Music on the Ribs: Clandestine Audio, Shadow Markets, and Administrative Waste in the Postwar Soviet Union

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Human Knowledge Synthesis Systems

Date: October 2026
Version: 1.0
Publication Type: Working Paper / Preprint
Version DOI: https://doi.org/10.5281/zenodo.24010617
Concept DOI: https://doi.org/10.5281/zenodo.24010616

Abstract: Underground enterprise lives in the blind spots of the planned state. Across postwar Leningrad, home mechanics etched banned jazz and outlaw ballads into salvaged medical film, turning clinical scrap into contraband music.Finished discs revealed the skeletal rib cages of clinic patients beneath the sound groove, circulating on the black market as bones or ribs. The bootleg catalog paired American jazz and rock and roll with suppressed Russian singers, notably Pyotr Leshchenko and Vadim Kozin. Soviet authorities prosecuted the trade as unauthorized enterprise rather than ideological subversion, sending lathe mechanics Boris Taigin and Ruslan Bogoslovsky to labor camps. State security countered street sales with volunteer patrols and sabotaged decoy discs. Consumer reel-to-reel tape recorders in the 1960s made mechanical lathes obsolete, ending the bone trade. Surviving discs document both an underground manufacturing network and the institutional waste on which that shadow economy depended.

Keywords: Administrative Waste, Bone Music, Clandestine Manufacturing, Command Economy Accounting, Contraband Media, Format Obsolescence, Lathe Recording, Magnitizdat, Media Archaeology, Postwar Leningrad, Pyotr Leshchenko, Ribs Audio, Roentgenizdat, Second Economy, Shadow Economy, Soviet Cultural Censorship, Stilyagi Subculture, Unauthorized Enterprise, Vadim Kozin, X-Ray Audio

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Administrative Accounting and the Sourcing of Clinical Waste

Contraband thrives in the margins of state accounting. In postwar Leningrad, the cheapest surface for a forbidden song was the inside of a stranger's chest. Bootleggers bought stacks of used hospital X-ray film for a few rubles or a bottle of vodka, carrying them home under an overcoat.[1] Commercial vinyl did not exist in state stores, and early bootlegs cut on coated cardboard wore out after a few plays.[2]

Hospitals accumulated exposed film by the thousands, filing the sheets before mandatory disposal. Because

[1] Stephen Coates, ed., *X-Ray Audio: The Strange Story of Soviet Music on the Bone* (London: Strange Attractor Press, 2015); Stephen Coates, *Bone Music: Soviet X-Ray Audio* (London: Strange Attractor Press, 2023).

[2] "Bone Music," *99% Invisible*, produced in collaboration with the Kitchen Sisters, accessed October 31, 2026, https://99percentinvisible.org/episode/bone-music/transcript/.

nitrocellulose film was combustible, Soviet fire codes required clinics to destroy exposed sheets after one year.[3] That disposal mandate created the supply. Once marked for the incinerator, a plate cleared the hospital ledger, ceasing to exist as state property before it left the building. An orderly trading expired plates sold waste that no state auditor would ever seek. Contraband began the moment hospital clerks wrote the film off as medical waste.

Bootleggers trimmed each sheet into a rough circle with manicure shears, burning the spindle hole with a cigarette.[4] While an original record played on a gramophone, a homemade lathe cut a spiral groove into the emulsion, engraving each copy one by one. The finished object was a flexible, translucent disc holding a single song.

Held to the light, a finished disc revealed a rib cage or spine beneath the sound groove. Routine tuberculosis screenings across Soviet clinics supplied the images that named the trade. Buyers called the records *rebra* or ribs, while others said *kosti* or bones, styling the underground network *roentgenizdat* after the dissident literary press *samizdat*.[5]

The disc united two institutional operations on a single surface. A worker screened for pulmonary disease or a patient treated for a fracture became the physical base for an illicit tango or a foreign foxtrot. The film held a clinical diagnosis and its disposal; the groove held sound purged from official Soviet culture.

