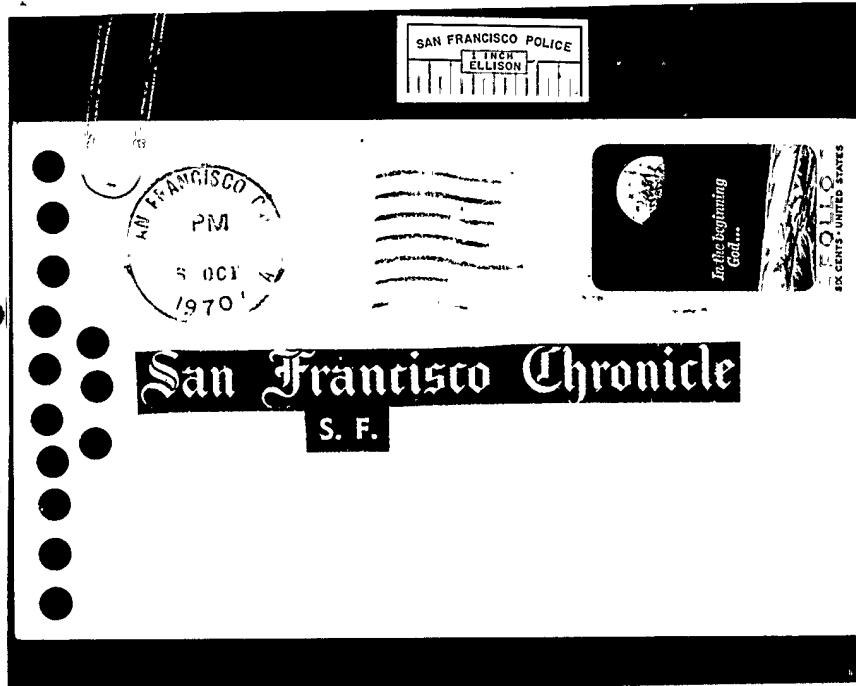


9-49911-13X

Contained
SO Report

QC 57



Mon., Oct. 5, 1970

DEAR EDITOR:

You'll hate me, but I've got to tell you.

THE PACE ISN'T ANY SLOWER! IN
FACT IT'S JUST ONE BIG thirteen

13 "Some of Them Fought
It Was Horrible"

I'm crackproof, What is
closing in on me, The

city police big cops are
P.S. THERE ARE REPORTS

Zodiac



QC 58

9-49911-161

Dear Mr. Editor,

Did you know that the initials SLA (Symbionese Liberation Army) spell "ik", an old Norse word meaning "kill".

a friend



EISENHOWER-USA

Editor
San Francisco Chronicle
San Francisco, California

Negatives

9-49911-161

Negatives

D.690808059

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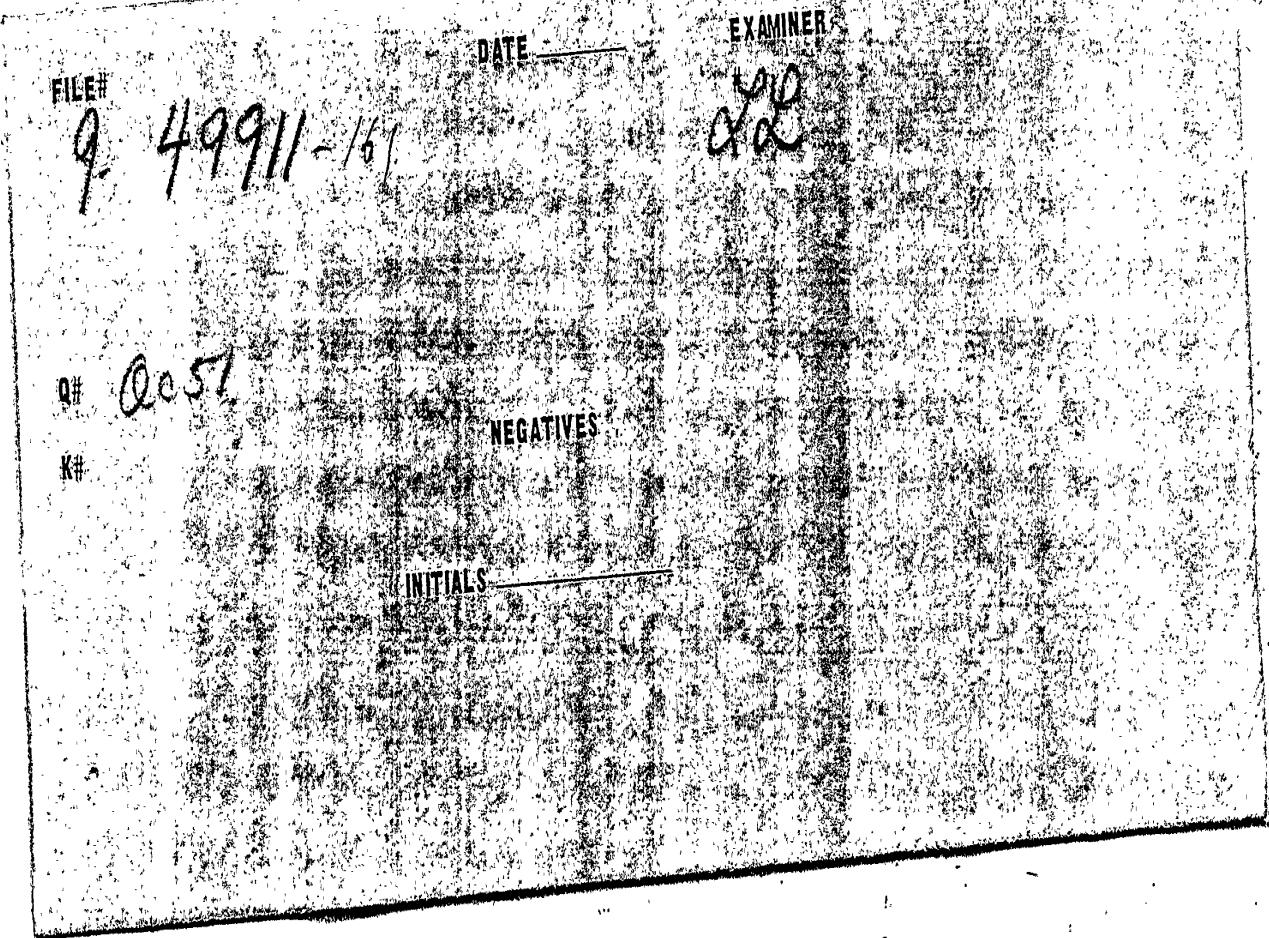
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Q16-18

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9-49911

Q19 + Q20



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EXAMINER

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Q# C62 : C63

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DATE 6/78

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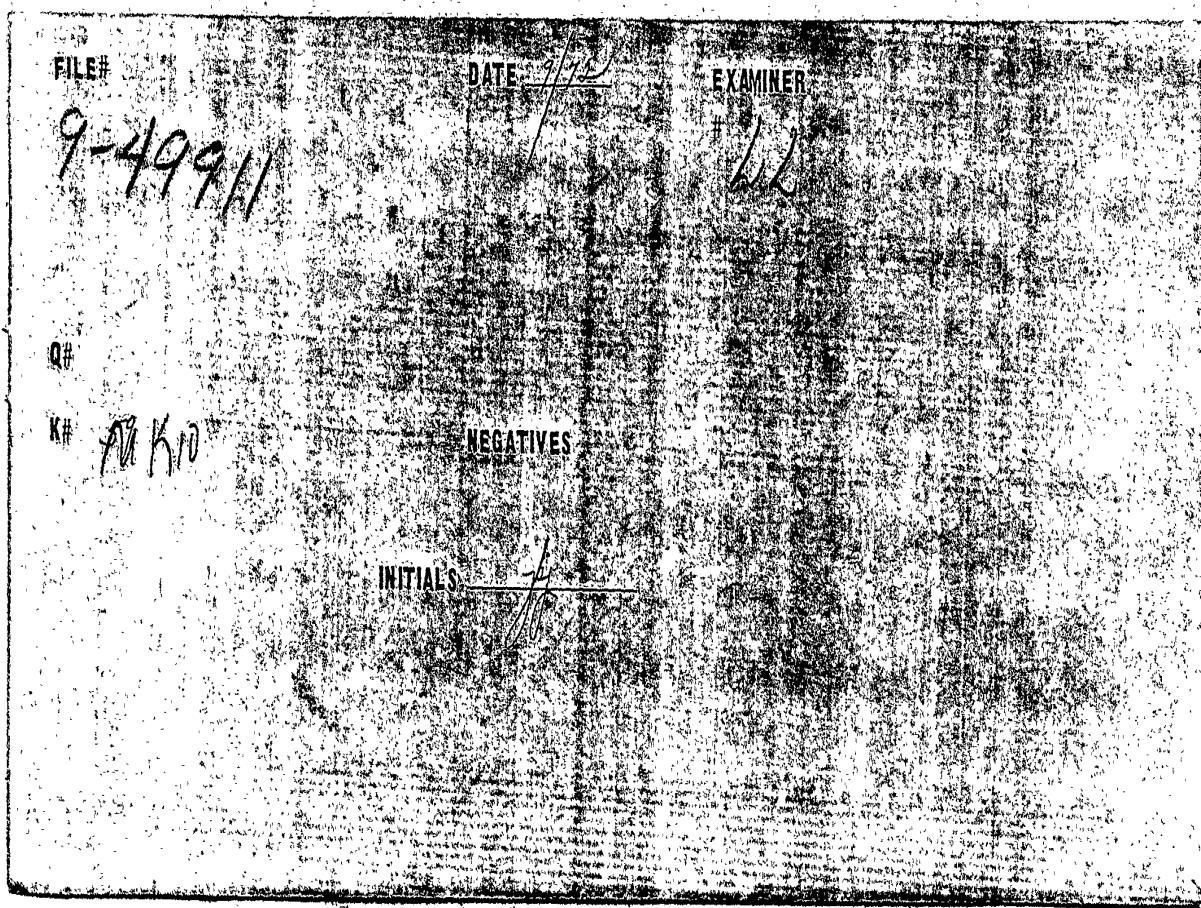
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NEGATIVES

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EXAMINER

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NEGATIVES

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NEGATIVES

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FBI/DOJ

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DATE _____

EXAMINER LL

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9-49911

Also submitted material

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FILE# 9-49511-161

DATE

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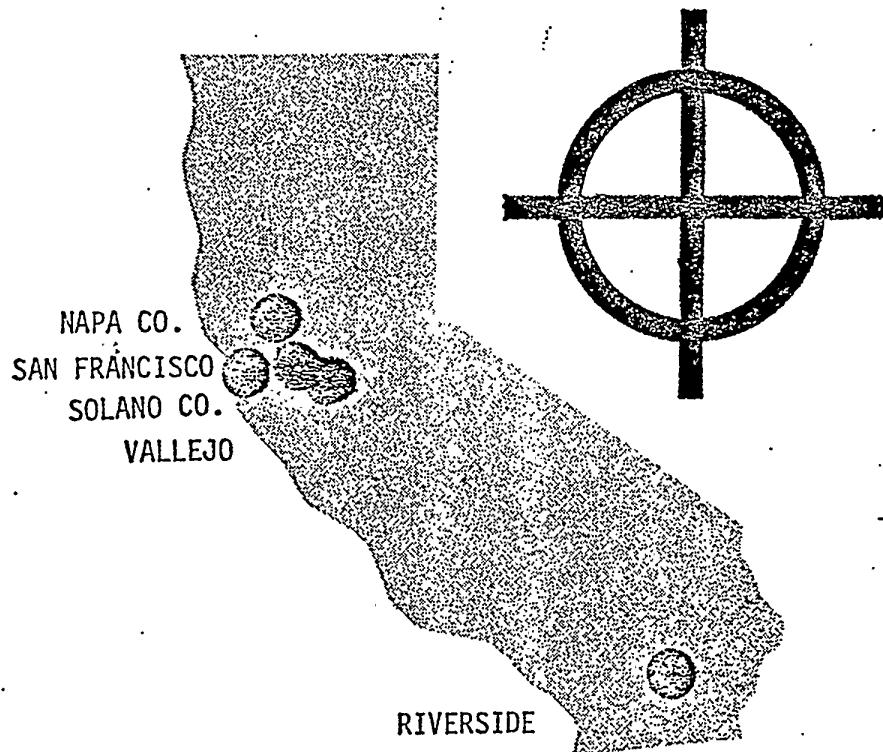
Q4-015

NEGATIVES

INITIALS

CALIFORNIA DEPARTMENT OF JUSTICE/DIVISION OF LAW ENFORCEMENT/BUREAU OF INVESTIGATION

SPECIAL REPORT



ZODIAC HOMICIDES

FOR LAW ENFORCEMENT USE ONLY



Date: October 30th, 1966 - Sunday night

Time: Approximately 6:15 PM

Victim: Cheri Jo Bates - Female Caucasian, 18 years
Riverside City College freshman

Location: Riverside City College campus

Victim parked her vehicle in front of Riverside City College library just prior to 6 PM and entered library building. Suspect disabled victim's vehicle by removing coil wire and evidently waited for victim to return. Suspect then either forced or enticed her approximately 300 feet to an unpaved parking area between two vacant houses where he attacked her with a small knife having a blade approximately 3 1/2" in length and 1/2" in width. Victim suffered seven lacerations on her throat and death was due to hemorrhage of the right carotid artery. There was no evidence of sexual molestation. No witnesses.

Heelprints identical to those worn by Air Force personnel and a Timex wrist watch indicating that the suspect had a 7" wrist circumference were found at the scene of the crime.

Suspect mailed typewritten confession letter from Riverside to the Police Department and Riverside Enterprise newspaper on November 29th, 1966, claiming to be the perpetrator of the crime.

Three additional handprinted letters were mailed in Riverside by the suspect on April 30th, 1967, again claiming the Bates homicide and indicating there would be more.

Evidence:

Handprinting

Latents

Military heelprints

Timex wrist watch

Typewritten confession letter

Riverside Police Department case #352-481

Investigating officer: Captain [redacted]
4201 Orange St. - 92502
Phone 714-787-7011

b6
b7C

Date: December 20th, 1968 - Friday night

Time: Between 11:14 and 11:20 PM

Victims: Betty Lou Jensen - Female Caucasian, 16 years (student)
David Farraday - Male Caucasian, 17 years (student)

Location: Isolated lover's lane area approximately five miles east
of Vallejo.

