

ESSENCE BOOKSHELF

OWNER'S MANUAL

1 | 2012

THANK YOU

Thank you for your purchase of the Zu Audio Essence Bookshelf loudspeaker system. Every element is designed for a lifetime of hassle-free high-performance playback. It's our intent that these loudspeakers exceed every reasonable expectation in product performance, quality, durability and customer service, for as long as you own them.

ZU VISION FUTURE & PAST

Impressions of new realities struggle and flow—eventual transition.... Awareness of surroundings, songs of tranquility and warning—history and intuition instruct that patterns of sound have been a fundamental constant. Observance of nature, both physical and spiritual, teach us of the endless interplay of vibrational forces.

While traveling the line of time we observe many periods of increased awakening and technological advancement but none so powerful and rapid as that of the Scientific Revolution, Enlightenment and the birth of modern physics. The dramatic increase of understanding regarding possibility, vibration and energy coincide with our collective ability to listen and express patterns of life. David Toop in his book *Ocean Of Sound* paints a powerful image of our modern musical creativity: "...Starting with Debussy in 1889, is an erosion of categories, a peeling open of systems to make space for stimuli, new ideas, new now, this environment included sounds of the world—previously unheard musics and ambient sounds of all kinds, urban noise and bioacoustics... unfamiliar tuning system and structuring principles, improvisation and chance."

Welcome to Zu



ESSENCE BOOKSHELF (((WARNINGS)))

WARNINGS

Never leave children unattended in your playback room. Care should be taken to prevent accidents.

(Besides, you already know if you let them in your room uneducated and unattended they are going to bust your needle, play catch with your discs, bend your tube pins, and write their name on your new leather chair—good secondary reasons for spending time with ‘em. So hang with your kids, grand kids, and neighbor kids, listen to some great music together, teach ‘em about playback and great music. Introduce them to Lucinda Williams, The Clash, Miles, Hendrix, Beethoven, Zeppelin, Sinatra, Rush, Silver Jews, Debussy, Woody Guthrie, Deep Purple, Wagner, Black Keys, Marty Robbins, Kyuss, Spoon, Steve Earle, Sabbath, Velvet Underground, Eels, CVB, Joanna Newsome, Ry Cooder, Cash, Ryan Adams, Zappa, John Prine, The Who, Ian McKay, Zakk Wylde, Sex Pistols, Julian Cope, Alice In Chains, Legendary Pink Dots... the Stones, Charlie Parker, Hank Williams, Elvis, Beatles and Mozart.)

CAUTION: the tweeter used in the Essence will be damaged if blown on with compressed air, tearing the aluminum foil diaphragm. Never use compressed air on Essence without first protecting the ribbon by masking the opening closed with tape; don't package or transport them without protecting the tweeters with masking tape. Avoid blowing on them. Apart from wind damage the ribbon tweeter is a solid and a tough design, but in the event that you let your kids play with the compressed air hose around your speakers, and a tweeter was torn, please give us a call and we'll get you fixed up.

The ESSENCE Bookshelf loudspeaker system is not intended for outdoor use, do not expose to rain or moisture.

Also, we recommend unplugging your loudspeakers, main amplifier(s) and electronics during lightning storms or when the playback system will not be used for an extended period of time.

WARNING: Electrocution through loudspeaker cable is possible, though very unlikely. Still, to avoid electrocution make sure your amplifying gear is switched off prior to connecting or disconnecting. This will also reduce the possibility for accidental damage to your audio amplifier.

WARNING: Essence Bookshelf loudspeakers are moderately heavy bookshelf loudspeakers, consider asking a buddy to assist you.

WARNING: Essence Bookshelf loudspeaker drive units create stray magnetic fields that extend far beyond the boundaries of the cabinet. We recommend you keep magnetically sensitive electronics and media at least two feet [.7m] from the loudspeaker.

WARNING: Essence Bookshelf loudspeakers are capable of extreme sound levels, play responsibly. If caution is not exercised your hearing will be damaged. And your neighbors will either hate you or want to party with you.

ESSENCE BOOKSHELF UNPACKING

UNPACKING

Essence Bookshelf features our new FlexPak foam-encapsulating shipping container—which is extremely protective, lightweight, simple, and reusable. One matched pair of Essence Bookshelf loudspeakers are packed in one box.