Ideological Purges and the Prohibited Repertoire

The market for bone records began with the songs the state removed from circulation. During the immediate postwar years, jazz and Western dance music played openly across Soviet cities. Audiences watched Hollywood musicals during the wartime alliance, while demobilized soldiers brought commercial discs home from Central Europe. Municipal dance pavilions played foxtrots and tangos.[6] Official tolerance ended in 1948. In February of that year, the Central Committee issued its resolution condemning formalism in music, treating Western popular songs as ideological subversion. State agencies disbanded jazz orchestras and purged saxophones from municipal ensembles, sentencing prominent bandleaders to labor camps.[7] State factories stopped pressing Western tunes, while radio committees cleared syncopated dance music from broadcast schedules.

Official culture offered a substitute. The Komsomol organized municipal dances with approved music, enforced by monitors watching from hall perimeters. The jazz musician Aleksei Kozlov recalled these evenings as rigid drills, governed by strict dress codes.[8] That regimentation drove listeners elsewhere.

[3] Alice Nicolov, "The Secret History of the Soviet X-Ray Vinyl Black Market," interview with Stephen Coates, *Dazed*, August 3, 2016; Coates, *X-Ray Audio*.

[4] "Bone Music," *99% Invisible*; Coates, *X-Ray Audio*.

[5] Coates, *X-Ray Audio*; Gian Maria Volpicelli, "X-Ray Decks: The Lost Bone Music of the Soviet Union," *New Statesman*, August 1, 2017.

[6] Juliane Fürst, *Stalin's Last Generation: Soviet Post-War Youth and the Emergence of Mature Socialism* (Oxford: Oxford University Press, 2010); Miriam Dobson, "Tuts on the Trolleybus," review of *Bone Music: Soviet X-Ray Audio*, by Stephen Coates, *London Review of Books* 45, no. 7 (2023).

[7] Central Committee of the All-Union Communist Party, "On the Opera *The Great Friendship* by V. Muradeli," February 10, 1948, translated as "Against Formalistic Tendencies in Soviet Music" in *Seventeen Moments in Soviet History*, accessed October 31, 2026, https://seventeenmoments.web.illinois.edu/1947-2/zhdanov/zhdanov-texts/against-formalistic-tendencies-in-soviet-music/; S. Frederick Starr, *Red and Hot: The Fate of Jazz in the Soviet Union, 1917–1980* (New York: Oxford University Press, 1983).

[8] Aleksei Kozlov, memoir (2007), quoted in Dobson, "Tuts on the Trolleybus"; Fürst, *Stalin's Last Generation*.

Private apartments with wind-up gramophones became the primary rooms for forbidden music, and every gramophone needed records.

The contraband catalog included foreign jazz and banned Russian songs. Discs of emigre singers brought premium prices on the black market. Pyotr Leshchenko, an emigre tenor celebrated for Russian tangos and romances, recorded extensively for European labels from his base in Bucharest, making his catalog contraband across the Soviet border. Romanian security arrested Leshchenko in 1951. Leshchenko died in prison three years later.[9] Police arrested Vadim Kozin, the country's most celebrated tenor, in 1944, exiling him to the Kolyma camp complex for the rest of his life.[10] Kozin never returned west. Alongside these figures, bootleggers reproduced urban underworld romances and camp ballads detailing Gulag existence.[11] On the lathe, foreign dance tunes and prison songs shared the same plastic, priced on the black market as scarce goods.

By 1949, young listeners formed a visible subculture. In March 1949, the satirical journal *Krokodil* printed a feuilleton by D. Beliaev introducing the *stiliaga*, the style-hunter, an urban youth caricature defined by exaggerated Western clothing and anglicized slang.[12] Young people embraced the label. Crowds gathered along Nevsky Prospekt in Leningrad and Gorky Street in Moscow, wearing clothes altered to match foreign magazines and dancing the boogie-woogie behind closed doors.[13] On street corners, fans christened Nevsky Prospekt "Broadway." Official slogans warned that dancing to jazz today meant betraying the homeland tomorrow, which fans adopted as an ironic motto.[14]

The clothing came from the same underground economy as the records. *Stiliagi* wore drainpipe trousers and thick crepe-soled shoes, dancing steps known as the Canadian or the atom dance.[15] State shops sold none of these clothes. Tailors altered state clothing in back rooms. A tailor recutting trousers to Western cuts and a lathe operator engraving jazz onto medical film supplied the same clientele.

