entries ranged from a school with 69 students to one with more than 40,000.

The awards to the 66 winning schools and colleges will be made sometime before June, 1957.

audio  **record**

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NEW PRODUCTS



DICTET

Miniature, dual-track, magazine-loaded, magnesium case tape recorder. Powered by two 6-volt mercury batteries for motor, and separate battery for transistor amplifier. Battery life: 20 hours for motor, 40 for amplifier. Magazine has self-adjusting spindles; automatic stop at end of reel. Records at $2\frac{1}{2}$ ips; 30 minutes recording time on each side of magazine. Frequency response: 200-4000 cps. Wow and flutter: 2.25%. Signal-to-noise: 45 db. Magnetic microphone is both microphone and monitor speaker. Motor operates only when mike is plugged in. Dimensions: 2" x $4\frac{1}{2}$ " x $6\frac{1}{4}$ ". Weight without optional leather carrying case is 2 lbs. 11 oz. Price: \$289. Dictaphone Corp., 420 Lexington Ave., New York 17.



BUTOBA

Portable, dual-track, battery-operated recorder with push-button controls. Driven by special spring-wound motor with elapsed-time indicator. Tape speeds: $3\frac{3}{4}$ and $1\frac{7}{8}$. Running time is 20 and 40 minutes respectively on single wind. Multi-purpose head: record and playback/erase. Volume level indicator is magic eye tube. Power output, 0.5 watt. Playback through built-in oval speaker or external amplifier. Frequency response: 50-9000 cps. ± 3 db. Battery eliminator permits use on 110-volt A-C supply. Optional telephone conversation recorder adapter available. Overall dimensions: 12" x 15" x $4\frac{3}{4}$ ". Weight: 21 lbs. List price: \$295. Telephone adapter: \$8. Audio-Master Corp., 17 East 45th Street, New York 17.



*96th Air Police Squadron
Altus Air Force Base
Oklahoma*

Audio Devices, Inc.
444 Madison Ave.
New York 22, N.Y.

Gentlemen:

Thank you for sending the Audio Record and book on Magnetic Recording. The information in both publications should prove to be of value in my future recording work.

I feel that you, and many of your readers may be interested in the following narrative regarding magnetic recording and how it has revived what would have only been a college memory.

During the years 1934 through 1937 at a small college in Southeastern Montana, three students banded together in a vocal and instrumental trio. They participated in innumerable college and civic affairs, as well as many radio programs in Montana and Wyoming.

During two summers, this trio was employed in Yellowstone National Park, working daytimes and singing for the "Dudes" in the evenings. Unfortunately, tape and wire recording were unknown, consequently, no permanent record existed of their successes and/or failures. These young men were known as "X, Y and Z", for lack of a more descriptive title. Eventually "X" graduated and was employed by an oil refinery as a chemist, "Y" went into the construction business and "Z" joined the Air Corps. Several years elapsed, then World War II. "X", as a Naval Aviator served on an Aircraft Carrier, "Y", as a member of the Infantry, U.S. Army, assisted in the invasion of Germany while "Z" sat behind barbed wire in a Japanese Prisoner of War Camp.

After the War, and the subsequent development of home tape recorders, the trio was again united - by voicespondence. At present, "Y" is near Billings, Montana. He sang the lead melody in all arrangements, so he tapes his part of a group of the songs made famous by "X, Y and Z", and sends it to "X" in San Francisco. "X" sang high tenor. He takes his tape and recorder to the home of a friend, who also has a tape recorder, plays the original through his friend's machine, dubbing his part of the harmony into his own recorder as the melody is also recorded. "X" then mails the one tape with the two parts dubbed on it to "Z" at an Air Force Base in Oklahoma who repeats the process, adding the baritone part with the end result that "X, Y and Z" have eliminated the time and distance factor by means of tape recorders and Audiotape.

Sincerely,

*Lt Col George H. Amatory
(Z)*

THE FLYING SAUCER CONTROVERSY

On June 24, 1947 there occurred an event which added a new word to our vocabularies — “flying saucer.” On that day, Kenneth Arnold was flying his plane near Mount Ranier, Washington. As he looked toward the towering peak of Ranier, Arnold blinked his eyes in disbelief. There, he saw what appeared to be nine shining circular discs whizzing along at a speed he estimated to be 1000 mph! He guessed their diameter to be 100 feet.