CAUTION, watch out for snaps, rivets, jewelry, and belt buckle scratching the cabinets when positioning the loudspeakers.

1. Make sure your path is clear and your room is made as open as possible. If lifting is required, lift with your legs and not your back, and if you are not accustomed to lifting, get the assistance of a friend.
2. Lay a moving blanket, or similar, down on your floor.
3. Using a hand truck to make it easier, wheel the packaged loudspeakers into the room and lay the box on its side.

NOTE: Shipping companies are not allowed to enter your home.

4. Cut the banding with a knife, and while still laying down, cut the tape securing the tabs on either end of the box. You do not need to cut the box off the speaker, be nice to your box and save the packaging.
5. Sit down in front of one of the open ends, grab the box flaps with your hands, and with your feet press the foam encapsulated loudspeakers out the other end.
6. With the loudspeakers still horizontal, remove one of the foam halves. Now remove one loudspeaker at a time. And while resting it on the blanket, carefully remove the plastic wrap.
7. Now place the loudspeaker on the shelf of choice, connect the cables, and remove the plastic protective disc covering the full-range driver.

ESSENCE BOOKSHELF PLACEMENT

QUICK TIPS ON GETTING GREAT SOUND FROM ESSENCE BOOKSHELF

Essence Bookshelf loudspeakers now get 200 hours or more of factory burn-in, they will sound good right out of the box but will not give you their best for a few weeks, depending on how much play, and how cold they got in shipping, as well as what kind of music they see. If shipped in the winter months you can expect them to need the first week to warm up and start sounding good, not sure why, it just is.

Remove the protective plastic shipping discs covering the full-range drivers. (Yes, there have been a few times “speakers didn’t sound right” just to find out the full-range shipping discs were still in place.)

DON’T CLEAN YOUR TWEETERS WITH COMPRESSED AIR OR VACUUM CLEANER. IN FACT, DON’T EVEN BLOW ON ‘EM. THE RIBBON ELEMENT OF THE TWEETER (SHINY BIT UNDER THE SCREEN) CAN BE TORN. IF YOU WANT TO DUST YOUR SPEAKERS WITH A CAN OF COMPRESSED AIR, OR SOME KIND OF VACUUM, YOU MUST TAPE CLOSED THE TWEETER SCREEN

BASIC PLACEMENT

Essence Bookshelf loudspeakers are designed for bookshelf play. Try and place them in the same elevation that you will be enjoying them. If you are using them to fill a space with music, where you are likely to be wondering about, place them between four and seven feet off the ground. If you are going to be using them at a workstation, then ear-level when you are working.

While your initial placement for the Essence Bookshelf loudspeakers may not be the acoustic ideal, know they are not hyper-sensitive to where in your room they are placed and you should get satisfactory performance from most any position. Nevertheless, you will be rewarded if you work on setting them up for the best sound. The following details may assist you in the pursuit of tone, texture, and realistic stereophonic recreation. Loudspeakers should be placed to work with the natural acoustics of the room rather than fight them. The following basic points should be followed.