Victims were evidently in their vehicle when suspect approached. Male victim shot in head through left ear at contact range and was found on ground on passenger side of vehicle. Female victim shot five times right side of back and was found lying 28'6" from right rear bumper. No statements from victims and no witnesses. No evidence of sexual molestation.

Weapon: .22 caliber semi-automatic. Possibilities - J. C. Higgins Model 80 or High Standard Model 101.

Ammunition: .22 caliber Super X copper coated long rifle.

Evidence:

.22 caliber bullets and casings
Handprinting

Solano County Sheriff's Office case #V-25564

Investigating officer: Sgt. [redacted] b6
1350 Virginia St. - 94590 b7C
Phone 707-643-6495

Date: July 4th, 1969 - Friday night

Time: Approximately midnight

Victims: Darlene Ferrin - Female Caucasian, 22 years (waitress)
Michael Mageau - Male Caucasian, 19 years (laborer)

Location: Blue Rock Springs Park approximately 4 miles northeast of downtown Vallejo. An area frequented by lovers during evening and early morning hours.

Victims were sitting in vehicle in parking lot. Suspect parked his vehicle approximately 10' to rear of victims' and left headlights on. Suspect approached victims' vehicle on passenger side with large handle type flashlight directed into victims' faces. Suspect fired five shots into vehicle striking male and then female. When suspect started to walk away the male victim screamed and suspect returned and fired four more shots into vehicle. The suspect did not say anything to the victims prior to the shooting.

Female victim suffered multiple bullet wounds and was DOA at hospital.

Male victim shot in left knee and face, survived the attack.

Male victim described suspect as Male Caucasian, 26-30 years, 5'8", 200 pounds, light brown hair, no glasses or mustache. Described suspect vehicle as brown and shaped like a Corvair.

Weapon: 9mm semi-automatic

Possibilities regarding manufacture of weapon:

Browning
Smith & Wesson
Star
Astra
Llama
Neuhausen
Zebrojoka
Husqvarna
Esperanza

Ammunition: 9mm Winchester Western

Suspect phoned the Vallejo Police Department from downtown Vallejo at 12:40 AM on July 5, 1969. Stated he had just committed a double murder, gave location and also claimed the killings on December 20th, 1968. Call made from pay phone through operator. No distinguishable voice characteristics.

Suspect sent letters and cryptogram to newspapers subsequent to the crime claiming credit for the Vallejo and Solano County homicides. Cryptogram was deciphered and suspect indicated that killing people was more fun than sexual relations and that the people he killed would be his slaves in his after life. (See attached cryptogram).

Evidence:

9mm casings and bullets
Handprinted letters

Vallejo Police Department case #243146

Investigating officer: Detective Sgt. [redacted]
P. O. Box 1031 - 94590
Phone 707-643-5661

b6 -
b7C

Date: September 27, 1969 - Saturday (daylight)

Time: Approximately 6:15 PM

Victims: Cecelia Shepard - Female Caucasian, 22 years (college student)
Bryan Hartnell - Male Caucasian, 20 years (college student)

Location: Shoreline of Lake Berryessa in Napa County

Victims parked their vehicle alongside main highway and walked 510 yards to shoreline where they laid down on a blanket. Female victim observed suspect step behind tree. When suspect emerged and approached victims he was wearing a black hood with white circle and cross hair in center. Suspect was armed with what appeared to be a semi-automatic pistol. He told the victims that he was an escapee from Deer Lodge Prison, Montana, was enroute to Mexico and wanted their car keys and money. Suspect carried on a rather lengthy conversation with male victim then had female tie male with pre-cut clothes line. He then tied female and retied male. Suspect placed gun in holster, took a large knife out of a sheath, stabbed male victim six times in back, then stabbed female victim both back and front. Male victim feigned death and suspect departed. Did not take money or car keys. After the attack suspect printed message on right passenger door of victim's vehicle, again indicating he was responsible for the Solano County, Vallejo and Napa County homicides.

Approximately one hour and ten minutes after the crime the suspect phoned the Napa Police Department from downtown Napa reporting a double murder and giving the location. The call was placed through an operator and the suspect did not hang up the phone. No distinguishable speech characteristics were noted.

Female victim died on September 29th.

Male victim survived.

Male victim described suspect as Male Caucasian, 20-30 years, 5'10" - 6'2", 220 pounds, brown hair, (visible through eye slots in hood) wearing black hood, lightweight windbreaker dark blue or black, dark baggy pleated slacks, very sloppily dressed with protruding stomach. No distinguishable speech characteristics.

Hood described as black in color with four corners at the top similar to a paper sack, sleeveless with the front panel coming down just below the chest with white circle and cross hair middle of chest. Appeared well made, well sewn with clip on sunglasses on the outside. Victim not positive suspect had glasses on under hood. Gun described as blue steel semi-automatic pistol, possibly .45 caliber, carried in a plain black holster with flap.

Knife described as having blade approximately 12" in length, 1" in width. Possibly sharpened on both sides similar to a bayonet. Appeared to have a wooden handle with two brass rivets and 1" white adhesive tape wrapped around the handle where the guard would normally be. (May be encased in wooden sheath.)

Shoeprints identical to military "Wing Walker Boots" were tracked from the road to the scene of the crime and back to the passenger side of the victim's car. (See attached photos).

Evidence:

Latents

Handprinting

White plastic clothes line, hollow core

Military shoeprints

Napa County Sheriff's Office case #105907

Investigating officer: Captain [redacted]
810 Coombs St. - 94558
Phone 707-255-5500

b6
b7C

Date: October 11th, 1969 - Saturday

Time: 9:55 PM

Victim: Paul Stine, Male Caucasian, 29 years (Yellow Cab driver)

Location: Washington & Cherry Streets, San Francisco

Victim picked up suspect at Mason and Geary Streets, proceeded to Washington and Cherry where suspect shot victim once behind right ear at contact range. Suspect took victim's wallet, taxi keys and tore a portion from the back of his shirt. Witnesses observed suspect wipe inside of cab with a cloth, then walk nonchalantly away from the cab toward the Presidio, an army installation.

Witnesses described suspect as Male Caucasian, 35-45 years, 5'10", 190 pounds, crew cut reddish blonde hair, eye glasses with plastic frames, wearing parka type jacket, navy blue or black, dark baggy trousers and paunchy stomach.

Weapon: 9mm semi-automatic, possibly new model Browning. (Not same 9mm as used in Vallejo Police Department case.)

Ammunition: 9mm Winchester Western

Evidence:

Two portions of victim's shirt (white with black stripe)

Handprinting

Latents

9mm bullet and casing

Black leather men's gloves size 7

Subsequent to the homicide the suspect mailed a series of post cards and letters, two which contained a portion of the cab driver's shirt.

San Francisco Police Department case #696314

b6
b7C

Investigating officers: Inspectors [redacted]

850 Bryant St. - 94103
Phone 415-553-1145

All homicides have been committed on weekends, Friday through Sunday.

All letters the Zodiac has mailed in Northern California have been postmarked in San Francisco with the exception of one that was mailed in Pleasanton to the Los Angeles Times on March 13, 1971. In the letter he acknowledged he had committed the Riverside homicide in 1966. This being the only time the Zodiac has reference to this particular murder. The last correspondence received from the Zodiac was March 22nd, 1971.

All letters are handprinted, over posted with stamps on sideways or inverted. Suspect misspells simple words apparently on purpose.

Contents of letters tend to indicate the suspect may possess knowledge of the following:

Cryptography

Meteorology

Explosive devices

Charts and terminology used in conjunction with the compass

Latent print identification. (Wiped down cab and claimed he used clear plastic cement on fingers.)

Typewriter identification. (Mailed fourth or fifth carbon copy of confession letter in Riverside.)

Light opera. (One letter contained excerpts from opera "Mikado.")

Conclusions that may be drawn from suspect's activities:

Likes publicity

Enjoys ridiculing police

Claims to be crack proof (egotist)

Cultist (States persons killed will be slaves in after life.)

Does not panic in stress situations

Suspect may possess the following:

(2) 9mm semi-automatic pistols of different manufacture

.22 caliber semi-automatic pistol
9mm Winchester Western ammunition
.22 caliber Super X copper coated long rifle ammunition
.45 caliber blue steel semi-automatic
Portion of cab driver's shirt - white with black stripe
Victim Stine's wallet and taxi keys
Black hood with white circle and cross
Clip on sunglasses
Windbreaker - dark blue or black
Pleated baggy slacks - dark in color
Large knife having blade approximately 12" in length, 1" in width,
wooden handle with two brass rivets and 1" wide adhesive tape
around handle. May be encased in wooden sheath.
White plastic clothes line - hollow core
Portable Royal typewriter - Elite type - canterbury shaded
Black Wing Walker Boots 10 1/2 R
Handle type flashlight
Small knife with blade 3 1/2" in length, 1" in width. May have broken
tip.
Felt pens
Complete newspaper and magazine article accounts of Zodiac homicides

This bulletin has been compiled in conjunction with the investigating agencies and distributed by the State Department of Justice, Law Enforcement Division, Bureau of Investigation. The Bureau of Investigation maintains a file of all suspects that have been eliminated as a result of handprinting comparisons. Pending receipt of any additional evidence, handprinting is the most positive method of identification or elimination of suspects. Identity of suspects that have been eliminated may be obtained by contacting Special Agent [redacted] California Department of Justice, Bureau of Investigation, P. O. Box 13327, Sacramento, California 95813, phone 916-445-9002.

b6
b7C

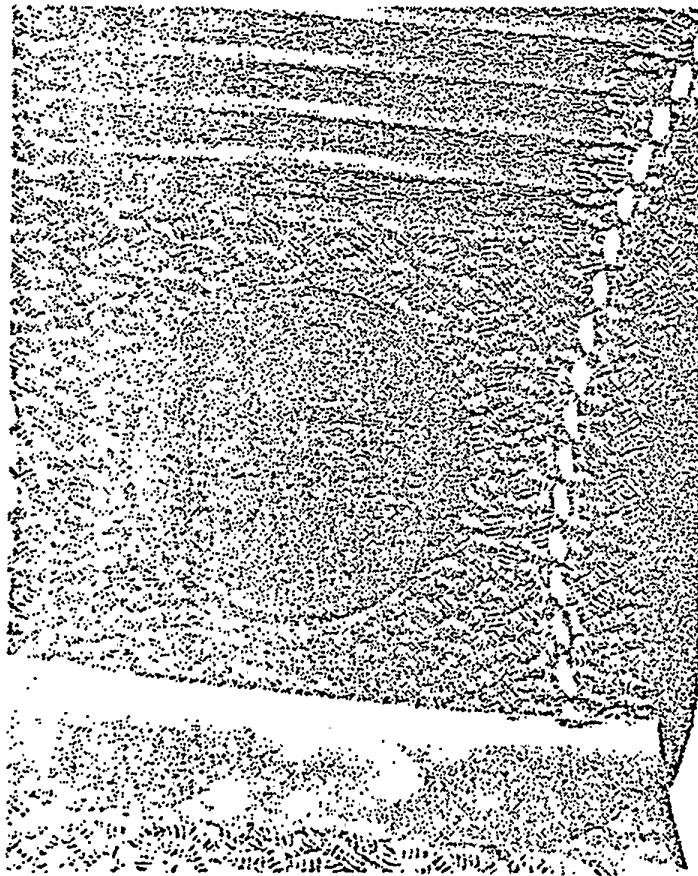
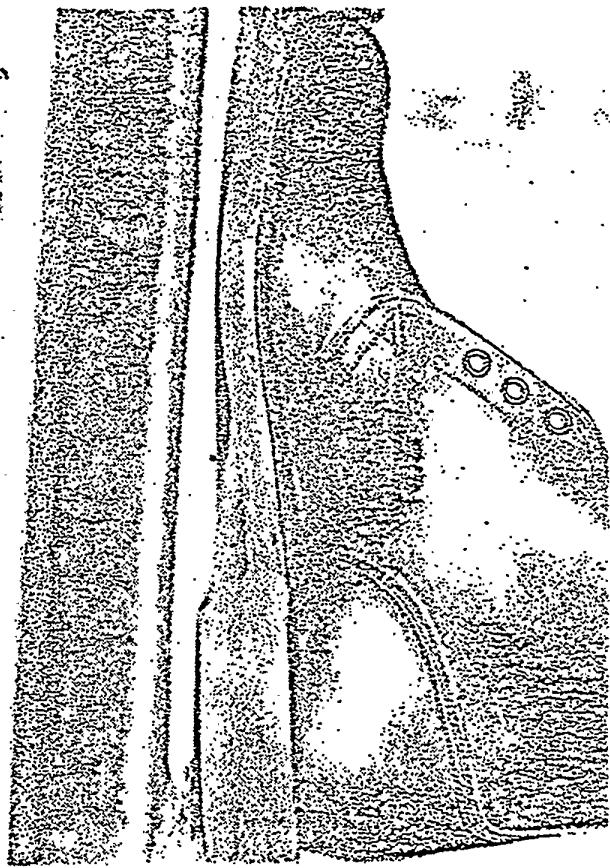
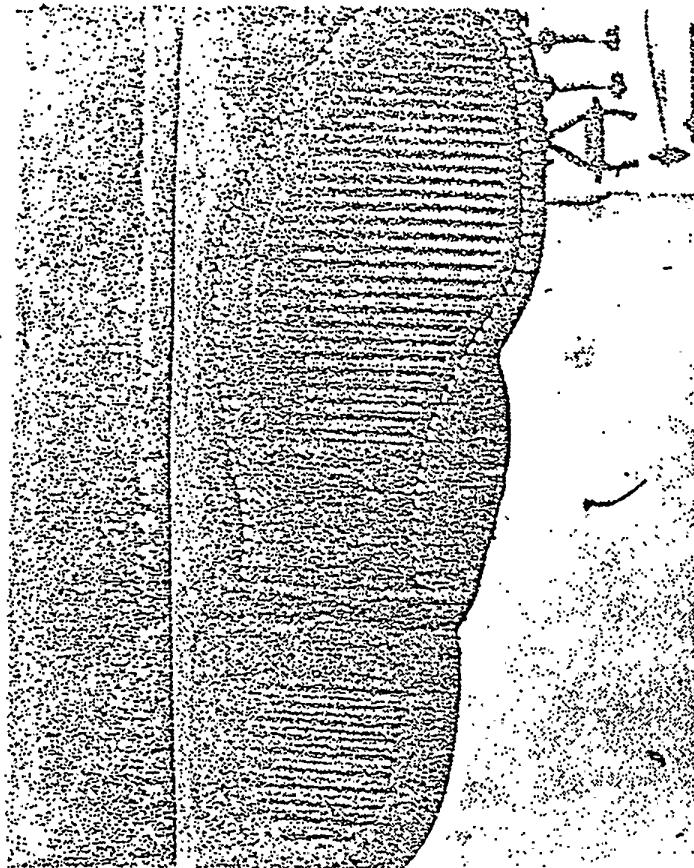
1. TIMES HERALD 8/1/60