The West that Soviet youth imagined through these discs was an invented world. For the anthropologist Alexei Yurchak, this "Imaginary West" was an internal identity assembled from shortwave radio and black-market records, lived within everyday Soviet institutions without active political opposition.[16] The bone record made that world real. The disc delivered foreign dance music into living rooms without commercial packaging, pressed into the X-ray plate of an anonymous citizen. The forbidden music circulated on the scrap material of the society that outlawed it.

While *stiliagi* gave the trade its public face, buyers came from across Soviet society. Older listeners bought Leshchenko and Kozin to hear the songs of their youth, while factory workers and university students

[9] Coates, *Bone Music*; Dobson, "Tuts on the Trolleybus."

[10] "Singer Kozin Dies at 92," *Moscow Times*, December 1994, https://www.themoscowtimes.com/archive/singer-kozin-dies-at-92; Dobson, "Tuts on the Trolleybus."

[11] Coates, *Bone Music*; Sergey Chernov, "British Musician Tells Story of Russian Records on Bones," *Moscow Times*, May 5, 2015.

[12] D. Beliaev, "Stiliaga," *Krokodil*, March 10, 1949, 10, translated in *Seventeen Moments in Soviet History*, Michigan State University, accessed October 31, 2026, https://soviethistory.msu.edu/1954/stilyaga/stilyaga-texts/krokodil-on-stilyaga/.

[13] Mark Edele, "Strange Young Men in Stalin's Moscow: The Birth and Life of the Stiliagi, 1945–1953," *Jahrbücher für Geschichte Osteuropas* 50, no. 1 (2002): 37–61; Fürst, *Stalin's Last Generation.*

[14] Edele, "Strange Young Men in Stalin's Moscow"; Alexei Yurchak, *Everything Was Forever, Until It Was No More: The Last Soviet Generation* (Princeton, NJ: Princeton University Press, 2006).

[15] Dobson, "Tuts on the Trolleybus"; Edele, "Strange Young Men in Stalin's Moscow."

[16] Yurchak, *Everything Was Forever*, 158–206.

bought dance discs for weekend parties. Supplying that expanding audience took more than an occasional cut on a kitchen table. That scale required workshops that could turn out discs in volume.

Clandestine Lathes and the Workshop Economy

In Leningrad, that production began with two teenagers, Boris Taigin and Ruslan Bogoslovsky, who traded commercial records before building their own cutting machine in 1946. Working from designs copied from other bootleggers and an imported Western machine, Bogoslovsky built a lathe that cut clean microgrooves into exposed X-ray film. The partners set up a home workshop, turning out discs in steady volume.[17]

Taigin and Bogoslovsky named the enterprise the Golden Dog, *Zolotaia Sobaka*. Borrowing from the His Master's Voice trademark, the name mocked Nipper, the terrier listening to a gramophone horn. Onto finished discs, the partners hand-stamped that dog caricature.[18] A trademark created in London in 1899 to certify commercial authenticity reappeared fifty years later on unauthorized Soviet bootlegs.

The Golden Dog operated like a small factory. Taigin and Bogoslovsky bought source recordings from merchant sailors and diplomatic contacts, copying them onto film. As orders grew, the workshop built more lathes. Bogoslovsky refined his recording heads to reduce surface friction, cutting discs that played with less background hiss than rival bootlegs; later bootleggers remembered him as the best technician in the postwar Soviet underground.[19]

Every bone copy required a clean source record. Commercial discs were the rarest contraband. Leningrad's Baltic port was the primary entry point, where merchant sailors returning from abroad smuggled 78-rpm shellac discs hidden among foreign textiles.[20] Other recordings crossed Soviet borders from Eastern Europe, where Western records circulated under fewer restrictions.[21] A single imported disc supplied the music for hundreds of bone copies. Safely stored in a private collection, the original survived while flexible copies spread across city streets. The bone lathe functioned as a domestic printing press.