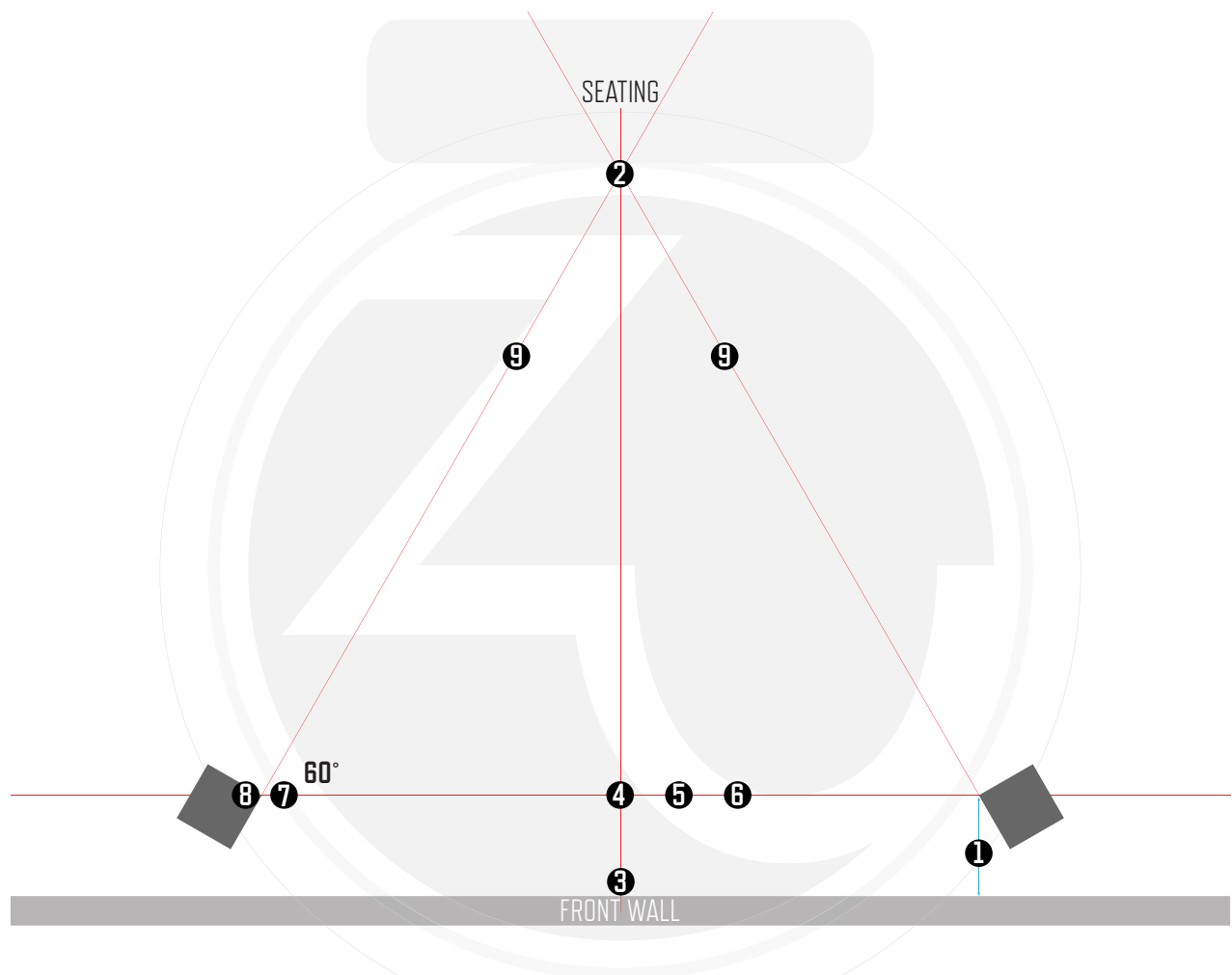
- Turn your electronics off before disconnecting and connecting your loudspeakers.
- Connect loudspeaker and amplifier RED to RED | BLACK to BLACK.
- Position left and right speakers symmetrically (classic stereo arrangement but wider) for best stereophonic playback.
- Point Essence Bookshelf loudspeakers directly at central listening seat for greatest intimacy.
- Point Essence Bookshelf loudspeakers directly forward for less treble and more diffused playback.
- Subtle changes to cabinet rotation (toe-in) and tilt (canting) significantly change sound.
- Experiment with placement to get best sound.
- A great setup book is Jim Smith’s, Get Better Sound. www.GetBetterSound.com

ESSENCE BOOKSHELF STEREO TUNING

TWO-CHANNEL STEREOPHONY TUNING

Recommended tools: tape measure, masking tape, Strait-Line® intersect laser level, or similar (inexpensive and useful for leveling wall art when you aren't using it for fiddling with your hi-fi).

Getting convincing two-channel stereophonic effect is a matter of measuring and mirroring. Don't fuss over whether or not your loudspeakers are perfectly square with the walls, or get obsessive with the room's mathematical relationship. To do so is to waste time and possibly mess things up.