When Arnold was interviewed later, he described his sightings, referring to the objects as “saucer-shaped.” In their stories, the reporters called the phenomena “flying saucers.”

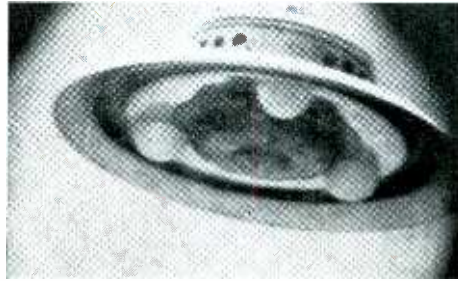
The name has stuck. Almost immediately after Arnold's report received wide publicity, reports of other “flying saucer” sightings began to come to light. Many were either intentional hoaxes or unintentional hysteria. But some were made by men who had spent years as commercial or military aviators. Some of these sightings were also backed up by simultaneous radar trackings.

The speeds of the objects, as calculated by the pilots and radar operators, were fantastic. Rapid accelerations up to 10,000 mph were estimated. The maneuverings of the saucers were also almost unbelievable. Observers reported complete reversal of direction at terrific speed — doing better than “turning on a dime.” Military pilots who tried to outmaneuver the saucers found it impossible.

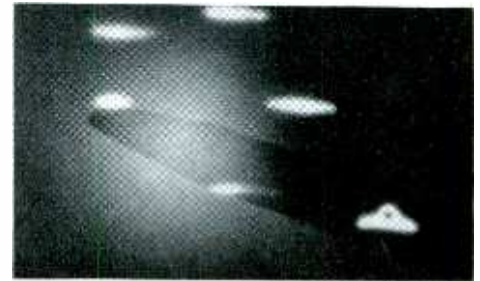
Another aspect of the mystery was the saucers' source of power. Most observers had heard no noise from the saucers. Another thing the saucers seemed to share pretty generally was a glow or light that either surrounded or emanated from them. Some people saw single saucers, others as many as two dozen. In short, these saucers, if they really existed, were something almost inconceivable by our present knowledge of both men's and machines' capabilities.

The excitement over the saucers heightened as some people substantiated their reports with photographs of the phenomena they had seen. Although some of the photos were readily perceivable as hoaxes, many of them appeared to be genuine after careful study by government experts. In two instances, observers had even taken motion pictures of saucers in flight. Both of them are in a recent movie, “Unidentified Flying Objects.”

Once the sightings were publicized, large segments of the public immediately jumped to the conclusion that the saucers were new



A photograph taken by George Adamski of what he describes as “a Venusian scout ship.” Adamski says that the three ball-shaped objects underneath the body are a type of landing gear. Most saucer “authorities” agree that the “normal” saucer scout ship is bell shaped like this one.*



The last of a rapid series of four telescopic photos taken by George Adamski on March 5, 1951. Adamski identifies this as a cigar-shaped mother ship releasing six “flying saucer” scout ships. Many people have speculated that the luminosity of the saucers is a possible source of power.*

weapons being tested by either the United States or Russia, or both. Other people concluded that the new phenomena were being controlled either personally or remotely by visitors from other solar systems. Many scientists and public officials either dismissed the reports as pure rubbish or brushed them off as optical illusions, etc.

As the controversy heightened, some men began to be looked upon as “flying saucer experts.” Even these experts disagreed among themselves as to what the saucers were or where they came from. The opinions ranged from a tacit admittance that flying saucers did exist to spectacular stories of personal contact with saucer occupants. Between these two extremes were many shades of grey. But once the admission was made that the saucers did exist, it was hard for anyone to explain how they could have come from anywhere on Earth.

For one thing, the United States, through various governmental and Air Force spokesmen, vehemently denied any super-secret flying saucer development program. So did many other governments. It seemed to make sense, too. If a government were conducting such a secret project, it would hardly dare to fly the saucers over any land but its own. Yet saucer sightings came from all parts of the world.

Finally, the United States Air Force came into the picture in 1948. The event that probably precipitated this action was the strange death of Captain Thomas Mantell. On January 7, 1948, a large glowing object was seen by hundreds of people in various parts of Kentucky. A warning was relayed to Fort Knox by State Police who estimated the object to be at least 200 feet in diameter. Finally, the object hovered over Godman Air Force Base, not far from Fort Knox.