P L A C U M H E M A Y Q U L D O R
O X M O N D A T C A S A G L B R
E G O M U G R E T O F O Z A
P K S K F D T V S A O T J
G R S E E - T H O X L D H
N O - D R - E S L A M A G - E
- R - T O T A - G E M O H
L D - A M G R H M
L D E O S A N O R T I N O O X
I S A - R - D O S K A I S
K / U - T H D F T I S L D
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K / C T Z A H N G O H - D
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2. CHRONICLE 8/1/69

— △ — T R E O H E P R Z O Z I T I
R G T T U G R I T E N R I T I
H Z - Z U K O X S K H O T I
T L W D A G S M W D B V A
T O C H H K N M > Z E T P
S △ Z O P - J U T W Z A T K / Z
O T H M Z M O D H H Z H W A
M Q R / w p r / T J T B V E
E V E O I R R - □ S L D D U F
H D P A R T H A R A L - A D - E
T - J X T P H Z O T - E T O L D P
W Q W P B Y □ G R - R R A -
Z Q G R Z O G R A F T - T R G R
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3. EXAMINER 8/1/69



Wing Walker shoe - uppers manufactured by Weinbrenner Shoe Company, Merrill, Wisconsin. Soles manufactured by Avon, Avon, Massachusetts. Over one million manufactured as per a government contract in 1966. Both Air Force and Navy issue. 103,700 pairs shipped to Ogden, Utah and subsequently distributed to military installations on the west coast.

SET #1

THE MAGAZINE OF CALIFORNIA
NEWWEST

P.O. BOX 69990
LOS ANGELES,
CALIFORNIA 90069
213-273-7516

May 14, 1981

[redacted]
Federal Bureau of Investigation
450 Golden Gate
San Francisco, California 94102

Dear [redacted]

Enclosed you will find the materials pertaining to the Zodiac case which our lawyer, [redacted] spoke to you about today. Please note that a suspect is identified in the supporting documents. We don't know yet whether the analysis will hold up under expert scrutiny (we are having it checked out), but we wanted you to have a copy right away because it involves a dangerous criminal who remains at large.

b6
b7C

Let me emphasize that this material has been purchased for publication by New West magazine. We are sending it to you with the understanding that you will use it for law enforcement purposes only and that you will protect our proprietary interest in the matter of its publication. We also understand that you will keep us informed of developments bearing on the truth or falseness of this information, and we will return the favor.

Sincerely,

[redacted]
Senior Editor

TB/cd

SEARCHED	INDEXED
SERIALIZED	FILED
MAY 18 1981	
FBI - SAN FRANCISCO	

George Orton



b6
b7C

MALICE IN WONDERLAND

Portrait of the Artist as a Mass Murderer

On the 4th of July 1862, the Reverends Charles Dodgson and Robinson Duckworth took Alice Pleasance Liddell and her sisters Lorina and Edith on a picnic on the Thames, rowing upstream from Oxford, where Dodgson taught mathematics. The party stopped for lunch on the riverside, where the man who was to become known the world over as Lewis Carroll extemporized the first version of Alice in Wonderland.

The story was a spellbinder, full of happenings that defied explanation. In its published version, it included a number of mathematical puzzles, nonsense verses, and words with strange spellings, but for the moment, it was just a fairy-tale made up on the spot for the amusement of the three little girls, and especially for Alice, who was its heroine.

Carroll later recalled: "I distinctly remember how, in a desperate attempt to strike out some new line in fairy-lore, I had sent my heroine straight down a rabbit-hole, to begin with,

without the slightest idea what was to happen afterwards."

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On the evening of October 30th, 1966, over a century later and half a world away, Cheri Jo Bates parked her Vw in front of the library at City College in Riverside, California. When she returned with some books on English composition, her car refused to start. It was found the next morning with half its ignition system torn out. Cheri was found a few blocks away, lying in an ivy bed with her throat slashed through. A man's Timex watch was lying beside her body. Witnesses who had heard her screams -- but did not call the police -- set the time of death at 10:30 p.m.

A month later, the local press and police received carbon copies of a typed letter from the murderer. It was full of strange phraseology and a number of untruths. But it alluded to details known only to the police, proving that it was from Cheri's killer. "Once she was young and beautiful," it began. "Now she is battered and dead. . . I said it was about time. She asked, ^{about} time for what? I said it was about time to die. . . I am not sick. I am insane," it read in part. There was no signature.

Some time later, a strange poem was found scratched into a desk top at the City College library. It alluded to the Bates murder, and it was signed "RH". Almost six months to the day after the killing, another letter arrived. This time, there were four copies sent, including one to the victim's father. Three were signed "Z". Years went by before expert analysis proved that the poem and the

second letter were from the same hand.

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Two years passed. Eagle Scout David Faraday and cheerleader Bettilou Jensen parked just off rural Lake Herman Road near Vallejo in the northern part of the San Francisco Bay Area. It was late in the evening of the 20th of December, 1968. It was almost the longest night of the year. For David and Bettilou, the night stretched into eternity. David was found in the car with one bullet in his head. Bettilou was sprawled 30 feet from the car with five bullets through her back. The killer had used a .22-caliber pistol with a flashlight taped to it as a night-time aiming device. He must have anticipated a running target.

The Lake Herman Road killings had nearly been forgotten by the next summer. On the evening of the 4th of July, 1969, Darlene Ferrin, who was separated from her husband and worked nights to support her infant daughter, parked at Blue Rock Springs golf course near Vallejo, not very far from Lake Herman Road, with a boyfriend, Michael Mageau.

Just after midnight, someone walked up to the car on the passenger side. The door was suddenly snatched open, and a hail of bullets poured into the interior. Darlene and Michael were shot three times each. The killer drove into downtown Vallejo and called the police department from a phone booth on Springs Road, only a few blocks away. Darlene died. Michael survived. The killer had used a 9-mm. pistol, apparently a Luger.

Three weeks later, three Bay Area newspapers received copies of a cryptogram from someone who claimed to be the murderer who had shot the couples near Vallejo. It was too difficult for the military cryptanalysts who worked on it. The solution came from a high school teacher in Salinas. When deciphered, it read as an encomium on the joys of killing people. The choice of words was strange and the syntax seemed to break down here and there. It was studded with queer words like "hongertue" and "athae". The police reasoned that the murderer was mentally deranged and had lost control of his cipher-system. The press reported various theories, and some papers just changed "hongertue" to "dangerous" and let it go at that. The "cipher killer", as he was now called, was passed off as a crazy who frequented lovers' lanes. Drive-in movies in the North Bay suddenly posted record profits.

Toward the end of that summer, Cecilia Shepard, a former student at Pacific Union College in Napa County, to the north of Vallejo, and Brian Hartnell, who was still going to PUC, were picnicking near the water's edge at Lake Berryessa. It was the 27th of September, near evening.

Out of nowhere, a man approached. His head was covered with a black hood with eye-slits. On it was embroidered a circle superimposed on a cross. He drew a Luger on the couple. He said he had escaped from Deer Lodge State Prison in Montana, over 1000 miles distant. He said he needed their money and their car. Brian protested that he had only small change, but he gave up his car keys.

The hooded man tied them up at gunpoint, then pocketed his pistol. He pulled out a butcher knife instead and stabbed both of them repeatedly. He stabbed her in the breasts, buttocks, and what the press would discreetly call the lower abdomen. She was stabbed eight times, Brian ten.

His seeming fury expended, he put away his knife and produced a felt-tip marker. He wrote on Brian's car the dates and locations of the Lake Herman Road and Blue Rock Springs attacks, concluding the list with the just-perpetrated slashing. He noted the time as 6:30 p.m. Then he drew a cross-and-circle on the car and signed the document with the letter "Z". He drove far off the beaten track down into the center of the city of Napa, and from a phone booth at a car wash on Main Street, he called up the sheriff's department, only four blocks away, to report the attack.

Both the knifing victims were still alive when found. Cecilia was writhing in horrible agony. Death finally brought her relief. Brian pulled through. It would not seem ironic until over a year later, but Cecilia had quit PUC to pursue her studies at the University of California in Riverside. She never cracked a book there.

On the 11th of October, 1969, cabby Paul Stine picked up a fare in downtown San Francisco. Paul was finishing up a Ph.D. at San Francisco State College and drove a cab at night to support his pregnant wife. The fare slid into the front seat and asked to be taken to the corner of Washington and Maple in fashionable Presidio Heights. Somewhere near the end of the trip, the fare

changed his mind and told Paul to drop him a block farther on, at the corner of Washington and Cherry.

Paul pulled over at the corner, in front of a fire hydrant. The fare fumbled in his jacket, but instead of his wallet, he pulled out a 9-mm. Luger. He shot Paul once -- in the eye. As witnesses called police, he used a knife to cut off part of the victim's shirt tail, which he soaked in the blood gushing from the wound. Then he walked away, pausing only to answer a query from two officers summoned to the scene to apprehend a black suspect by a confused dispatcher. Paul Stine never finished his doctorate, and his baby was born orphaned.

That was the beginning of a long war of nerves. Two days after the Stine murder, a letter arrived at the editorial offices of the San Francisco Chronicle. It was from the North Bay's "cipher killer". He authenticated the letter with a swatch of bloody shirt tail. He signed himself "Zodiac", a name that he continued to use for the next five years.

The Bay Area was thrown into a panic. There was no rhyme nor reason to Zodiac's attacks, nothing to hang a hypothesis on. He changed sites, victims, weapons, the way other people change their socks. There was no apparent motive -- other than killing people. The worst part was wondering when and where and whom he would hit next. He wrote that he was thinking of attacking a school bus. For some time, patrol cars convoyed children to school in Vallejo. In Napa County, sheriff's deputies literally rode shotgun on school

buses. Bay Area police agencies worked as they had never worked before. But they never developed any substantial clues to Zodiac's identity or his motives.

As far as is known, Zodiac never attacked anyone again. But he kept the Bay Area edgy for almost five years with a string of letters and postcards, mostly to the Chronicle. Some were made up of snippets from newspapers and magazines. One postcard had thirteen holes punched in it. One of the phrases pasted on it read: "MF. I am crackproof." Another card showed a picture of a housing development at Lake Tahoe. It read, in part, "Peek through the pines." The police scoured the Lake Tahoe area, looking for a fresh corpse.

Even when he wrote his own words in felt-tip script, Zodiac was usually weird-sounding: "There's more glory in shooting a cop than a cid," he wrote, "because a cop can shoot back." Cid? "I shot a man sitting in a parked car with a 38," he wrote. The police turned the state of California upside-down, looking for a shooting victim who fit the description. Eventually, they gave up, deciding that Zodiac's lack of consistency and his wild claims of victims, expressed as box-scores, e.g., "ME 37 SFPD 0", were indications of advanced dementia. The accepted reasoning was that Zodiac had stopped killing because he was non compos mentis -- which also conveniently explained why the police never managed to find him, their previous confident predictions notwithstanding.

Just before Halloween, 1970, Chronicle reporter Paul Avery, who had bylined a number of Zodiac stories, received a greeting card from the murderer. It was a "secret pal" note in which Zodiac had pasted a dime-store paper skeleton. He had adorned the inside with thirteen stylized knotholes, to which he had added eyelashes. He also wrote, in various places, "Peek-a-boo -- you are doomed!" "BOO!" and "4-TEEN". The card was signed with what was variously interpreted as a meteorological symbol and a Jewish astrological sign, as well as the familiar Z-plus-circle-and-cross, which was, depending on who was speaking, the crosshairs of a rifle sight, a symbol from a (never-specified) Asiatic religion, or a "mystical symbol of the universe". In other words, nobody could make head nor tail of it.

The police and the papers interpreted the card as a threat against Avery's life. Zodiac was now claiming thirteen victims, they said, and was threatening to make Avery his fourteenth. Only five Zodiac victims could be accounted for (everybody forgot the two survivors -- only the dead are victims). Zodiac was obviously raving. Ironically, it was Avery who published, only a month later, the link between the Bates murder in Riverside and the Bay Area killings.

Nobody noticed any connection between the thirteen holes in the postcard, the thirteen eye-holes in the Halloween Card, and the thirteen bullet-holes Zodiac had put in his shooting victims. His seven Bay Area victims had had fourteen eyes. He had shot one out.

Zodiac sent a 13-character cipher to the Chronicle, which he said contained his name. He apparently thought that the thirteen-hole postcard would trigger a mental association with a Beatles song: ". . . ^{And} though the holes were rather small/ They had to count them all. . ." In desperation, he wrote the Chronicle to suggest that they fire a columnist called Count Marco. Nobody took the hint -- to count up to M, the thirteenth letter of the alphabet.

One of the more interesting -- and least publicized -- of the Zodiac communications was an oil-company road map showing Contra Costa County in the East Bay. Near the center of the map was Mt. Diablo, Devil Mountain, the highest peak between the coast and the Sierra Nevada. Every one of Zodiac's ^{Bay Area} murder sites can be seen from the peak of Devil Mountain. Zodiac had superimposed a clock face on its peak. It read: 0-3-6-9. 12 o'clock had been replaced by the ominous Zero Hour. In the letter accompanying the map, he intimated that something interesting would be found by placing a radian angle on Mt. Diablo. As he had already been categorized as crazy, nobody followed his instructions. The police suppressed the map, anyway.