Technical knowledge spread through informal apprenticeships. Bogoslovsky had adapted his first lathe from existing bootleg equipment, and competing mechanics quickly duplicated his modifications. An apprentice released from jail after a street fight worked in Bogoslovsky's workshop until he learned enough machining to build his own rig.[22] Militia raids closed individual rooms, but technical knowledge spread across workshops faster than the state could suppress it.

Late in 1950, state security officers raided the apartment, ending four years of steady production. Because the workshop produced contraband goods for profit, officers from the economic crimes division handled the arrest, charging the partners with unauthorized entrepreneurship and speculation.[23] Ideology triggered the ban, but accounting dictated the punishment. A Leshchenko tango drew state censure for ideological deviation; its bootlegger went to the Gulag for unregistered profit. Sentenced to corrective labor camps,

[17] Coates, *Bone Music*; Dobson, "Tuts on the Trolleybus"; "Bone Music," *99% Invisible*.

[18] Dobson, "Tuts on the Trolleybus"; Coates, *Bone Music*.

[19] Stephen Coates, "Ruslan Bogaslovsky's Criminal Record," X-Ray Audio Project, September 21, 2021, https://www.x-rayaudio.com/x-rayaudioblog/2021/9/21/ruslan-bogaslovskys-criminal-record.

[20] "Inside the Covert World of Bootleg X-Ray Records," *National Geographic*, May 2017; Coates, *X-Ray Audio*.

[21] Coates, *X-Ray Audio*; Coates, *Bone Music*.

[22] Dobson, "Tuts on the Trolleybus."

[23] Dobson, "Tuts on the Trolleybus."

Bogoslovsky served three years. Taigin received five years behind wire followed by five years of internal exile in Siberia.[24]

Stalin's death in March 1953 brought mass prison amnesties, returning both founders to Leningrad. The founders took different paths. Taigin composed poetry during confinement, joining Leningrad's underground literary circles while earning a living as a tram conductor. Bogoslovsky resumed recording after each release, constructing new lathes and serving three prison terms for bootlegging.[25] Although warehouse fires destroyed his machinery decades later, his family preserved his original lathe drawings.[26] Across the 1950s, his workshop and competing underground studios supplied an expanding network of street dealers across the city.

Shadow Distribution, Pricing, and Street Risk

The distribution network operated along sidewalks and courtyards. In Moscow, customers met young men in heavy overcoats standing opposite state phonograph shops, opening their coats to reveal rows of bone records pinned to the wool lining.[27] The street layout mirrored the market. The state store sold approved records, while the alleyway opposite sold banned music to the same customers.

Prices reflected scarcity and legal risk. A single bone record cost about a week's industrial wage, or three bottles of vodka.[28] Transactions happened fast, without playback testing. Bootleggers scratched titles into the emulsion with needles, leaving buyers to trust the seller and the skeletal fragments visible in the plastic.[29] Discs occasionally contained different songs from the titles promised. Others held only silent grooves or damaged audio.

The records sounded crude. Medical film was soft compared to commercial shellac, and improvised motor drives caused pitch wobbles. Veteran bootleggers described the sound as falling sand.[30] A bone disc lasted twenty or thirty plays before the needle wore the groove into static. Listeners put up with the hiss because state shops offered no alternative.

Street vending carried physical risks independent of state policing. Bootleggers faced robbery by criminal gangs targeting cash and records during handoffs; neither seller nor buyer could turn to the law.[31] The trade operated outside legal protection. A dealer could not report stolen inventory, and a cheated buyer had no way to recover rubles from a seller who slipped into a dark courtyard.