At that same time, Captain Mantell was

flying in the area with three other F-51 pilots on a training flight. The Godman tower contacted Mantell by radio and asked him to investigate. A few minutes later Mantell radioed the tower that he had sighted the object and described it as being metallic-looking and “tremendous in size.” After a short silence, he radioed that he was going to chase it up to 20,000 feet and return to the field if he couldn't catch up with it. That was the last anyone ever heard from Captain Mantell. Later in the day, his body and plane were found wrecked about 90 miles from Godman. Although there was no evidence of fire, the plane had disintegrated before it reached the ground.

The story of Mantell's death reached a few newspapers and caused great speculation. Various explanations were advanced as to the reason for his death. Some people claimed he was chasing the sun or Venus; others felt sure he had hysteria and was chasing only a figment of his own imagination. But the fact remained that Mantell was asked to chase an Unidentified Flying Object by the Godman tower; he did not do it on his own.

Shortly after this incident, the Air Force's first investigating agency, Project “Sign” commenced operation. The group consisted of Air Force Intelligence officers, and various civilian scientists and aeronautical experts. Later the Air Force changed the name of the agency to “Grudge.” “Bluebook” became the official name in 1952 when the investigations were intensified. Several civilian groups began investigations on their own. The Air Force even went so far as to issue Technical Information Sheets (eight-page reports to be completed by personnel who have observed unidentified aerial phenomena) and Electronics Data Sheets (four-page forms to be completed

*Photographs through the courtesy of George Adamski and Abelard-Schuman, Inc., New York, publishers of *Inside The Space Ships*.

GOES ON TAPE

by ground radar people who observe an unusual radar target or track).

Although numerous reports have been issued by the investigating agencies, an aura of mystery continues to prevail around the subject of flying saucers. Many people who were once skeptical have become convinced that they are real, not just heat waves, observation balloons, mirages, or other figments of their observers' imaginations. The people who believed in the very beginning that the saucers were being flown by people from other planets have not backed down. Some of them have attempted to prove that flying saucers are not just a mid-20th century phenomenon by digging into historical records of "flaming meteors," "luminous objects," "flares in the sky," etc. One man, Desmond Leslie, has shown that flying saucer observations can be traced back almost to the dawn of civilization.

On the whole, though, most of the American public has lost interest in the flying saucer controversy because they have been occupied by more immediate matters. Since the initial period of excitement over numerous observations in the late 1940's and early 1950's, the American press has appeared to lose interest. And with fewer newspaper reports, more and more people have forgotten.

There are, however, two men in the United States who have been engrossed with flying saucers since the first flurry of sightings in 1947, and continue to be active in the field. The interesting thing about these two gentlemen is that, unlike many of the other flying saucer enthusiasts, they have not become involved in the controversy. They have written no books, been in no lawsuits. Instead, their time has been spent in a very ambitious project to keep the American public informed about Unidentified Flying Objects. Their method is to tape-record lectures, broadcasts and interviews held with and by people who are intimately involved in the controversy. The name of their project is Tape-Recorded UFO Information Service.

The first of these men is Henry M. Henriksen, the Technical Director of the Service. He is an electronics engineer who lives in Racine, Wisconsin. Mr. Henriksen became interested in the saucer controversy almost immediately after Ken Arnold's sighting in 1947, and started experimenting with tape recordings on the subject shortly thereafter.

Dr. Adolph G. Dittmar, General Co-ordinator of the Service, is a dentist who lives in Ausable Forks, New York. Dr.

Dittmar's interest in UFOs began in 1952, when he saw an article on the subject in *Life* magazine. In its story, "Have We Visitors From Space?", the publication presented its reasons for believing the existence of interplanetary saucers. Before reading the *Life* article, Dr. Dittmar had been as skeptical as anyone else about the reports of flying saucers. When a friend told him about the tape recording work Mr. Henriksen was doing on flying saucers, Dr. Dittmar began a taped correspondence with Mr. Henriksen that eventually evolved into their joint project.