ESSENCE BOOKSHELF STEREO TUNING

(Reference illustration—two-channel stereophonic loudspeaker setup)

- 1) Measure and note the distance from the wall behind to the positioned loudspeaker's inside forward base corner.
- 2) Sit in your center seat, mark the center spot of the floor right between your feet with a bit of masking tape.
- 3) With the Strait-Line® intersect laser level in hand, stand and walk straight ahead to the facing wall. Butt the intersect laser level up against the wall and position the laser so the side plane laser indicator runs parallel with the wall, and the center plane intersects your seating center mark.
- 4) From the wall, along the center laser mark pointing at your chair, measure the same distance as in step one, and mark with a bit of tape. These two points establish your stereo center plane.
- 5) Move the intersect laser level forward so the intersection is on that bit of masking tape nearest the wall and the center laser mark intersects your seating center mark. This should result in the orthogonal laser striking the tuned loudspeaker right on the inside front corner.
- 6) Measure and note the distance from the laser intersect to the point of laser contact (inside front base corner) on the positioned loudspeaker.
- 7) Reflect this distance on the other side of the stereo plane, marking the mirrored distance with tape.
- 8) Now place the second speaker's inside front corner on this mark and approximate the toe-in by pivoting it on this inside front corner. If fine tuning of toe-in is needed pivot either loudspeaker on the front inside corner footer only. This will keep the mirrored stereo relationship the same and you won't have to get the laser and tape measure out every time you mess with toe-in.
- 9) While you can also use lasers to adjust and ensure mirrored stereo toe-in, we recommend that initially you eyeball it based on the amount and angle of the loudspeaker's visible inside cabinet edge. Before you get "laser crazy" with toe-in we highly recommend that after you get close, by eyeballing it, you then level your loudspeakers, or start messing with firing axis (canting and elevation, which Essence is sensitive to) for which the laser is also a very handy, sometimes essential tool.

ESSENCE BOOKSHELF CABLE

WIRE AND CABLE

The most common abuse in hi-fi is to use cable as a form of tone control. Doing so usually leads to frustration and further loss of fidelity. When cable affects timbre it affects timing, phase, frequency response, and so on. Avoid using cables as tone controls.

Timbre problems are usually solved with loudspeaker break-in and correct loudspeaker placement. If the cable has good properties relative to phase, gain, group delay, impedance, and bandwidth, it will likely convey with fidelity the transmitted emotion and color. As an aside, avoid taking other people's opinions on cable as gospel—just because a reviewer makes blanket statements about cable “sound” means little relative to your rig and your ears. So trust your own ears, they're yours for a reason. Also, bear in mind that just because you had a good sound with cable A on loudspeaker X does not mean that cable A will be a good system match for Essence loudspeakers.

For best stereophonic imaging you should run matched pairs of left / right cable of the same length. If tone is more your thing and stereophonic effect is not so important then length matching of left / right channels is not critical.

While insulation, jacket materials, pigments, conductor shape, metallurgy and structure are important (yep, they really are), all pale into insignificance compared to the influence of electrostatic / electromagnetic forces, virtual ground plane, and conductor relational geometry. It is the E&M model, or cable geometry, that largely determines a cable's measured attributes.

Improvements that will be noticed from well engineered cables such as ours should include: enhanced bass depth and resolution, lower system noise floor, richer harmonic structure and timbre, faster attack, greater stereophonic accuracy and an overall ease of listening—simply a lot closer to real and satisfying and a lot further from typical hi-fi animation. But this assumes you are striving for the natural. Preferences in playback are just that, and individual enjoyment really is the goal, and not some ideal of what playback should be. Yes you can strongly feel our hepcat bias, but that's just us—do what makes you happy, and hopefully it includes some Zu.

GRILLE

The grille on the Essence Bookshelf is designed to offer true protection for the drivers. Unlike basic cloth grilles which are largely cosmetic; the aluminum grilles, with the ball and socket fastening, look great and keep everything safe from all sorts of accidents. To put the grille on, simply line up the pins with the sockets and press. To remove, unplug one socket corner at a time. If the grille becomes bent simply reform it by hand and it's good to go.

ESSENCE BOOKSHELF MAINTENANCE

MAINTENANCE & CLEANING OF THE LOUDSPEAKERS

Zu finishes of all types are engineered for a lifetime of trouble free good looks. Just wipe 'em down whenever you feel the need. A lightly damp microfiber cloth or chamois is recommended. Wood finishes are impregnated with a sealer and state-of-the-art conversion varnish top coats and are highly water resistant but are not waterproof. You can use any household wood finish cleaner / wax / polish you like, as well as the mentioned damp chamois or microfiber cloth.