Without legal contracts, the market ran on personal trust. Regular buyers returned to established dealers, while sellers saved their best records for buyers introduced by trusted friends. Word of mouth traveled through universities and jazz circles. Dealers known for clean cuts charged more than street hustlers. The price of a bone record absorbed the cost of hospital film and lathe parts, but the largest share covered the dealer's personal risk.

[24] Dobson, "Tuts on the Trolleybus."
[25] Dobson, "Tuts on the Trolleybus"; Coates, "Ruslan Bogaslovsky's Criminal Record."
[26] Coates, "Ruslan Bogaslovsky's Criminal Record."
[27] "Bone Music," *99% Invisible*.
[28] "Bone Music," *99% Invisible*.
[29] "Bone Music," *99% Invisible*; Coates, *X-Ray Audio*.
[30] Volpicelli, "X-Ray Decks."
[31] Dobson, "Tuts on the Trolleybus."

Total production figures remain uncertain. Popular accounts claim millions of discs circulated. The music critic Artemy Troitsky estimated that total Soviet production across the entire era did not exceed a million units, a small fraction of the magnetic tapes that followed.[32] Yet the network was vast. That network supplied major cities for over a decade, driven by several dozen lathes and street rings.

State Enforcement: Militia Raids, Satire, and Audio Decoys

Police targeted both ends of the trade, the workshops and the street. Militia squads raided home workshops, confiscating cutting lathes and prosecuting operators under statutes carrying three to five years of camp imprisonment.[33] Under Khrushchev, sentences eased. Journalists complained in print that bootleggers walked away with suspended terms. Between 1953 and 1960, the population of the labor camps fell from nearly two and a half million to roughly five hundred thousand inmates.[34] The bone trade flourished as prison sentences softened.

State media carried the campaign into the press. *Krokodil* and the Leningrad youth journal *Smena* published cartoons caricaturing *stiliagi* alongside black-market dealers. In 1962, *Pravda* printed a satire mocking dealers who engraved dance rhythms onto human remains. The verse rhymed spine with samba, and pelvis with mambo.[35] Official verse depicted dance tunes etched into human bones. For bootleggers and buyers, that picture proved the disc was genuine.

Volunteer detachments policed public streets and rail stations. The Komsomol mobilized youth brigades, the *druzhiny*, to monitor dance halls and transit centers, stopping black-market sellers and youths in foreign clothes. A 1960 documentary, *Shadows on the Pavement*, filmed volunteer squads confronting young dealers trading records outside the GUM department store on Red Square.[36] Patrols confiscated discs and sent formal denunciations to university deans and factory committees.

State authorities also laid audio traps for buyers. Security agencies released counterfeit X-ray discs into street circulation, matching the look of real bootlegs while sabotaging the recording. The recorded song played for several bars before cutting out, replaced by an official voice scolding the listener for buying anti-Soviet music.[37] In public alleys, buyers had no way to test audio before paying. A buyer who spent a week's wages only to hear an official reprimand was unlikely to buy on the street again.

Everyday social pressure was just as sharp. For most young listeners, the biggest hazard was routine harassment, delivered through public rebukes on trolleybuses and arguments on the street.[38] Factory groups and apartment committees kept up a pressure that police patrols could manage only in bursts. A student buying bone records risked prison in theory and daily ostracism in practice. The market survived because buyers outlasted the patrols.

[32] Artemy Troitsky, quoted in Coates, *X-Ray Audio*.
[33] "Bone Music," *99% Invisible*.
[34] Dobson, "Tuts on the Trolleybus."
[35] Dobson, "Tuts on the Trolleybus."
[36] Dobson, "Tuts on the Trolleybus."
[37] "Bone Music," *99% Invisible*.
[38] Dobson, "Tuts on the Trolleybus."