One of the first flying saucer experts Henriksen and Dittmar contacted was George Adamski, who lives in Palomar Gardens, California, near the giant observatory. Although Adamski was never associated with the observatory, he had spent much time scanning the heavens with two telescopes he owned. In 1953, Adamski wrote a book, *Flying Saucers Have Landed*, in conjunction with Desmond Leslie. In his portion of the volume, Adamski reports numerous saucer sightings and even claims a personal contact with a man from Venus. Adamski was the first author on flying saucers to consent to tape recording a lecture for UFO Information Service.

To tell tape fans about the new service, Dr. Dittmar sent a taped letter to *Magnetic Film and Tape Recording* (now *Hi Fi Tape Recording*) which appeared in the February, 1956 issue of that magazine. The first three paragraphs of that letter stated the philosophy behind the origin of UFO Information Service:

"The uses of a recorder are many and varied but here is a use that will be new to many of the readers of *Tape Recording* magazine. This subject is one which a few years ago was laughed off as a joke. Today many thinking people including scientists, find much food for thought in this study. It is the study of flying saucers. Thousands and thousands of sightings have been made, many books have been written about it and flying saucer research groups have sprung up all over the world. This may seem like science fiction to many but they have not studied the vast amount of material that is rapidly accumulating.

"In California there is a Mr. George Adamski who has written two books on flying saucers, the first entitled 'The Flying Saucers Have Landed,' and the second, a new book, 'Inside the Space Ship,' in which he relates the startling experiences of meeting the visitors from outer space and riding in their space ships. He brings a wonderful message from the space people to the earth people. Of course this has caused a great deal of controversy and

(Continued on Page 6, Col. 1)



Dr. Adolph G. Dittmar, General Co-ordinator of UFO Information Service, sitting at the control panel of his home studio. To keep up with the heavy recording traffic of his post "Ditt" has: two Fen-Tone Brenell 3-speed tape decks, a Fisher master audio control, a Fen-Tone PRO2 recording amplifier, a Fisher 80 AZ 30-watt audio amplifier, and a monitoring system complete with speaker and amplifier. A red light on the outside of his studio door lends a professional atmosphere to the New York branch of UFO Information Service.

The Flying Saucer Controversy Goes on Tape

(Continued from Page 5, Col. 3)

criticism. Much of this criticism has been directed against these books and Mr. Adamski.

"But now those who have tape recorders may hear Mr. Adamski speak for himself. He has prepared a series of tape-recorded lectures, the first of which is now ready. These lectures will help remove the veil of secrecy that now surrounds the flying saucers. The most unusual feature of this announcement is that these lectures may be obtained free of charge by any who desire to hear them."

In response to this and similar publicity, more than 1000 lectures have been copied for the approximately 500 people who responded to UFO Information Service's offer. Requests for lectures have come in from all over the world. Dr. Dittmar conservatively estimates that a minimum of 1,000,000 people have heard at least one of the Service's tape-recorded lectures. The Service's library of master tapes now contains 32 lectures by leading "saucer" authorities. Descriptions of six of them give a good idea of the wide range of flying saucer information offered:

- D-1 — "An Introduction to Flying Saucers." Covers events from the first sightings up to present-day knowledge of UFOs.
- D-2 — "Hemingford, Quebec Landing." An interview with a French-Canadian family who had a flying saucer land on their farm.
- N-1 — Buck Nelson's story, in his own words, of his alleged experiences travelling in a spaceship to the Moon, Mars, and Venus.
- A-2 — An analysis of structures of the other planets in the solar system made on a basis of chemical analysis and compared with the chemical make-up of our own planet.
- BK-1 — Author of "They Knew Too Much About Flying Saucers" and editor of "Saucerian Review" and "Saucerian Bulletin" speaks on timely flying saucer subjects.
- SC-1 — A report on the Annual Spacecraft Convention held at Giant Rock, Yucca Valley, California, in April 1956 under the leadership of George Van Tasse!

Dittmar and Henriksen continue to make their service a non-profit project. They hope to develop a library of master tapes covering the viewpoints of all authors, authorities, and investigators whether they treat the subject conservatively, at the middle of the road, or hold extreme views.

Both Henriksen and Dittmar do not

necessarily agree with the opinions voiced on the tapes they have made. However, they invite any individual or group to submit material to them. If it is appropriate, it will be incorporated into the lecture series. Naturally, the Service does not assume responsibility for any statement, claim or charge made by the speakers. The sole purpose of UFO Information Service is to provide an expanding source of information on flying saucers so that the public can be made aware of the latest developments in the controversy.