High gloss finishes do not need any additional UV or other protection and we do not recommend wax or UV protective sprays. For serious cleaning and polishing on the gloss finishes, we recommend 3M® Perfect-It™ 3000 Glaze Polish or equivalent. All our painted finishes are top shelf, super durable, waterproof, and will remain so for decades, even in direct sunlight.

Dusting of the 10" full-range drivers should only be done with hand-held compressed air as used in photograph and sensitive electronics dusting. Or, if you are careful, you can use a very soft brush or even your bare hand to dust the full-range driver—but I would stick to the compressed air. And as for the tweeter, not much you can bungle there.

The unplated pure copper binding post terminals should be cleaned once or twice a year using the supplied polishing compound. Once you have cleaned and polished the binding posts and spade lugs (if you are also using our unplated pure copper spade lugs) avoid touching the spades or the binding posts. Keeping the contacts free of the halides on your skin help ensure a long term and trouble free connection.

Instructions for cleaning and polishing the binding posts.

1. Wash your hands with soap and water prior to cleaning the terminals.
2. Completely remove the binding post knob and black plastic clamping block. This will make for easy access of the copper lugs.
3. Using the supplied pink colored polish cloth (labeled "copper polish") rub the exposed copper lug until it is clean, usually about 15 to 30 seconds is all that is needed.
4. Before the polish dries, wipe polish off the copper lugs with the supplied buffing cloth. (DO NOT WASH POLISH OFF WITH CONTACT CLEANER, POLISH MUST BE REMOVED BY BUFFING ONLY.)
5. Refit the black plastic clamping block, red mark up, and binding post clamping knob.
6. Again wash your hands with soap and water. The pink polishing cloth does contain a small amount of petroleum distillate.

The supplied pink polishing cloth is good for roughly ten years or one hundred binding post cleaning's and should be stored and tightly sealed to keep it from drying out. The pink polishing cloth should be replaced if it becomes dry or if it becomes excessively dirty (all black and gray with no pink). If you are also using our loudspeaker cable fitted with our pure copper spade lugs, we recommend that you clean your spades the same time that you clean the binding posts. Polish each spade for 15 to 30 seconds then buff with a buffing cloth.

ZU ECOLOGY

MATERIALS, ENVIRONMENTAL REGULATIONS & DISPOSAL

All parts used within Essence Bookshelf are 100% recyclable. They do not contain any toxic material. Any Zu product or part may be sent back to Zu, free of charge, for proper re-use or disposal. Zu Essence Bookshelf loudspeakers are RoHS compliant (European Union's Directive 2002/95/EC, Restrictions of Hazardous Substances), and therefore do not contain any of the following substances: mercury (Hg), cadmium (Cd), hexavalent chromium (Cr6+), polybrominated biphenyls (PBB), or polybrominated diphenyl ether (PBDE). Additionally, Zu Essence loudspeakers do not contain beryllium (Be). They are classified as a lifetime life-cycle product and will most likely be in service for well over 50 years.

ENVIRONMENTAL STATEMENT / HONEST ECOLOGY

We at Zu take pride in hard work, innovation, engineering and manufacturing know-how, and at the end of it, an honest, well built, kick-ass product. We also love to get out and enjoy life and embrace all that the world has to offer.

Zu is sincere in its search for real environmental, human and ecology-friendly manufacturing; no fluffy feel-good bullshit, just the real deal; and not because of some great googly moogly "climate change" geopolitical power play nonsense. It's simple isn't it? People like being healthy and enjoying blue skies, green hills and wildlife. We keep our impact to a minimum because we get out and enjoy nature and don't want to muck it up.

Zu makes good stuff, products that last, things you can pass down to your kids and their kids, stuff that isn't going to end up in landfills. Want to make a difference? Do a little research on your own before you fall for hype, support a cause, discriminate, or purchase a product. The people driving and building Zu believe that manufacturers and users have equal responsibility and an obligation to their respective communities. Users and producers must search for real solutions and maximize their positive impact on family, community, nature, and technology.