Zodiac was last heard from in early 1974. A letter postmarked late in January quoted extensively -- as had several previous letters -- from The Mikado, and it concluded with a group of figures drawn with a felt-tip pen. When a facsimile of the letter was published on the Chronicle's front page, the figures were obliterated.

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Seen from the perspective of outer space, the Zodiac murders make a lot of sense. They show, in fact, a degree of precision in their design which, combined with the savagery and viciousness of the crimes, is downright blood-curdling.

The Zodiac, after all, is a circular band in the sky, from which the stars look down on the earth. An approximation of this exalted view can be had just from looking at a road map, such as the one that Zodiac had sent to the Chronicle.

A half-dozen years after Zodiac had faded from the public consciousness, I decided to take him at his word. I purchased a U. S. Geological Survey map of the Bay Area, a quantity of acetate sheets, and a large protractor. I drew a radian angle (midway between 57 and 58 degrees) on an acetate overlay and superimposed its apex on Mt. Diablo. A curious thing happened. And as I continued the mathematical experimentation, it became, as Alice would have put it, curiouser and curiouser.

I rotated the radian around until one leg passed through the site of the Blue Rock Springs murder. A chill ran up my spine as I noticed that the other leg ran straight through the murder-scene in Presidio Heights. I tried it another way. This time, I set one leg on Mt. Diablo and rotated the overlay around until the other leg hit Blue Rock Springs. This time, the apex came to rest on a benchmark on Travis Air Force Base, BM 53.

There had been police interest in Air Force personnel during Zodiac's reign of terror. Among other things, both Zodiac settings

had large Air Force installations nearby: Travis AFB in the north and March AFB in the south.

I looked at the map again. Sighting northwest up to Lake Berryessa, I noticed that the line between the Travis apex, BM 53, and the Blue Rock Springs site formed what looked like a right angle with the west shore of the lake. With my protractor, I constructed a 90-degree angle on the overlay. The line ran straight through the Berryessa site. I measured the distance from Berryessa to BM 53 and from there to Mt. Diablo. BM 53 was equidistant from both points, roughly thirteen miles each way. Zodiac had scribed a circle.

He must have made Mt. Diablo the anchor of his scheme because he was very knowledgeable about maps. Any surveyor or cartographer would have done the same. The benchmark on Mt. Diablo is where the north-south and east-west baselines cross, from which the USGS takes all survey and cartographic control for the entire western U. S. A benchmark is a brass plate stamped with a circle and a cross centered on the circle. The landscape is littered with BM's; they are used by surveyors as touchstones of accuracy and precision.

The Stine murder still didn't make much sense, unless it had served to construct a second radian, just to prove that the first was not accidental. There had to be some other tie-in. From the back of my mind I retrieved the word "4-TEEN" from the Halloween Card. It obviously didn't mean "14 victims". The angle formed by the Blue Rock Springs azimuth and Presidio Heights looked acute.

My heart was pounding with dreadful foreknowledge of what I would find as I drew a 14-degree angle on my overlay, Blue Rock Springs to BM 53 to Presidio Heights. It intersected with the line from Mt. Diablo in the block between Maple and Cherry on Washington Street. Probability's cornucopia of coincidence was exhausted.

I went back to the Halloween Card and studied it hard. The "signature" at the bottom was particularly interesting. The pelican-like thing at the left had always been interpreted as meteorological or astrological. Now that I looked at it in light of the pattern emerging on my map, it looked very much like a right angle with flags and dots attached. It would correspond to the Blue Rock Springs - BM 53 - Berryessa right angle if rotated 90 degrees counterclockwise. It looked a bit out of kilter on the card. I measured the angle its left leg formed with the bottom margin of the card: 53 degrees. 53 again.

Now the two dots between the pelican's wings took on a malevolent glitter, as if they were two hard cold little eyes staring at me. The eyes. The thought made a bell ring. I rummaged around for my old Boy Scout manual, and when I finally found it, I turned to the chapter on signals. It was Morse Code. Reading from left to right, the dots and dashes spell "NW" on the outside of the angle. Inside, the two dots spell "I".

TURN NORTHWEST. I AM AT THE CENTER.

My skin was crawling with horror. Zodiac's eyes penetrated through to the very marrow of my bones. There wasn't a sound in

the house, but I thought I heard him breathing. There was a faint stirring of air near my elbow, as if we were standing side by side. There were now two of us who knew the guilty secret, and he was the other one. Was he looking at me right now? Did he know that I knew?

I looked at the "signature" again, keeping my eyes averted from the evil bird on the left-hand side. The Z-and-"crosshairs" was meant to be rotated 90 degrees clockwise, symmetrically opposite to the pelican. It was a compass rose, pointing the way north, a map-orientation symbol. And there was something else.

The symbol on the left turns counterclockwise. The one on the right, clockwise. Just like in the bathtub. WATER. Riverside. Lake Herman. Blue Rock Springs. Lake Berryessa. The Washington Street fire hydrant. The phone calls from Springs Road and the Main Street carwash. Water, water, everywhere.

There was still one loose end: Lake Herman Road. It didn't seem to fit into the scheme. I measured the angle between it and Blue Rock Springs: 11 degrees exactly. Secondary meanings came crowding in. Main, spring: mainspring. It was a clock. He used a 22 at Lake Herman Road, then a 9-mm. at Blue Rock Springs. 22 before 9. 8:38. The hour-hand sweeps a half-degree a minute. At 8:38, it stands exactly 11 degrees below the 9-o'clock line. He got it both ways.

Zodiac had left a Timex watch at the scene in Riverside. He used the phrase "about time" three times in rapid succession in

reporting his conversation with Cheri Jo Bates. He wrote to the Chronicle (from Greek chronos, "time"), the Vallejo Times-Herald, the Los Angeles Times. A copy of the cryptogram had gone to the Examiner, known popularly in the Bay Area as the "EX". Time plus Ex. Timex.

I talked to a friend who paints. He hunted up a book for me on modern American art. There was a chapter in it on "earthwork" art. One pioneer in this field, Robert Heizer, dug some 600 miles of trenches in the Sahara Desert with a backhoe, constructing geometric patterns meant to be perceived only from far above the earth. In fact, his specific intention was to have the work photographed by a reconnaissance satellite. Others working in the earth-medium have incorporated aerial reconnaissance photography into their work. The movement was in full swing in the mid-sixties, major works being executed around 1966-1967, two years before Zodiac's Bay Area rampage. He was the crest of the wave, and nobody knew it -- except Zodiac himself.

He had found the ultimate artform. Other artists had sought to remove their work from the ordinary human perspective, but at least the artifacts -- the trenches, for instance -- were still visible. Zodiac had trumped them all by using invisible lines whose interrelationships were apparent only from 200 miles up. And he had disguised his materials as corpses, to make everyone think that it wasn't an artist at work but a mass murderer instead. His one-sided correspondence was another part of the conceptual

artwork. It had been another late-sixties Happening.

There was no passion, no irrationality, no hot blood in Zodiac. He was cold, precise, calculating. His victims were mere markers. They just happened to be standing on an invisible line whose relationship to other invisible lines could be seen only from outer space by someone whose eye was informed by the guilty secret. Their blood was shed merely to mark his canvas.

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Once the calculation and design that went into the 26-mile-wide clockface became apparent, it was clear that Zodiac's rambling, misspelled, often incoherent communications were not the product of a crazed nincompoop. There had to be reason and order behind them.

The pelican provided the first clue: Morse Code. Several of the supposed "ciphers" are in fact nothing but disguised Morse. Military cryptanalysts gave up on them, not realizing that they had been set up by the genuine cryptogram of August 1969 to take every cryptic-appearing communication from Zodiac as a cipher. Nobody attempted to analyze the merely demented-sounding passages.

Zodiac used several means to conceal meaning. One will serve to illustrate his virtuosity and ingenuity, what I will call Binary Morse. Morse Code is a binary system, having only two types of characters, dots and dashes. Zodiac uses it from time to time in conjunction with binary numbers, substituting dashes for ones, dots for zeroes, and vice versa. Numbers can become

words and words can be transformed into numbers, disguised beyond recognition.

"4-TEEN" is a stunt performed by a virtuoso who knows that his audience is incapable of appreciating his artistry. TEEN in Binary Morse is 18. Read as a rebus, 4 before 18 is 14. Once again, Zodiac gets it both ways.

Then there's "cid". It's made up entirely of letters used in the Roman numerical system. DCI is 601, in Binary Morse: 1001011001. It spells XEMIT. "Timex" forward is 617. Try writing anything that remotely resembles English with DCXVII, and you'll understand why Zodiac chose to turn it end-for-end.

"I shot a man sitting in a parked car with a 38." Again, a recital for the deaf. Zodiac shot three men sitting in parked cars, one with a 22, the other two with a Luger. The one he shot with a 22 was unwittingly sitting on the end of a gigantic invisible hour-hand pointing at 8:38. Another was shot by a fare who had ordered him to skip the block between Maple and Cherry: the 3800 block. Those are the artifacts. But he was probably including by reference the 3800-foot-plus altitude of Devil Mountain and the nearby 38th Parallel. 38 in binary notation is 100110. It spells TIME. As a date, 10(0)11(0), it's October 11th, the day he killed Paul Stine. (DEATH in Binary Morse, transposed to a clockface, would read 11:12. I wonder what time the Riverside Timex showed when the police found it in the ivy?)

Zodiac knows every trick in the book. He uses anagrams, re-

buses, acrostics, telestichs. Sometimes he writes an acrostic and a telestich at the same time, which the Greeks -- who had a word for everything -- called akroteleuton. The patterns resulting from analysis are enigmatically dense, but they repeat themselves over and over. "53" and "BM 53" appear frequently, for instance. The difficulty of interpretation is summed up in the question, is "53" just a reference to BM 53 on Travis AFB, or did he pick BM 53 as the center of his scheme because of some personal significance?

He didn't program the date of the Stine killing only. He killed Cheri Bates at 10:30 on 10-30. The July Fourth attack in Vallejo (7-04) is connected by a radian angle to Mt. Diablo, which stands at the hour hand's clockface position at 7:04. The Lake Herman Road murders (12-20) took place a stone's throw from the 122nd Meridian. The most significant mathematical pattern, however, is shown by the Lake Berryessa murder. And to understand that, we must go back to the Halloween Card again.

The thirteen eyes on the card are divided into two groups: at the extreme left, there are nine tiny eyes. To their right, there are four larger eyes. One is very large, and the three to its right are smaller. This is a graphic illustration of the mathematical principle called "casting out nines". The very large eye is a 10, the three smaller ones are 1's. 1 and 3 is the sum left when 13 is divided by ~~xxx~~ 9. It works with any number. Just add together its digits until only one remains. That's what is left when the original number is divided by 9. The practical effect is that 9 equals zero, and all numbers evenly-

as

divisible by 9 ~~is~~ likewise zero: 18, 27, 36, 45, etc. "I" is, the ninth letter of the alphabet. The equation seems to read, "I am 9 is zero is a hole is an eye." That's why Zodiac sat in the front seat of Stine's cab -- so he could shoot him in the eye with a 9-mm. bullet.

The Berryessa attack took place on 9-27, at 6:30, according to Zodiac's own documentation. All zeroes. He inflicted a total of 18 wounds -- another zero. On a normal clock, Lake Berryessa would be at 12 o'clock. On Zodiac's Mt. Diablo clock, it's at Zero Hour. One of his favorite transformational codes is based on the substitution of one letter for another in the 13 pairs of letters whose sums add up to 27: A and Z, B and Y, C and X. I call this code WIZARD because the word "wizard" comes out spelled DRAZIW. Note what WIZARD does to the first three letters of "Berryessa":

B	E	R
Y	V	I

Two women slashed cruelly to death, both, by way of a mathematical transformation, killed among the ivy.

And there's something more about Lake Berryessa. Zodiac used a butcher knife to slash a part of Cecilia Shepard's body vulgarly called the "beaver". Eight wounds in places beginning with "B". Casting out nines. Lewis Carroll: The Hunting of the Snark. In Snark, there is eight of everything, until the Snark appears, makes a ninth, and causes a vanishing. 42 boxes of goods are lost, left

behind on the beach. 42 boxes is the cube of 42, which is evenly divisible by nine. Everything and everybody in Snark begins with "B", including the Snark, which is a Boojum. Its fourth characteristic is its fondness for Bathing Machines. And the Butcher expresses a keen desire to put aside hunting Snarks in favor of knifing the Beaver.

Deer Lodge, Montana. DLMT in Zodiacee is 5500, the range in miles of the Snark intercontinental missile. Like its literary namesake, the Snark missile vanished, after only four months of deployment, in June 1961, at Presque Isle AFB, Maine. The Main Street telephone booth again! As far as I have been able to determine, the theme of casting out nines in Snark has been overlooked by all the learned commentary of Lewis Carroll scholarship. But Zodiac noticed it.

Zodiac consistently uses MT in his secret messages for zero. That's from Lewis Carroll, too. Remember the Mock Turtle's plaintive song in praise of turtle soup? He calls it "rich and green". The implied riddle is, when is a tureen of Mock Turtle soup not a tureen of Mock Turtle soup? Answer: when it's MT. The empty dish is a zero, a hole. It's green-rich MT, Greenwich Mean Time, named after the observatory that stands on the Prime Meridian, the Zero Longitude line. GMT is known the world over as "Z-Time". And the Prime Meridian is 5°30' from Land's End in Cornwall. The Mt. Diablo-Washington Street azimuth intersects with the BM 53-Lake Herman azimuth a few yards off the beach at Land's End, San

Francisco. That intersection is what the Paul Stine killing was, all about. Zodiac broke out of his 26-mile circle for a homicidal excursion to the city to pinpoint Land's End. It's 5:30' west of Riverside. Riverside is right next to 117° West. 1 and 1 and 7: zero. Prime Meridian. Zodiac's Greenwich. It also runs straight through the deepest hole on the North American continent: Badwater, Death Valley. Bad, water, zero, hole, death.

When Humpty Dumpty fell off his wall, Alice learned that there were exactly 4209 King's Men. In binary notation, that's 100000111-0001. The digits group this way: 1-5-3-3-1. 1 for David Faraday, 5 for Bettilou Jensen, who was urged out of the car with a shot into the rear seat and then shot on the run to establish the sequence 1-5. 3 each for Darlene Ferrin and Michael Mageau. 1 for Paul Stine.