As far as future plans are concerned, Dr. Dittmar feels that most of the authors on the subject have been covered. The Service will continue to accept material, but Dittmar anticipates developing a new way to provide the latest information on flying saucers. At some future date there will probably be a monthly taped newsletter varying in length from 30 to 60 minutes. For the present, Dittmar and Henriksen are making the lectures available to anyone who will guarantee an audience of at least 20 for the lecture he asks the Service to record for him. The Service will send a list of available lectures and a description of their work to anyone interested.

Requests should be addressed to:

Dr. Adolph G. Dittmar
General Co-ordinator
Ausable Forks, N. Y.

or

Mr. Henry M. Henriksen
Technical Director
1312 Grove Avenue
Racine 4, Wisconsin

The Service has endeavored to make it as simple as possible to get copies of its lectures. All they ask is that they be sent a reel of tape of a suitable length for the lectures desired; a statement of the speed at which the tape should be recorded, and whether it should be single or dual track; and enough coin or stamps to offset postage and other expenses. The Service will record the lectures requested and return the tape. Although no charge is made for the time spent in copying the master tapes, the Service does have expenses of tape and postage to create master copies, duplication and postage costs for preparing and distributing lecture description lists, etc. For that reason, the user of the Service is asked to include enough money with his request to help defray the other expenses.

Another interesting bit of information to tape enthusiasts is Dr. Dittmar's experience with the many types of magnetic recording tape he has handled in his recording work. He reports that some of the tapes cause considerable difficulty with annoying clicks and pops that just can't be erased. But he has *never had any difficulty* with Audiotape.

AUDIOTAPE RECORDS AIR FORCE SHOW



Time out for a conference about the script for "Reserved for You." The staff of the Continental Air Command's Radio-TV Division are, left to right: Program Manager T/Sgt. Jack D. Beard, Scriptwriter Airman 2/C Mike Dran, Producer Capt. Bernie Stuart, and Audio Engineer Airman 1/C Bill Blanton. Audiotape is used exclusively to record the show.

"Reserved for You" is a 15-minute weekly recorded and transcribed program produced by the Continental Air Command's Radio Television Division. The purpose of the show is to keep Reservists and the public informed of the latest developments in the Reserve Program. Over 1400 stations now carry the show, first released in 1952.

The format of "Reserved for You" features a combination of relaxing instrumental dance music and Reserve news items. Music is furnished by the Airmen of Note (U. S. Air Force Dance Band) and a combo known as the Crew Chiefs, composed of members of the larger band.

The program is tape recorded exclusively on Audiotape at CONAC Headquarters, Mitchel Air Force Base, Long Island, N. Y., and pressed and distributed by the Allied Recording Company of California.

LE BEL TO LEAD CHURCH RECORDING COURSE

Mr. C. J. LeBel, Vice President of Audio Devices, Inc., will lead a work group studying In-Church Operation and Use of the Tape Recorder at the 14th International Conference on Audio-Visual Christian Education. This conference runs from September 4-10, at Green Lake, Wisconsin. Further information may be obtained from Rev. George Ammon, Dept. of Audio-Visual and Broadcast Education, National Council of The Churches of Christ in the USA, 257 Fourth Ave., New York 10, N. Y. Co-leader of the group will be the well-known professor, John Bachman of Union Theological Seminary.

audio pointers for the Recordist

by C. J. LeBel
Vice President, Audio Devices, Inc.

A NEW REEL DESIGN

As everyone knows, magnetic tape can be handled conveniently only on a reel. The first tape reels were designed for 8mm motion picture film, but shortly after the start of tape production, demand had risen to a point where designs made especially for the tape field were practical. Several years ago we began a new plastic reel design intended to solve user problems rather than to provide mere "talking points." Our design was delayed severely by the problems of developing a sufficiently strong hub construction. These problems have only recently been solved by the use of the most modern molding techniques. However, the new Audiotape reel is now in regular production in the 7" size, and the result is good enough to justify the long wait.



C. J. LeBel

Some General Design Objectives

The prime design objective of course was to eliminate all possible wear and tear on the tape. Secondly, an easier technique for anchoring the inner end of the tape was desirable. Finally, it was necessary to remember that, since a reel is sometimes roughly handled, ruggedness is essential; the spokes must be wide enough to protect the tape (and incidentally, to write on).