Technological Displacement: Consumer Tape and Magnitizdat

Consumer tape recorders ended the bone trade. During the early 1960s, Soviet factories began mass-producing reel-to-reel tape recorders, building roughly fifty million units over the next three decades.[39] A tape deck copied sound from shortwave broadcasts or vinyl records at home, needing neither a cutting lathe nor hospital scrap. Copying sound shifted from secret workshops to living rooms.

Informal tape distribution took the name *magnitizdat*, carrying the guitar poetry of the 1960s and the underground rock bands of the 1970s.[40] Bone records were the opening phase of Soviet audio piracy, collapsing under tape competition. Recording lathes fell into disuse. Listeners discarded thousands of bone discs or used them as drink coasters. Bootleggers either switched to tape or left the business.

Magnetic tape changed the economics of forbidden sound. Songs passed from recorder to recorder among friends, losing fidelity with each copy.[41] The street dealer lost commercial control because anyone with a tape recorder could duplicate a reel. Legal risk dispersed across millions of living rooms, overwhelming the police. Contraband sound moved from scarce plastic to private abundance, shifting state attention from the makers of bootleg discs to the songwriters themselves.

Veteran bootleggers bridged both eras. Rudy Fuchs, a Leningrad bootlegger of the late 1950s, became a leading tape producer for the outlaw balladeer Arkady Severny.[42] Fuchs's career linked two generations of contraband sound. The technology changed, but the distribution networks endured.

In the 2010s, the British musician Stephen Coates discovered an X-ray disc in a St. Petersburg flea market. Played on a London turntable, the needle found Bill Haley's "Rock Around the Clock." Held to the window, the disc revealed a pair of skeletal hands.[43] Coates's discovery led to the X-Ray Audio Project, bringing traveling exhibitions and two books based on interviews with surviving bootleggers.[44] Museum collections across Europe and North America now display bone records as historical artifacts.

The collector market inverts the original trade. Soviet buyers bought bone records for the music, throwing them out when groove wear ruined the sound or tape made them obsolete. Today, collectors pay for the visual image; a worn disc showing a clear skull or spinal column fetches more than a pristine recording of a rare song. A disposable bootleg is now a museum artifact. Institutions prize the physical traces of its clandestine manufacture.

Material Remains and the Limits of Administrative Control

Surviving bone records document the workshop economy that produced them. An off-center spindle hole and wandering edges show an object made entirely by hand. Surface wear across the groove records how long the disc circulated through private rooms before the music gave way to noise.

[39] Dobson, "Tuts on the Trolleybus."

[40] Yurchak, *Everything Was Forever*; Artemy Troitsky, *Back in the USSR: The True Story of Rock in Russia* (London: Omnibus Press, 1987).

[41] Troitsky, *Back in the USSR*; Yurchak, *Everything Was Forever.*

[42] Chernov, "British Musician Tells Story of Russian Records on Bones."

[43] Dobson, "Tuts on the Trolleybus."

[44] Coates, *X-Ray Audio*; Coates, *Bone Music.*

Authorized Soviet pressings concealed their vinyl beneath paper labels printed with approved titles. The contraband disc came from a single source cut in a bedroom, bearing no official stamp beyond the rib cage of a stranger, laying bare its medical film across the entire playing surface.

Listeners lived with that strange contrast. At an apartment party in Leningrad, someone dropped a skeletal hand or rib cage over the spindle and lowered the needle. The room danced to a tango by a singer who died in a labor camp. To the buyer, the visible anatomy distinguished illicit workshop manufacture from a state pressing.

The artisan workshops that cut bone records disappeared when magnetic tape decentralized the trade, and the music they preserved eventually returned to public circulation. Yet surviving bone records document more than an era of underground piracy. These discs record the structural limit of total administrative control. A command state can nationalize industrial manufacturing and purge broadcast archives, but it cannot halt the physical waste generated by its own institutions. In striking exposed film from clinic ledgers to balance its books, the bureaucracy created the exact medium that carried prohibited sound beyond state authority. Across every surviving disc, a suppressed song and an anonymous citizen remain bound together, etched into the margins of an accounting system that wrote them both off as waste.

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