Zodiac solved the White Queen's Riddle, too. He found the answer that none of the learned commentators saw. Far from being a scatter-brained loony, Zodiac has one of the best-organized, meticulous, orderly, and perceptive minds on this planet. In a sense, he is the planet: the "mystical ^{symbol}sign of the universe" is really the astronomical symbol for Planet Earth. Zodiac is the gridwork of mathematical references that circle the globe.

It's too early to say whether scholarship devoted to a study of Zodiac documents will lead to a positive identification, let alone arrest and conviction, but it wouldn't hurt. Twelve years

have gone by with nothing to show for an exhaustive investigation by usual police methods. It's time to turn it over to linguists and mathematicians.

Zodiac's first line of defense is the suppression of his writings. He was banking on it. A useful first step would be the publication of a diplomatic edition of the Zodiac letters. It would cost little, and there is nothing to be gained by continued secrecy about matters the police themselves don't understand. The more minds working on the problem, the better.

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I got a few bits of suppressed information that enabled me to get this far. The most intriguing was the set of pen-stroke figures at the end of the January 1974 letter. The groups had been separated from one another so as to hinder recognition, but I thought I knew by then where to turn to find their source.

It took me about an hour, once I had a photocopy of the figures. Reassembled, they form a detail from the lower left-hand side of the White Rabbit's waistcoat. There are even fragments of John Tenniel's monogram included. It's the very first illustration in Alice in Wonderland, the one showing the White Rabbit looking at his pocket-watch, fretting about the time. The chapter it accompanies is titled "Down the Rabbit-Hole". Zodiac signed himself "RH" in Riverside.

And he didn't go hunting for murder victims on July 4th, 1969, to celebrate American independence. He was commemorating an event that had taken place on the same day over a century before, on a

sunny riverside in England, where an eccentric mathematician from Christ Church College, Oxford, entertained three little girls with an extemporaneous story of incredible wonders in a remote land that existed only in his imagination, like the world of the Red King's dream. Later, he bestowed this benison on his amiable invention:

And, though the shadow of a sigh
May tremble through the story,
For 'happy summer days' gone by,
And vanished summer glory --
It shall not touch with breath of bale,
The pleasance of our fairy-tale.

He was horribly wrong.

The Jabberwock is alive and well and somewhere in our midst.

XXX

[REDACTED]
[REDACTED] CA [REDACTED]
5 May 1981

[REDACTED]
Beverly Hills, CA 90212

Dear [REDACTED]

Enclosed is the Zodiac package we talked about on the phone. The supporting documents were written in order of accumulating knowledge, and it would be easier to read them in that same order: 1) Chrestomathy; 2) 340-character "cipher"; 3) August 1969 cipher.

b6
b7C

If you want a second opinion, I recommend [REDACTED] here in Napa (707/252-1720). He has a solid academic grounding in linguistics and mathematics as well as a shrinking-license, and he's seen all this stuff. He also does a lot of police and parole-board work, expert witness and so forth.

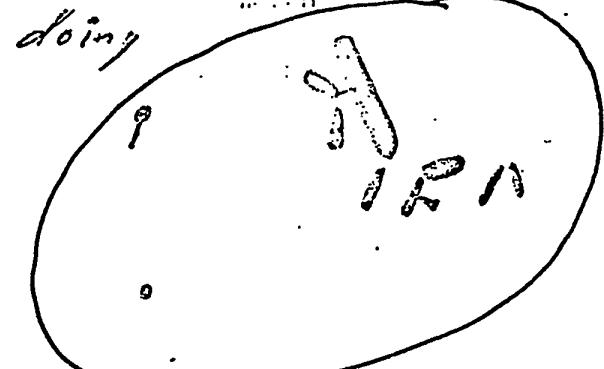
Talk to you later.

Yours,

[REDACTED]

STROKES:

5 3 2



SUPPRESSED PORTION
OF Z.'S 29 JAN 74
LETTER

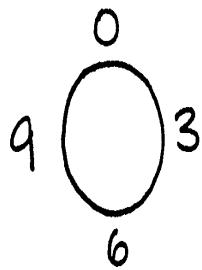
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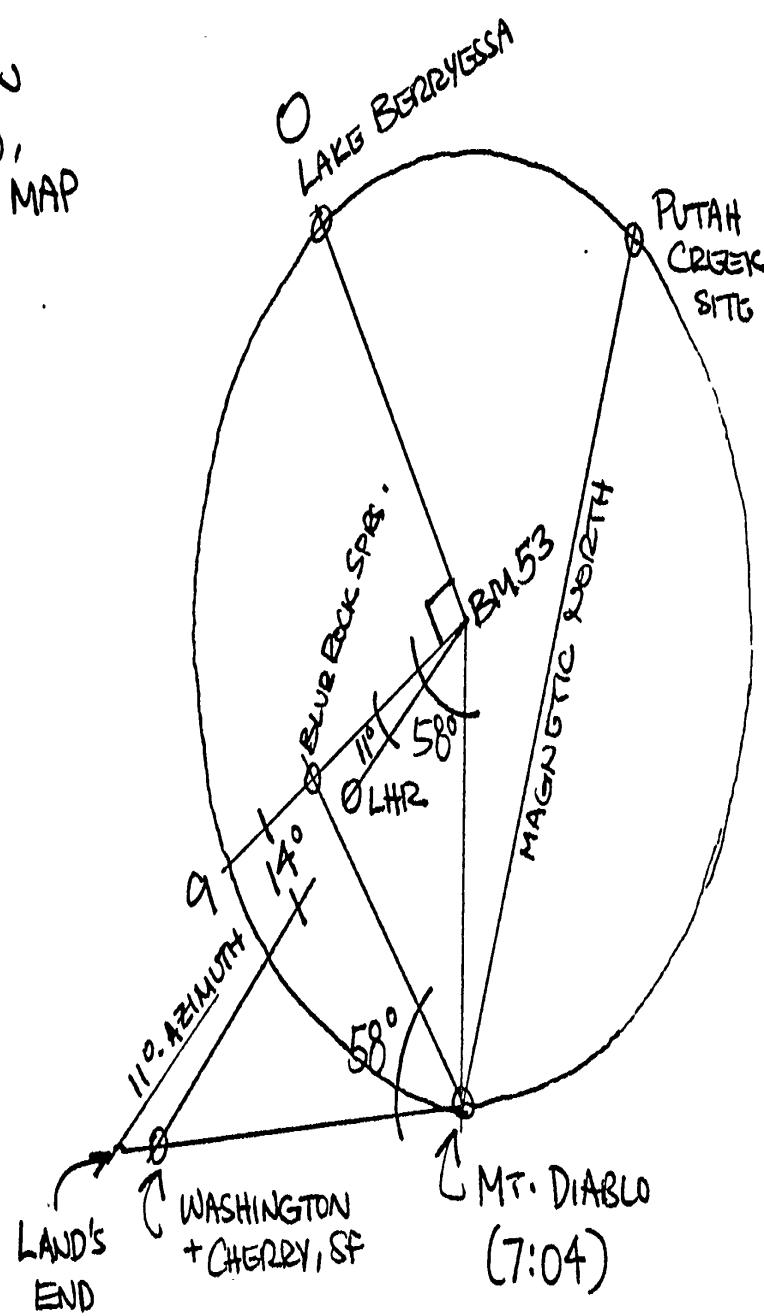
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orrow are but names — empty words
all is new and fair, and when Sin and
the happy hours of childhood, when





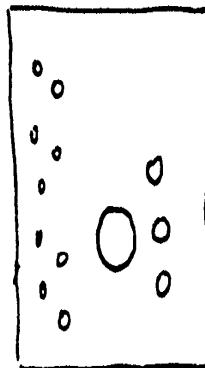
CLOCKFACE ON
MT. DIABLO,
PHILLIPS 66 MAP



"SIGNATURE" ON HALLOWEEN CARD



"SIGNATURE" IN
REORIENTATION



GROUPING OF
EYES ON HALLOWEEN
CARD

A ZODIAC CHRESTOMATHY

The WIZARD alphabet is made up of pairs of letters whose sums are 27, A being 1, B, 2, C, 3, and so forth. When one of these pairs occurs in the text, the pair vanishes on analysis. Thus, Z. can inject what cryptanalysts call "nulls" into his text. This is helpful, for instance, in writing words with Roman numerals, and as in classic cryptography, nulls hinder decipherment.

A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N

Otherwise, WIZARD acts as a simple substitution cipher. An A in the text produces a Z on analysis.

Z.'s other main system is Binary-Morse. English words can be written out in International Morse Code, then translated into numbers by substituting 1 for dash, 0 for dot. Binary numbers work the same way that the more familiar base-10 numbers do, except that instead of each column being a larger power of 10, it's a larger power of 2. You use base-10 numbers in balancing your checkbook, but your bank's computer uses base-2 numbers in preparing your balance. Maybe that's why they sometimes don't agree.

1. Z. wrote to the Chronicle to complain about an advertisement for the "movie Badlands", which he said glorified violence. Not a word was misspelled. He signed himself "A Citizen".

CITIZEN: Z. CII. TEN.

102
10
<hr/>
112: Binary 1110000

111: 0 0000: H

The message reads, "Z. OH."

2. Z.'s very last communication came after the Patty Hearst kidnapping. He sang the praises of the SLA, erroneously etymologizing SLA from Old Norse sla ("to slay, kill"). The error was purposeful, to emphasize by repetition the sequence SLA. Here it is in WIZARD:

S	L	A
H	O	Z

"Z. OH." again. Z.'s affinity for Air Force Bases appears to rest on a pun: in chemistry, all bases contain the hydroxyl radical, OH. He IS a base. "OH" is a frequently-encountered Zodiac signature.

3. In various places, Z. said that he was killing people to collect slaves for "paradice". SLAVES and PARADICE appeared in a cross on the back of the Halloween Card.

V&E are a WIZARD pair, totalling 27 (22&5). The text is SLAS.

S L A S
H O Z H

"Z. HOH." Where a doublet occurs (here, H), it usually generates a number. HH, for instance, is to be read as H2. A hint from Z. occurs in the so-called 340-character cipher, where this sequence is found: D2T. It's the familiar DDT. This is only one of many didactic pointers from Z.

"Z. H2O." It's the quantitative formula for the water molecule. HOH is just as valid, being the schematic formula, but the principle of number-generation is important in the consideration of later examples.

4. "I am not sick. I am insane." This might have appeared on the puzzle-page of any children's magazine. Look at it again. "I am Not Sick. I am in SaNe." Any Z.-formulation prefaced by "I am" requires special attention. In WIZARD:

N S
M H

The Riverside letter was typed on paper that had been trimmed down to 8 by 10-1/2". "8" is a frequently-encountered signature, possibly in part because H is the 8th letter of the alphabet (Z. used 8-cent stamps, even on postcards, at a time when the first-class rate was 6 cents, for instance). The murder took place at 10:30 on 10-30. Ten and a half hours, ten and a half inches, ten and a half shillings: the Mad Hatter's price-tag, 10/6. The presence of March AFB next door to Riverside is very likely a hidden allusion to the March Hare as well. And in its WIZARD form, SN, it has another Lewis Carroll allusion. Z. put a sticker on at least one envelope reading, "Always use the correct ZIP Code".

Z I P
A R K

SN plus ARK: Snark.

5. One of Z.'s least obvious misspellings gives an example of his wit: "doo" for "do". By the process of number-generation, D00 analyzes as D20. Deuterium oxide, otherwise known as "heavy water". Z. was described by all surviving witnesses as being overweight.
6. Z. quoted Ko-Ko, the Lord High Executioner, as saying that he had "a little list" of potential victims, including people who eat peppermint and "phomphit" in your face (Gilbert wrote "puff it"). This produced a wave of titters at Z.'s expense, since he was obviously completely out of control. As usual, he had the last laugh.

PHOMPHIT: H20. 2PI. MT.

MT is zero, 0, a circle. I believe that this is a mathematical equation. A circle divided by 2π gives a radian angle, which Z. made a point of mentioning at least twice. It appears to read, "H20 is a radian". By "radian", I suspect that Z. really means 58 degrees. As will be seen below, his name in International Morse Code is made up of 5 dashes and 8 dots.

7. Z. expressed his unhappiness over the fact that everyone was wearing peace buttons, Black Power buttons, but he saw no Zodiac buttons "wandering around". Buttons do not wander around. And his use of words such as "ought" and "around" ("a round") for zero is another puzzle-page feature. "Wandering around" is really "wanderingo".

W A N D E R I N G O
D Z M W V I R M T L

Cancellations: D-W, R-I. The remainder: MMTLVZ. By the usual rules, it reads, "Z. LV2MT" or "Z. 570."

570 in binary notation: 1000111010.

1000: B. 11: M. 101: K. 0: E.

As will be discussed below, "KE" is standard for "53". The message reads, "Z. BM 53."

8. Z.'s very first puzzle turns out to have been the simplest, a straight anagram. His first letter to the Riverside police was addressed, "Homicide Detail, Riverside". He signed himself "RH" in the desktop poem. His second letter was signed "Z". The only manipulation required is to transpose the "Z" into WIZARD: A.

HOMICIDE DETAIL RH A: [REDACTED] DID IT

9. In November, 1969, Z. sent in a 340-character "cipher" made up of letters and geometrical forms. The reason it wasn't decipherable is that it isn't a cipher at all. It's Morse Code. All geometrical forms containing a sum of angles divisible by 9 (including L and C, right angle and semicircle) and letters divisible by 9 (I-9, R-18), are dashes (1), all others dots (0). Here are the first 13 characters:

H E R V P L V V P K I O L
0 0 1 0 0 1 0 0 0 0 1 1 1

[REDACTED] again.

10. The Lake Tahoe card bore the phrase "Lake Tahoe Area". "Area" contains a doublet A and should then read "ARE2". L(12) and A(1) are M(13). TEA is Binary-Morse for 9 (1001), or I (9th letter).

[REDACTED]

[REDACTED] (the 2 is apparently superfluous)

b6
b7c

11. Z.'s threat to attack a school bus was never seriously intended. It was just another hidden message. School buses are yellow. The yellow clue was reinforced by the murder of a Yellow Cab driver (Stine), in the immediate aftermath of which Z. first made the supposed school bus threat. "Bus" in Looking-Glass spelling is "sub". The yellow color is a Beatles-quote. Submarines are found in the Bay Area at Mare Island, which is located at the end of Z.'s 9-o'clock pointer. At one time, he wrote to say that he had been "swamped" a while back. A few months prior to that letter, USS Guitarro, a nuclear sub under construction at MI, had indeed been swamped by work-draws at dockside.