Eliminating Tape Wear and Tear

The long potential life of tape is lost if the edges are nicked by sharp points, since this reduces impact strength. Surprisingly, all tape reels have had sharp edges on the spokes and hub; these we immediately replaced by rounded edges. Lettering on the inner surfaces of the flanges is attractive in appearance, but many sharp edges and corners are thereby presented to the tape; so we placed all the lettering on the outer surfaces.

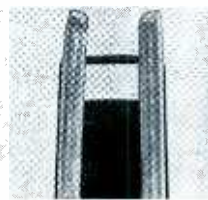
The old European idea of a radial threading slot in the spoke was thoroughly

investigated and very definitely rejected. Such a slotted spoke sooner or later tends to *twist*. Although European reel manufacturers ship their reels with cardboard spacing rings, they usually arrive as badly twisted as do their American equivalents. A twisted spoke presents one edge of the slot to the tape and abrades it at every revolution. This is illustrated in Fig. 1.

Small radial slots in the rim have been used to allow a rubber band to clamp the outer layers of tape. We rejected this idea, for constant pressure by the band will inevitably warp the flanges and allow the slot edges to scrape the tape. This is shown by Fig. 2.



1. How the twisted edge of a spoke slot can abrade edge of tape.



2. How a rubber band through rim slots will warp a reel.

Methods of Anchoring the Tape Inner End

The old idea of a radial hub slot and enlarged space in the hub is effective, but a full turn of the reel is needed to anchor the tape end; this is a nuisance. We next rejected the radial spoke slot and V hub slots widely used in Europe, since the previously mentioned analysis had indicated the harmful effect of the spoke slot. Finally, we rejected the idea of a plastic pin in the center of the hub slot; this isn't a bad idea on the NARTB reel where there is ample room to thread, but on a plastic reel space limitations make threading much too tricky an operation.

This brings us to the idea which solved the problem — the slot which is an arc of a circle, and which is so like the letter C that we call it a *C slot*. It is only necessary to pull the tape through the opening in the flange and drop it into the slot, as shown by the diagrams in Fig. 3. There's no tedious turning of the reel, as the slot is *self-locking*. Even so the tape end will pull clear of the slot without damage after rewind. It is still possible to use the old broadcast technique of pulling the tape through the space between the spokes, then turning the reel a full turn to lock the end under the next layer, and the end now passes only over rounded surfaces.

Sturdiness

Wide spokes are needed on the reel to protect tape during handling, to provide ample marking area, and to produce enough strength to withstand rough treatment in



A. Insert tape through flange opening at top of C-slot.



B. Drop tape into slot, leaving about 1 inch projecting beyond the hub with tape slack on both sides of recording head. Then press the "start" button. Tape will grip and hold firmly . . . no need to turn reel by hand to anchor free end.