REUSE

 **RoHS**



CE





ESSENCE BOOKSHELF SPECIFICATIONS

ZU AUDIO ESSENCE BOOKSHELF Mk.I [REV-A] LOUDSPEAKER SYSTEM SPECIFICATIONS

Description	Essence is a high efficiency, high output, direct radiating bookshelf loudspeaker. It features a full-range Zu designed and built driver with no crossover or filters on full-range driver, complimented by a high output transformer coupled ribbon tweeter to provide the sparkle and resolution from 10 kHz and up.
Production	January 2011—
Dimensions H x W x D	18 x 11 x 11 [46 x 28 x 28cm]
Weight	33 pounds [15kg] // may vary with finish selection
Packaged	FlexPak foam encapsulated
Bandwidth	48—40,000Hz
Efficiency	97dB SPL @ 1W, 1m
Impedance	12Ω, nominal full bandwidth
Horizontal Listening Window	45°
Vertical Listening Window	40°
Recommended Listening Distance	4 feet [1m] or more
Recommended Connector	1/4" fork spade [6.3mm] or oversized 5/16" [8mm] fork spade
Accepted Connectors Via Adapter	the above plus bare wire (banana plugs in a pinch)
Internal Cabling	Zu Mission cable harness, pure copper, approximate conductor area is 13AWG per charge
Power Recommendations	2—8 watt (average room, moderate volume) 8—32 watt (large room, loud listening) 32—90 watt (large room, concert levels) 200 watt (maximum input power)
Amplification Considerations	all types, tubes and solid-state, anything that sounds good.
Component Tolerance	drivers 1% pair matching, 0.01% on electrical components
Tweeter Detail	1x TB-1855S-B ribbon, final foil adjustment and assembly by Zu // bandwidth: 12k—40kHz+
High-Pass Detail	2nd order besel @ 18kHz (12kHz acoustical) Kimber Kap 2uF + 2.0mH
Full-range Driver Array Detail	1x Zu260FRD/G4/ESSENCE full-range driver // bandwidth: 30—12kHz (direct and unfiltered)
Cabinet	MDF / Baltic or Finish birch
Spike / Feet Insert Thread	3/8—16 TPI, 9/16" hex nut, 14mm wrench can be used
Included With Loudspeaker	2x hard press-on full-range driver covers, installed 1x connector cleaning kit, 1x finish cleaning cloth, 1x instruction booklet
Loudspeaker Options	custom finish work, actively amplified via Hypex AS2.100
Life Expectancy	40 years; cabinet, and the Zu 10" drivers; 15 years on TB-1855S-B ribbon (foil will likely need replacement)
Manufacturers Country Of Origin	U.S.A. all parts and labor excluding the TB ribbon tweeter which is a product of Taiwan
Compliances of Directives	RoHS CE WEEE
Warranty & Service	5 years limited on cabinet and drivers—warranty does not cover misuse, abuse, components upstream from the loudspeaker system, modifications or non-factory service.

ESSENCE BOOKSHELF ACOUSTICS

RECOMMENDED READING ON ACOUSTICS

Whatever the reason, the current consumer playback world is generally lost in its conception of acoustics and the nature of sound—much has been written in the hi-fi world but little of it is genuine. For a great nontechnical loudspeaker setup book, get Jim Smith's, *Get Better Sound*. Self published, www.GetBetterSound.com.

Recommended works on the subject of acoustics representing a good cross-section include:

Helmholtz, Hermann L. F., *On The Sensations of Tone*, 4th ed. trans. Alexander J. Ellis (Dover, 1954. Original 1885-77)

Rayleigh, J.W.S. Baron, *The Theory of Sound*, 2nd ed. Vol. 1 & 2, (Dover, 1945. Original 1894)

Lamb, Horace, Sir, *The Dynamical Theory of Sound*, 2nd ed. (Dover, 1960. Original 1925)

Jeans, James, Sir, *Science & Music*, (Dover. Original 1937)

Olson, Harry F., Music, *Physics and Engineering* (Musical Engineering), 2nd ed. (Dover, 1967. Original 1952 & 1967)

Benade, Arthur H., *Fundamentals of Musical Acoustics*, 2nd ed. (Dover, 1976, 1990)

Kinsler, Frey, Coppens, and Sanderds, *Fundamentals of Acoustics*, 3rd ed. (Wiley, 1982)



ZU AUDIO

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