SUB plus MI. One manipulation: V for E U. SVBMI.

In the Dragon Card, Z. said that when he blew up the school bus, he was going to have a BLAST. That reads, "B last".

S V M I B

[REDACTED]

12. Z. sent a greeting-card with a fountain-pen theme. Another purchased card had a dragon theme. On the Halloween Card, he wrote "doomed" like this: DOOMEd.

PEN plus DRAGON: Pendragon. King Arthur.

[REDACTED]

13. Z.'s lament about the paucity of Zodiac buttons was made the object of more tittering because he wrote "buton" several times. Once again, it was Z. who had the last and longest laugh.

BUTON in Binary-Morse: 4222. It's the exact latitude of Cambridge, Massachusetts. 42 degrees, 22 minutes North.

(BUTON: 100000111110)

14. In a letter postmarked in Pleasanton on 15 April 1971, Z. responded to Avery's revelation of the Riverside connection. He also mailed the letter to the Los Angeles Times. Los Angeles is over 400 miles south of the Bay Area, and Z. had never been of local concern down there, other than in Riverside in 1966. Why the letter to LA? Why from Pleasanton? Why 15 April? (Come to think of it, I wonder what 1040 spells in B-M?)

The date is 4-15. 415 in binary notation: 11001111. 1100: Z. 1111: Zero.

This is daring, but it seems to fit. PLEASANTON is an anagram for N POLE SANTA. From the North Pole, there is no way to go but south. The distance between lines of longitude is reduced to zero at the North Pole. And what does Santa say? HO HO HO.

15. On the pen-card, Z. said he was "so lonely" (SL: HO) that he might do "MY THING". The letter-sum of MY is 38, an important clue. So is HING. He murdered Stine in the 3800 block of Washington Street. The sequence HING occurs in WASHINGTON. Take it out, and you get WATSON. (H-8, I-9, N-14, G-7: 38)

16. Z. quoted extensively from The Mikado. ("Mikado" in Morse can be read ix as [redacted]. His 9-o'clock line points at Mare Island. He gave directions for going out "4 inches along the radian". 4, by casting out 9's, is another way of saying 13 (M). "4 inches" is "M inch". The intersection of 0530 West Longitude and 58 degrees North Latitude (radian latitude) falls in The Minch, a body of water separating the Scottish mainland from the Isle of Lewis (as in Carroll) in the Outer Hebrides (OH). MIinch. MIkado. Mare Island. "Z" in Morse Code is indistinguishable from "MI" without the pause (X Z: 1100. MI: 11 00).

As noted in Example 7, "53" is frequently given as "KE". K in Morse is 101, binary number 5. As lazy-K, it makes a Roman 5. Lazy-E is Roman 3.

Z 5 3
[redacted]

b6
b7C

17. The most enigmatic line in Z.'s Riverside poem (9 lines in all) is the second:

"Cut, clean, if red! clean"

"Clean" is a doublet, generating the number 2. The text now reads:

"Cut if red clean 2"

Cancellation: F-U. The final text:

CTIREDCLEAN2. DANTE. CIRCLE 2.

The clue is "wind".

18. Z. wrote that he never left fingerprints because he always ~~had~~ put "2 coats of airplane cement" on his fingertips. One coat would surely suffice, but "coat" had to be pluralized for the sake of the letter S. COATS is an anagram for "Sacto", a regional abbreviation for "Sacramento". SAC and "airplane" are further clues. There is a SAC base at Sacramento, Mather AFB. MATHER anagrammatizes as [redacted] again.

b6
b7C

19. In the (genuine) cryptogram of August 1969, Z. said that killing people is "better than getting your rocks off with a girl". This was naturally taken as a symptom of sexual psychopathology. That can't be dismissed entirely. But the phrase's significance is enriched by the knowledge that Z. has a fondness for 0530 West Longitude. That line runs through the Rock of Gibraltar.

ROCKS OFF GIRL BETTER

ROCK OF GIBRALTAR

Cancelling out all pairs of like letters between the two phrases, I get the remainder: SF T EE AA. The doublets generate two 2's.

SF 22 TEA. TEA (1001) is 9. SF 22 9.

It doesn't take too much imagination to read SF 22 9 as a program for the Bay Area: .22-caliber, 9-mm. 22 before 9.

20. The 340-character cipher contains 6 dots, which are neither letters nor geometric forms. I believe that they are pauses. In any case, they appear in such a way as to divide the 20-line text (17 characters per line) into groups of 1 and 4 (undotted lines). The pattern: 144114. It's 38 again, but with 4 standing in for zero. Why 4? You can't have zero lines. And 4 is IV: ivy.

21. The second Riverside letter read in full:

BATES HAD TO DIE. THERE WILL BE MORE.

First sentence: 13 letters. Second sentence: 15 letters.

- [redacted]
- Note also that the first three words are comprised of 5, 3, and 2 letters respectively. The pen-stroke groups taken from the White Rabbit are comprised of 5, 3, and 2 strokes, respectively.

b6
b7C

Z. invariably spelled "paradise" with C: PARADICE. It may be coincidence, but DICE in Binary-Morse is 532.

22. The Death Clock

DEATH in Binary-Morse is 10000110000: 1072. Given Z.'s other demonstrated translations of words to numbers and his love for clockfaces (put an M at the end of the minute hand and an H at the end of the hour hand, and reading the dial as 0, you get an monogram: [redacted] I conducted an Einsteinian "thought-experiment".

Throughout history, the two concepts, Death and Time, have always gone hand-in-hand. Z.'s Bay Area activity culminated in the construction of a gigantic clockface reading 8:38, 38 being TIME. What about the Riverside murder? He left a Timex at the scene. It would be out of character for him not to leave a mathematical message.

1072, to be expressed as clock time, has to be transposed to 11:12. For the sake of precision, 11:12:32.72727. . .(an infinite series of 27's follows). Why? To make the angle between the minute and hour hands exactly 99 degrees. Because 99 is a multiple of 9.

The Death Clock has several amazing properties. When I noticed them, I felt as if I had discovered The Golden Section. I don't see how Z. could have missed them.

The reflex angle is 261 degrees, also evenly divisible by 9. The two angles express a ratio of 11 to 29. Zodiac's first Riverside letter was postmarked 11-29. Coincidence?

The hour hand of the Death Clock is just about 23-3/4 degrees away from the 12-o'clock position. The North Pole is 23-1/3 degrees out of perpendicular to the plane of the ecliptic. In other words, the Death Clock is not a bad picture of Planet Earth.

NB: THE POSTMARK ON THE 340-CHARACTER
CIPHER WAS 11-12.

23. "When we were away from the library walking, I said it was about time.

This is one of the few examples of strange word-order in the first Riverside letter. Z.'s concealment of messages was far more sophisticated in 1966 than in 1969-1974. He apparently wanted Riverside to remain his secret. Even though the content is much the same, the camouflage is heavier.

WWW 0000 WOO OWO O

b6
b7C

Words beginning with W are dashes, all others dots. There is the familiar OH signature first, then what appears to be DRE. Other divisions could have been made (or it could have been taken as a binary number, 1000100: 68). DRE is an anagram of RED, which appears enigmatically in the Riverside poem: "Cut, clean, if red! clean/ Blood spurting, dripping, spilling/ All over her new dress/ Oh well, it was red anyway. . . ." Z. signed himself "Red with Rage" and "Red Phantom".

Note also his choice of the word "dress". Cheri Jo Bates wasn't wearing a dress when Z. murdered her. DRESS is DRE 38 (SS is 19 and 19). Note also the choice of W, letter number 23.

Z. seems to make extensive use of the grammatical principle of predication. Every time he writes, "I am. . .", whatever follows is in code of some kind. "ME 37" is probably another example. In this case, I believe that DRE is the predicate of the implicit AM. AM DRE. DREAM. Specifically, the Red King's Dream. Having become predicated, DRE stands on its own and can be coupled with other subjects, e.g., ME, OH, MO, etc.

24. "Forrest"

This is one of the mystery-words in the August 1969 cryptogram. It is not an indication of illiteracy, but of Morse Code. This time, consonants are dots, vowels dashes (the scheme switches polarity all the way through the five words, odd-numbered words having one polarity, even-numbered words the other).

F O R R E S T
O 1 0 0 1 0 0

010: R O: E 100: D RED.

25. "Athaе"

Z. inserted five mystery-words into the cryptogram. Two have vowels for dashes, consonants for dots. Two others read the opposite way. "Athaе" reads both ways at once, with the same results:

0110 O: PE?
100 11: DM?

Divisions are conjectural, but Z.'s telephonic report of a ". . .murder -- no, a Double Murder. . ." and his subsequent Death Machine diagram would argue in favor of DM. His pre-occupation with lines of longitude would argue in favor of P(OL)E, OL being a 27-sum pair. 10011 is 19. P is 16, and Z. consistently uses E for 3. PE is 19, too. Their sum is 38.

26. The 13-character "cipher"

A E N ♦ X K X M X J N A M

Z. claimed that this "cipher" contained his name. It does. First name, middle initial, family name. It's also a lesson in mathematics.

a. The 4 circular characters are crossed, one vertically and horizontally, the other 3 diagonally. This corresponds to the one large eye, 3 smaller eyes on the Halloween Card, and to the distribution of signatures on the second Riverside letter: one was unsigned, three signed (Z). The singleton in each case is 10, the other three are ones. It's just another illustration of casting out nines.

b. The 10th character is unique. It is neither a traditional letter nor a circle. It is an umbrella. The White Rabbit carries both a watch and an umbrella. The Baker in Snark loses both his watch and umbrella. The watch is the Riverside Timex, and this is the umbrella. In any case, this unique figure marks the end of a series of 10 characters. 10 and 3. The Hole Card has one row of 10 holes followed by a row of 3. 10 and 3 expressed as 1 and 3: casting out nines. The zero in 10 stands for 9. 9 is zero.

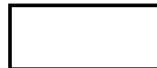
c. 10 and 3 is M. 1 and 3 is 1000, the Morse letter B. B is, furthermore, formed from the numerals 1 and 3. The whole point of casting out nines in Z.-documents seems to be that B and M are equal. And in many problems involving sums of letter-quantities, results consistent with known Z.-artifacts are obtained by assigning a quantity of 13 to B. BM, it appears, is 26: Z. (1 and 3 is also IV: ivy).

d. M2 A2 N2 K E: by the usual rules, MANKE 222. 222 is George Washington's birthday. And by the same process as shown in the instance of the Lake Tahoe Card, A(1) and N(14) add up to 0(15). 0 is an eye. Zero stands for 9, which is the letter I. It works either way: MANKE is []

d. 0000, as a set of zeroes, is the B-M letter H.

f. As in the 340-character cipher, characters fall into two types: block and circle. It's a binary code, namely Morse. One complication has been introduced, however. After the 7th character, polarity is reversed. A previously-discussed case is that of the Halloween Card map symbols: one turns counterclockwise, the other clockwise. The same is true here: left side goes one way, right the other. Symmetry may be a contributing factor, but it also appears to have been necessary to obtain 4 zero-characters for the illustration of casting out nines. On the left, blocks are dashes; on the right, zeroes.

A E N ♫ ♪ K ♪ M ♪ ↴ N A M
1 1 1 0 0 1 0 0 1 0 0 0 0 0
111: 0 0: E 010: R 01: A 0000: H



b6
b7C

The choice of letter-sequence appears to be mathematically dictated. 1110010010000 is 7312, which by casting out nines reduces to 13. In addition, to use the name [redacted] in B-M as a number, the only letter with which it can begin is O, as that is the only one in the group that does not start with zero.

g. The full text: [redacted]

h. There is possibly another, more esoteric, layer to the choice of the letters MAN for the doublets (a form of emphasis). Latin homo as in ecce homo. HOMO, analyzed as a Z.-puzzle, reads [redacted]

27. "KF. I am crackproof."

This formulation was expressed in exactly the same (hitherto unnoticed) manner in the opening of the Riverside poem:

Sick of living, unwilling to die. . . .

Crackproof

KF is WIZARD for PU, which appeared in the Riverside letter in clear:

"Miss Bates was stupid. . .she did not put up a struggle, but I did"

The victim, in fact, fought for her life energetically, as the condition of the ground showed. Note also the close proximity of UP to ID both in "stupid" and "put up. . .I did".

ID in WIZARD is WR, as in White Rabbit. I suspect that as ID, it has its commonly-accepted meaning of "identity". "Rabbit Hole" is another way of saying [REDACTED]

I will hazard a conjecture as to the origin of UP. I believe that it is the predicate of AM UP, itself formed from AUPM, "golden afternoon". See the dedicatory verses to Alice, which begin:

All in the golden afternoon
Full leisurely we glide. . . .

28. "RUSH TO EDITORS"

This phrase was written in large letters on one of Z.'s mail covers. By the usual method of number-generation, it reduces to RUSHTOEDI 2222 (8). Cancellations: R-I, S-H.

b6
b7C

UTOED 8
FGLVW 8

VF. GW. L8.

VF occurs four times in clear in the 340-character "cipher", more than any other combination. GW occurs once. L8 is the "radian" angle, 58. It appears to stand for the name [REDACTED] (5 dashes, 8 dots in Morse). GW is George Washington, the "father of his country". By letter-quantity, GW is 30. VF30 is [REDACTED] in WIZARD.

[REDACTED]
V F T V M V

V3FMT: VF30. VF. GW. [REDACTED]

29. "I am mildly cerous. . . ."

MILDLY CEROUS: MI. OUS. DRY CELL.

Riverside letter: ". . . now she is battered and dead. . . by then, her battery must have been dead. . ." Cheri Jo Bates was hacked to death with a knife, not bludgeoned. Z.'s disconnection of her ignition system would not have drained the battery, and he knew it. He wanted to inject the letters BATER into the text.

MI is Z. DRY CELL is BATTERY. "Z, BERTA'S YOU"

30. "ME 37"

ME (110) is 6. As with "4-TEEN", it's a rebus. 6 before 37 is 31. Z. was 31 on the 29th of January 1974.