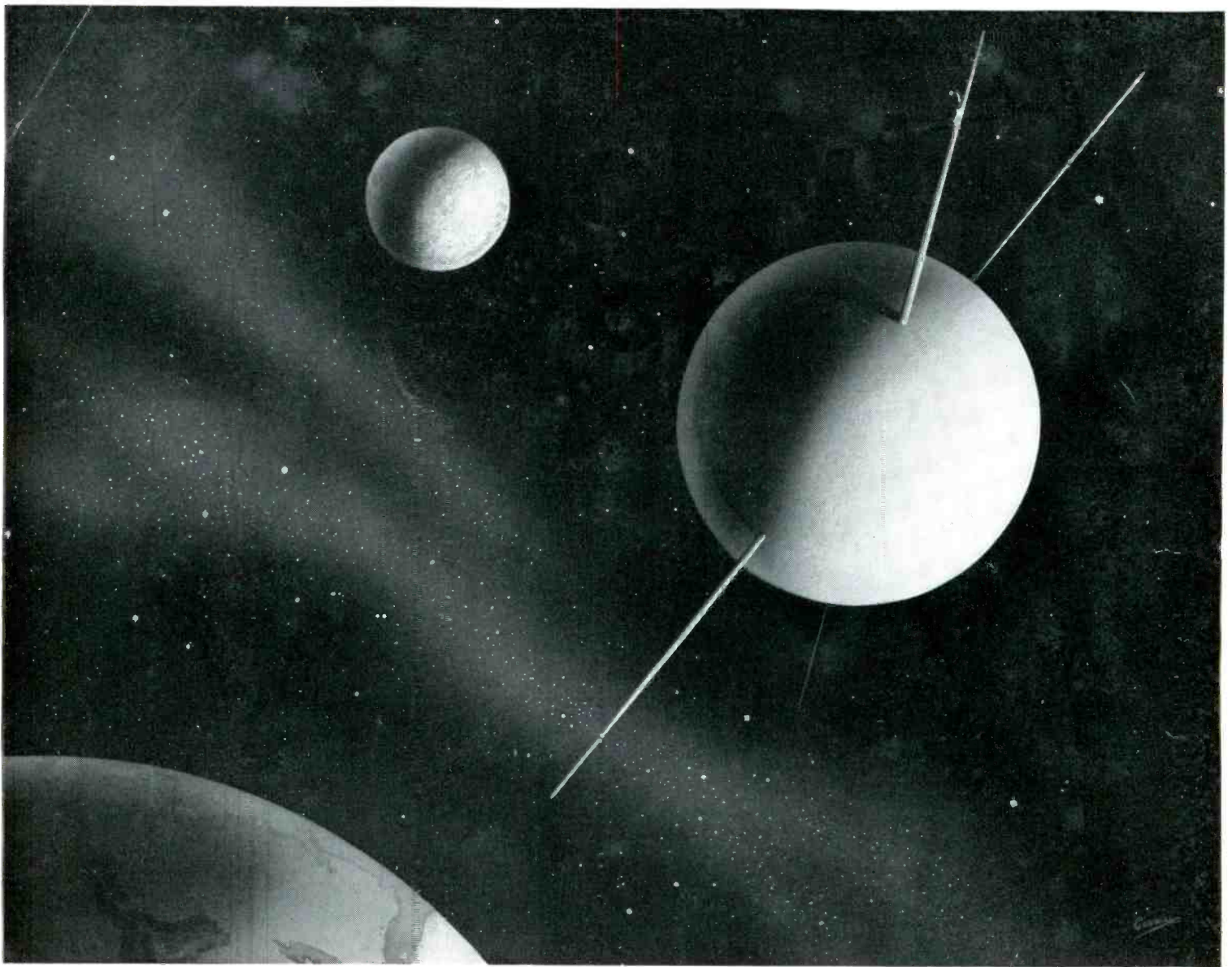
Fig. 3. Sketches illustrating the simple, two-step threading of the C-slot reel.

the field. This leads to a reel design employing four wide and rather strong spokes, and weighing fully 3½ ounces. This is double the weight of some flimsy reels now in use.

Summary

As a result of exhaustive studies, the slot and hub construction have been made very sturdy, and more complex molds have been built to produce the so-necessary rounded edges. Overall, the following advantages of the new design may be summarized:

- Eliminating reel-caused damage to tape.
- By use of rounded edges
- By avoiding lettering on inner surface of reel
- By avoiding radial slots in spoke or rim
- More convenient method of anchoring tape end — the C slot.
- More strength for better tape protection in handling.
- By use of wide spoke
- By adequate spoke thickness



recording the "man-made moon" on extra-precision audiotape*

EARLY in 1958 there will be a "new moon" in the sky — a 22-inch sphere circling the earth at a speed of 18,000 mph. Unlike our real moon, this one will be able to "talk" to Earth. And engineers from Army Ordnance Ballistic Research Laboratories at Aberdeen Proving Ground, Maryland will study these messages to learn new facts about our solar system.

"moon-talk" — radio signals from precision instruments on the satellite — is so vital that they are recorded for later analysis and preservation.

The highest standards of reproduction must be met. There can be no distortion, voids, or other imperfections.

The tape chosen was extra-precision Type EP Audiotape.

The highest professional standards of quality and uniformity extend throughout the *entire Audiotape line*,

making it the best selection for *any* recording application.

Whether you are an engineer recording highly technical information or a neophyte placing his first reel on a tape recorder, Audiotape will speak for itself. It is now available in *five different types* to meet every recording need and every tape budget. *trademark

For complete information on the earth satellite recording project write us for a free copy of the December issue of Audio Record.

AUDIO DEVICES, Inc.

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