31. In the "Citizen" letter, Z. faulted the Chronicle for having printed a "blurb" that read: "in 1957, other people were killing time. Kit and Holly were killing people." No words were misspelled, there was no strange syntax. I believe that the purpose of writing the letter was to sneak in the words "blurb" and "people", for reasons to be presented later. It's an educated guess, but it seems to be justified by the context, discussion of a film, and the centering of Z.'s geometrical scheme on Travis AFB, at that time a SAC base.

BLURB PEOPLE: BURPLE. OPE. BL2. 222.

222 is Washington's birthday. BL2 is B-52. "Burple" and "OPE" are taken directly out of Stanley Kubrick's masterpiece of black humor, Dr. Strangelove (1964). The base from which the fatal flight was launched was Burpleson AFB. OPE was the recall-code. If Z. is a base, and in particular, Burpleson, then it follows that his father is "Burple".

These appeared in the letter immediately following the Stine murder: "fiygue" (for "figure"), "the cops peeled rubber", "blue pigs", "noze rubed". FIY in WIZARD is URB. "Rubber" is made up of particles from [] and "Bur-". "Blue" is "Burple" less RP -- which Z. used once as a return address -- and NOZE RUB is "Z. BURPLESON" less PLS.

BUR implied text: PLE
EUG ENE PLEEN. PEN. L3.

There's the fountain-pen and 53, all from "fiygue".

With "Burple" as the father and [] as the mother, "rubber" is a simplified way of naming one's parents.

b6
b7C

BLUE & RP: "Burple". "RP" in SAC jargon is the Reference Point, a mark used to signify targets on satellite reconnaissance photos in programming electronic bombsights on B-52's. It happens to be Zodiac's sign as well: circle-and-cross. He used "RP" as a return address, and he signed himself "Red Phantom" in one letter. I believe, however, that this meaning is only ancillary to its principal one: RP is WIZARD for IK, a predicate to ME formed from [] (just as I believe that KE/53 is the predicate to IM, from the same name). XIK appears as the Morse from "eryetheyo", one of the mystery words in the August 1969 cipher. XI is 11, K is 11, their sum is 22.

PLS in WIZARD is KOH, potassium hydroxide, a powerful base. Is Z. saying that he is a powerful (SAC) base? Even more intriguing, PLS & OPE anagrammatize PELOPS. 22 and 38 are recurring formulas in Z.'s writings, and it just happens that 38 North (which also runs through George Washington's birthplace in Westmoreland Co., Virginia) intersects with 22 East in the Peloponessus.

32. 532. 3 in Binary-Morse is 11 (M). 5 is E. 2 is B. From left to right, it reads, [redacted]

33. "SFPD 0".

Z. wrote a number of what appeared to be box-scores in the margins of his letters, which were invariably interpreted as claims of (dead) victims. For him to claim, for instance, 37 victims and to give SFPD a score of zero implies that SFPD claims victims. The reaction to "ME 17 plus, SFPD 0" was particularly stupid -- "ZODIAC CLAIMS 17 OR MORE VICTIMS" -- didn't he know how many people he had killed? "17 plus" clearly means something else.

S(19)F(6)P(16)D(4): 45. With the zero suffix, 450.

450: 111000010. The OH (1110000) is clear enough. I believe the 10 is TE, by alphanumeric quantity, 23. The inclination of the Poles is 23 degrees. W, the letter used by Z. in his concealed Morse message of 11-29-66, is also 23.

b6
b7C

34. "I am stalking your girls now." (Riverside letter I)

S	Y	G	N
H	B	T	M

I think that I see [redacted] just as SLAVES showed Z inside [redacted]. Draw your own conclusions.

34. "Hongertue".

OH. ENG. RT. EU.

ENG is the remainder of "engineer" after being subjected to WIZARD-rules (R&I cancel out, NEE duplicates EN). RT is a Berta-fragment, EU a [redacted]-fragment. EU occurs also in BURPLE. BURPLE minus EU: BRPL. In WIZARD, YIKO. "Eryetheyo" -- whatever its other significance -- is suffixed with YO; the concealed Morse is suffixed with IK (XIK).

35. "Slo1".

The last mystery word. Dashes for consonants, dots for vowels: 1100 (Z).

36. 0530 West.

The theme of peninsulas will doubtless one day receive a bushel of psychiatric interpretation, all of them justified. But you can't get away from it: Peloponessus, Cornwall, San Francisco -- add the Olympic Peninsula, Washington State.

The 117th Meridian West and the (SF) Land's End Meridian, 12230 West, bracket all of the State of Washington except the Olympic Peninsula. 117 is the Washington/Idaho border. 12230 runs through the extreme northwestern corner of the state near Blaine.

Cut back to ancient Greece. Tantalus cuts up Pelops into a stew and serves him to the gods on Olympus (2230 East -- on the 24-hr clock, that's when Z. cut Cheri Jo Bate's throat). As punishment, Tantalus is placed in a lake up to his chin in water. But the water flows away from him whenever he tries to drink. Pelops, restored to life by the gods -- all except for his shoulder, which a distracted Demeter swallowed -- becomes the restorer of the Olympic Games and the foster-father of Oedipus, King of Thebes (think of the eye-holes on the Halloween Card). The purpose of the exercise, from Tantalus' standpoint, was to test the perspicacity of the gods. The event which leads to Oedipus' marrying his mother is his answering the Riddle of the Sphinx. NB: element of the quiz. Cf. Zodiac.

Now look at a map of the Olympic Peninsula, across Puget Sound (Puget Sound, birthplace of the B-52) from the state named after GW, the "father of his country". Mt. Olympus, Washington, gives rise to a river which drains its western flank, flowing into the Pacific -- away from Washington -- named the Hoh River.

HOH. Pelops. Jack D. Ripper, drinking only distilled water.

Look next door: Idaho. ID. And further: Montana: MT. GW, ID, and TM (in Morse, TM is the same as MT) all occur on the 340-character "cipher", in clear text. ID and TM are separated by four spaces. GW is 3 lines away. Draw your own conclusions. (Montana always looked bosomy to me.)

But before getting back to 0530 West, which is what this part was supposed to be about, another "thought-experiment".

GOD. I AM THAT I AM. By the usual rules of Zodiac anagrams, substituting W for 23, this reads: GW. IDAHO. MT. 22. And where did Moses hear it? HOREB. HO is [REDACTED] REB is IVY, letter for letter. In WIZARD, HOREB is SLIVY, a near-miss to "slithy" (as in "slithy toves") as MINSY (Mare Island Naval Shipyard) is to "mimsy" (as in "borogoves").

37. Oh, hell. 0530 West.

b6
b7C

In British waters, this meridian passes through The Minch, North Channel, Irish Sea, Land's End. MI from Minch, CHA from Channel, LE from Land's End: [REDACTED] Mare Island CHANNEL- Land's End, San Francisco: [REDACTED] MI - 53: [REDACTED]

The "radian" latitude, 58 degrees North, intersects with 0530 West in the Minch. Geographical features along 0530 spell [redacted]. The "radian" spells [redacted]. The intersection is his name.

Mare Island appears to have been the real center of the Bay Area scheme. It's at 9 o'clock, and 9 is I. BM 53 is a suffix on [redacted], as is Land's End. The two radian angles, spelling [redacted] correspond to these two termini.

b6
b7c

What the clock-time spells is "22 January". Z. was writing his date in the European manner, with Roman I, I, for the month. And I is 9. 22-9 is 22 January, the first day of Aquarius, the Water-Bearer. It's his birthdate.

38. One last thought-experiment

In discussing the Lake Tahoe Card, I pointed out how Z. made M out of LA and I out of TEA. MI is LATE2, or by Mirror-Image rules (MI), IM.

IM LATE2, IM LATE2, FOR A VERY IMPORTANT DATE.

White Rabbit, Walt Disney (WD is zero in WIZARD).

WIZARD ought to become the next Parker Brothers game, there's so much you can do with it. How many things can you see in this?

L E
O V

[redacted]

[redacted] Polish-American artist.

Born [redacted] New York City.

I believe that [redacted] is both "BM" (blue meannies, Melvin Belli. Miss Bates, Lamb, bomb, movie Badlands, benchmark) and IVY. [redacted] is a Pole. She is also a leading personality in the art world, both academic and practicing. She has executed major commissions for, among others, the City of Portland, Oregon. [redacted] was born when [redacted] and is an only child. When she turned 36 (zero), he was still zero. Every 9 years, they zero out together. When she responded to a questionnaire from the Directory of American Artists. she said that she had married in 1937 and had one son, [redacted]. Even he doesn't use his middle name; and she didn't even name her husband. I think that I detect a pathological attachment between mother and son. Z.'s mathematics seem to be directed toward creating an equivalence between B and M (both 13's); reducing 13 to 4 (IV); and demoting E (3). I would even go so far as to hypothesize that Zodiac IS [redacted] at least in the sense that Zodiac is modeled on her. Z.'s work is truly Olympian in scope, a tribute to a great artist.

b6
b7C

[redacted] was exactly [redacted] years of age at the time of the Riverside murder. The use of the Death Clock metaphor is confirmed only by the 11-29 postmark on the first letter, but it would be interesting to know what time the Timex showed. He was 26 at the time of the Bay Area murders. 26 is Z. 26 is, by his arithmetic, B plus M.

If the triad Washington-Idaho-Montana is in fact a geographical depiction of Z.'s family, I hypothesize that the choice of specialty was dictated by the grammatical process of predication discussed above: WIND -- ID NW. Identity in the Northwest. The Hoh River flowing away from the father. At all events, a logical place to begin research would be Ames Research Lab in Sunnyvale. "ARL" appears in Morse in the Riverside poem, and a few of Z.'s letters were postmarked in Northern Santa Clara County.

AFTERTHOUGHT: [redacted]. A WEEK LATER, HE
POSTED THE "ME 37" (I.E. 31) LETTER.

T R E A S U R E M A P S

The Phillips 66 Map

In this communication, Z. suggested turning the "magnetic indicator on Mt. Diablo to North" to find the buried bomb. By the time the police and papers had got done with it, this had turned into "I have buried a bomb somewhere in the vicinity of Mt. Diablo". He said, "you have until next fall to dig it up." Otherwise, it would go off.

Turning the magnetic indicator to North is a scrambled clue. The dial he put on Mt. Diablo was a clockface, with a zero for 12. The 12-o'clock position pointed straight at Travis AFB. "12 o'clock" in aviation jargon means "straight ahead". He was pointing at BM 53. The zero, furthermore, is on the same position as Lake Berryessa on the 26-mile clockface. Lake Berryessa was Zero Hour.

"Dig it up." Back to Riverside. "Miss Bates was stUPID. . . she did not PUTUP a struggle, but IDIDX." DIGitUP. KF. I am crackproof.

It doesn't take too much imagination to see the directions as being to take the magnetic North azimuth from the BM on Mt. Diablo. Local declination is 17.5 degrees east of due North. That azimuth intersects with the 26-mile circle centered on BM 53 near some sinks on the South Fork of Putah Creek. There is a USAF transmitter nearby.

There are indications, discussed above, that Z. was drawing on Dr. Strangelove. One bomb went off in that film, triggering the Doomsday Machine. Think of Z.'s "Death Machine" diagram. "I want to report a murder -- no, a Double Murder." The target was named Laputa. PUtah. HATup. Mad Hatter. Snark: "they pursued it with forks and hope". South FORK, Putah Creek. The USGS abbreviates "Fork" on maps as "FK". KF. I am crackproof.

The motif of the riddle. All of Z.'s known victims were left out in the open, with the mathematical relationships between them to be deduced. It seems logical that he would reverse the exercise, concealing a victim, and then giving mathematical instructions for finding the corpse, just to see if it would work either way. So far, the world gets an F.

"Next fall." Bombs fall. See Strangelove.

Z. had 8 known victims, including the 2 survivors. I believe they count. I also believe that he would have wanted 9 altogether. 9 is I.

The Stine Letter

In the middle of his description of the events following the Stine murder, Z. begins numbering his paragraphs. After number 3, he stops. These three are long-winded, consisting of breathless run-on sentences. I counted words.

1. 2 sentences: 22 and 13 words.
2. 2 sentences: 26 and 18 words.
3. 1 sentence: 26 words.

Note that in each paragraph, the sum of words is a number which reduces to 8 by casting out 9's: 35, 44, 26. "8" is a frequently-encountered signature, possibly because the Morse numeral 8 can be read as "MTI" (he had just shot Stine in the eye).

The letters to which these numbers correspond are V, M, Z, and R. The final 26 is TWO SIX. I know, having discovered the answer by accident:

V	M	Z	R	T	W	O	S	I	X
E	N	A	I	G	D	L	H	R	C

Glide Ranch.

Z. referred to his weapons as "killing tools" which he had "boughten" out of "state" before the ban went into "efect". In one of his box-scores, he wrote, "ME 17 plus", which was interpreted as meaning, "I have killed 17 or more people".

By well-established rules, KILLING TOOLS boils down to SINK. EFECT is, I believe, CEE (106) and FT (26, possibly a shorthand for Glide Ranch). BOUGHTEN is a dialect form of "bought", but Z. uses the correct form only a few sentences farther on in the same letter. It's BEN-OUGHT. 13 plus 3 plus 14 (30), with a zero suffix: 300. STATE is an anagram for EAST.

The western boundary of Glide Ranch in Yolo County is formed by Road 106. Road 106 terminates at an intersection with Road 38, a Zodiac favorite. Between that intersection and the driveway to the ranch buildings, the elevation varies between 17 and 19 feet. An intermittent creek passes through a culvert under the road about midway between the 17 and 19 foot marks on the USGS map. It flows eastward a few hundred feet (300?) into a seasonal sink. The sink and creek are exactly in 38 degrees, 27 minutes, 45 seconds, North Latitude (USGS put a tick on the right margin right there). 38 plus 27 plus 45 is 110. 110 in Binary-Morse is ME.

106 is the price of the Mad Hatter's hat (10/6). The Sacramento Northern right-of-way cuts through a corner of the ranch not far from the site in question. SN: ("I am Not Sick. I am in SaNe.") Glide Ranch is in Section 9. The creekbed and the sink are practically screaming for a metal-detector sweep. I would bet almost any amount of money that that's where the Luger is. The SN junction at Glide Ranch is called Saxon, as in Anglo-Saxon Messengers (Haigha and Hatta). And there are the dedicatory verses of Alice, which begin:

All in the golden afternoon
Full leisurely we glide. . . .

Melvin eats bluber

Z.'s complaint that he saw no nice little Zodiac "butons" wandering around is clearly disingenuous. He said he saw peace butons and black power and MELVIN EATS BLUBER. He closed his letter by urging people to wear Zodiac buttons or else he would blow up his precious school bus. But please, he said, no NASTY ones like Melvin's. Thank you, he said.

MELVIN EATS BLUBER NASTY

MELVIN: M-N, E-V cancel out, leaving LI.

EATS: EAST.

BLUBER: BLUER2.

NASTY.

LIEASTBLUER2NASTY:

LIBERTY. EAST. 2 LUNAS.

Someday, doctoral dissertations will be written on Zodiac's paraphrases for things that are round. Luna is Latin for "moon", something which is occasionally round.

Liberty Island is east of BM 53. It is roughly on the north-south line joining the Putah Creek sinks with Glide Ranch. Right in the middle of Liberty Island, right next to the road, is BM 00, which is right at sea level. BM00 has the same linguistic form in Zodiac's grammar as BOMB: BM02. BM 00 also happens to be at 4 o'clock on Zodiac's gigantic clockface. That's brillig. It's also the reduced form of 22. 00 also appears three times on the Halloween Card: "peek-a-b00 -- you are d00med" and "B00!". If I have any money left over from losing my bet on Glide Ranch, I'll put it on the .22 being buried on Liberty Island.

340-character "cipher"

I made the initial assumption that if the combined cryptanalytic might in the Bay Area couldn't dent this cipher, then it must not be a cipher at all. Given Z.'s demonstrated use of International Morse Code in other messages, it seemed likely that Morse was involved here as well. The text consists of block letters oriented in various directions, geometric forms, and dots. I assumed further that the theme of casting out nines was a likely starting-place. Two letters, I and R, have alphanumeric quantities evenly divisibly by 9 (9 and 18). C, L, and O are also geometric shapes containing a sum of angles divisible by 9 (180, 90, and 360). All the geometric shapes are 9-divisible: triangles (180), squares and crosses (360), and circles (360). The six dots, which are not letters and have no dimensions in geometry, I assumed to be breaks in the text. Since the author's name was already known from other texts, I experimented around, using dots for 9-multiples, dashes for block letters, then reversed polarity. The first 13 characters produced the familiar configuration: ERAHO. The rest of the text was then screened, using an acetate overlay, for over 30 known Zodiac formulas, starting with the longer ones (8 or more characters in Morse). As the text came to be broken down into smaller segments, the remainder was excogitated. Others may quibble with my choice of character-sequences, and they may have better ideas than mine (other solutions gratefully accepted), but I think that the degree of correspondence with other Zodiac messages is striking. Note, for instance, that WIZARD-pairs appear 8 times in the clear text. They also appear in the Morse concealed under the clear. AZ and ZA, which never appear in clear, show up in the Morse.

It seems likely that the principal purpose of this message was to advertise three numbers. It was postmarked 11-12 (1969). 11:12 is the time shown on the Death Clock. The text, which was apparently laid out on graph paper, is 17x20 lines. 17 is also the number of letters in the anagram concluding the August 1969 cipher. 17 is Q, and the WIZARD-correlative of Q is J. I believe Q (Queen) is Z.'s mother, and the number 17 is a paean to her. Otherwise, the text was laid out in groups of 1 and 4 lines broken by dotted lines to form the sequence 144114, a binary notation for 38 (TIME). Z. then filled up the space with formulas intended for his own private consumption. Using a binary code, with one class of symbols for one sign and another class of symbols for the other, he is free to write messages on both levels. With a few exceptions, any pair of block letters can be used in the clear text, since they will produce 00 on analysis. And the geometrical forms can be dressed up with bars, diagonals, dots, and so forth, to give the impression of great complexity, when in fact all of them stand for the same thing: 1.

Suggested reading for dealing with Zodiac puzzles: the nursery rhyme, "As I was going to St. Ives". Z.'s favorite ploy is to point in the opposite direction from the one he is actually going.

340-character "cipher" (2)

1. ERAHO. UE. IK. MB.

Here, once again, is the familiar -- better, familial -- triad: [REDACTED] (ME IK), and Berta Margoulies. IK is the source of RP (via WIZARD), and if Z. is aware of the cross-connection with SAC jargon, it just provides him with another layer of meaning.

2. REB. KE. EU. 9. I. FORM. Q. ME. ZA. TINC. Z. 9.
BY. [REDACTED] Z.

b6
b7C

REB is [REDACTED] and letter-for-letter, it's WIZARD for IVY. KE is from [REDACTED] another predication of the name, [REDACTED]. EU is [REDACTED] The triad again. 9 and I are an equation (cf. Z.'s spelling of Blue Meanie as "blue meannie", where "meannie" is an anagram for "me a nine"). FORM is an inspired guess, inspired partly by a sequence in Sentence 7 that looks like ART immediately following an abbreviation for the artist-mother's name. Q and ME may be another equation: I sense that Zodiac is modeled on his mother (psychoanalytic insights courtesy of Alfred Hitchcock and Anthony Perkins). ZA is, it appears, a taboo WIZARD-pair, one that can be breathed only in Morse. For one thing, to mention it in clear text would give away the alphabetic-reversal scheme, and for another, it's the pair that appears in ZODIAC. TINC just exactly fits in between ZA and Z, and it's the [REDACTED] family's street-address in Flanders, NJ. Z and 9 is an equation: Z am I(9). BY is the WIZARD-pair that characterized the Riverside letter, which was headed: BY -----; it described the victim as "Young and Beautiful" and overstepped the bounds of credulity to expatiate on the subject of the victim's "Battery". [REDACTED] and Z are most likely another equation. Z.'s purpose was to construct a sequence of (dotted and undotted) lines that would spell out TIME in Morse. He had to put a break into this line in order to accomplish that purpose. Otherwise, MT from the next sentence would have concluded this phrase. It's a productive speculation. Here's [REDACTED] in Morse, without breaks:

1 1 0 0 1 0 1 0 1 1 0 0 1 1 1

And here it is, grouped differently:

11 00 101 01 100 111
M I K A D O

How many times did Zodiac quote from The Mikado, and how many times, and how heartily, did the cops congratulate themselves on merely recognizing the fact that he was quoting something? NB: "D2T" in clear text. DDT is insecticide. It's preceded by "I". As Archie Bunker would say, case closed.

340-character "cipher" (3)

3. MT. KE. IM. Z. Zero. IR. TE. MI. NW. AZ. TIME.
BRM. Z. B. IVY. Y. KE.

MT: Zero. KE and IM: [] Z and Zero: equation. IR: WIZARD-
pair, another of the taboo ones. TE and MI: predication from
TIME. NW: See Halloween Card. AZ: See above. TIME: running
theme. BRM: Here the author is confused. I believe he meant
BMR, Benchmark R. BMR is Binary-Morse for 282, the (negative)
elevation of Badwater, Death Valley. As they say over in Germany,
hier irrt sich Goethe. Maybe I'm wrong -- again, alternate sug-
gestions solicited. Z: self-explanatory. B IVY Y: IVY (Berta)
contained within a Zero, an egg, an I, a 9, etc.
KE: the predicate of the multiple subjects, Z, B-Ivy-Y, I'M.

b6
b7C

4. BM. TIME. Z. ME. MB. IM. TE.

This is just marking -- you should pardon the expression -- TIME.

5. KE. MI. EGO. 5. Zero.

KE and MI: obvious, if you've stayed awake this long. EGO could
also be read as PO (LE: 53, Land's End). But I think EGO fits,
among other things, because EG is how Z. would spell "egg". An
egg, as in "goose-egg", means zero. See also Humpty (MT) Dumpty
in Alice. Eg in Anglo-Saxon is "I". Stick with me, and I'll
have you back in Great Falls, MT, in the twinkling of an eye: I:
9: 0. Five and Zero, the most elastic of Z.-formulations. Here
are suggestions:

- a) Mirror-image: 1111100000, binary for 992, the center-piece of the Butcher's Computation in Hunting of the Snark;
- b) Roman 5, V, superimposed on 0 (clockface);
- c) Same as b), only it's rabbit-ears sticking out of a hole;
- d) Sexually connoted, OVum;
- e) Atomic number 50: TIN. TIN is 18 in Binary-Morse, a 9-divisible number. It's also WIZARD for MH (tin is Sn, as in "I am Not Sick, I am in SaNe"). Rife associations with Cornwall, Land's End, etc.
- f) All of the above.

6. Z. Z. or Z. MI. or MI. MI. or MI. Z. Take your pick.

REPORT
of the1 -
1 - 9-4991 - LAB FILEFEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

To: SAC, Boston (62D-5738)

January 24, 1983

FBI FILE NO. 62-119655

LAB. NO. 20507034 D LL PL

Re: UNSUB;
JOAN WEBSTER - VICTIM;
DEC

OO: Boston

Examination requested by:

Boston

Reference:

Communication dated May 4, 1982

Examination requested:

Document - Cryptanalysis

Specimens received

May 7, 1982

Specimen:

K1 Two sets of photocopies of one hundred and nineteen
pages of material relating to
 and the ZODIAC

Result of examination:

Specimen K1 has been analyzed to determine if the "solutions" offered by to the disappearance of JOAN WEBSTER are valid. (Much of K1 concerns analysis of the ZODIAC communications.) Most of theories are based on conjecture and numerous assumptions. Some assumptions are possibly correct. However, selectively dissects the literature (often misquoting material) and presents results only if they corroborate the overall theme of his solution. Thus, on a cryptanalytic, mathematical, and technical basis, the Laboratory contends that the results are forced and inconsistent.

b6
b7C

Unless investigative techniques validate the hypotheses proposed by no further communications will be analyzed or evaluated.

Specimen K1 is being retained by the Laboratory.

2 - Sacramento (9-68)
2 - San Francisco (9A-2296)

1 - Bureau (9-4991)

LMS:yjm (11)*

SET #2

Recd 5/27/81
TIE #10

[REDACTED]
[REDACTED] CA [REDACTED]

26 May 1981

Federal Bureau of Investigation
P.O. Box 36015
San Francisco CA 94102

Dear [REDACTED]

Enclosed is a considerably rewritten and re-edited heap of Zodiac analysis, including the new, improved version of the original article. It reads better now.

Even I don't think everything here is going to survive a rigorous criticism from others with different insights. But I would hope that criticism and debate can produce better results.

Thanks again for relieving me of an enormous moral burden. If I can help out in any way, please let me know (this means: if you get hold of the Death Machine diagram, please let me see it -- it may contain Zodiac's telephone number.)

Sincerely

b6
b7c

PS: I neglected to mention on Friday that my very first communication to [REDACTED] contained Captain [REDACTED] business card and referred him to [REDACTED] at the Tribune. I assumed that if he were truly mystified by my writing him a poem about the American Revolution, or by subsequent letters and cards, that he would contact one or both of these people to find out who was the weirdo involved. He received a stamped card purporting to be a market-research survey questionnaire that was addressed to Captain [REDACTED] sometime around the beginning of April. As far as I know, neither [REDACTED] nor [REDACTED] ever heard from him.

George Oakes



b6
b7C

Z

On the 4th of July 1862, the Reverends Charles Dodgson and Robinson Duckworth took Alice Pleasance Liddell and her sisters Lorina and Edith on a picnic on the river, rowing upstream from Oxford, where Dodgson taught mathematics. The party stopped for lunch on the riverside, where the man who was to become known the world over as Lewis Carroll extemporized the first version of Alice in Wonderland.

The story was a spellbinder, full of happenings that defied explanation. In its published version, it included a number of mathematical puzzles, nonsense verses, and words with strange spellings, but for the moment, it was just a fairy-tale made up on the spot for the amusement of the three little girls, and especially for Alice, who was its heroine.

Carroll later recalled: "I distinctly remember how, in a desperate attempt to strike out some new line in fairy-lore, I had sent my heroine straight down a rabbit-hole, to begin with,

without the slightest idea what was to happen afterwards."

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On the evening of October 30th, 1966, over a century later and half a world away, Cheri Jo Bates parked her VW in front of the library at City College in Riverside, California. When she returned with some books on English composition, her car refused to start. It was found the next morning with half its ignition system torn out. Cheri was found a few blocks away, lying in an ivy bed with her throat cut. A man's Timex watch was lying beside her body. Witnesses who had heard her screams -- but did not call the police -- set the time of death at 10:30 p.m.

A month later, the local press and police received carbon copies of a typed letter from the murderer. It was full of strange phraseology and a number of untruths. But it alluded to details known only to the police, proving that it was from Cheri's killer. "She was young and beautiful," it began. "But now she is battered and dead. She is not the first and she will not be the last. . . I said it was about time. She asked me "About time for what?" I said it was about time to die. . . I am not sick. I am insane," it read in part. It was headed, "BY", which was followed by a long black line drawn with a black felt-tip pen. There was no signature.

Some time later, a strange poem was found scratched into a desk top at the City College library. It alluded to the Bates murder, and it was signed "RH". Almost six months to the day

after the killing, another letter arrived. This time, there were four copies, of which one went to the victim's father. Three were signed "Z". Years went by before expert analysis proved that the poem and the second letter were from the same hand.

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Two years passed. Eagle Scout David Faraday and cheerleader Betty Lou Jensen parked just off rural Lake Herman Road near Vallejo in the northern part of the San Francisco Bay Area. It was late in the evening of the 20th of December, 1968. It was almost the longest night of the year. For David and Betty Lou, the night stretched into eternity. David was found by the car with one bullet in his head. Betty Lou was sprawled 30 feet from the car with five bullets through her back. The killer had fired into the rear of the car to force them out. He had used a .22-caliber pistol with a flashlight taped to it as a night-time aiming device. He apparently anticipated having a running target.

The Lake Herman Road killings had nearly been forgotten by the next summer. On the evening of the 4th of July, 1969, Darlene Ferrin, who was separated from her husband and waited tables to support her infant daughter, parked at Blue Rock Springs golf course near Vallejo, not far from Lake Herman Road, with a boyfriend, Michael Mageau.

Just after midnight, someone walked up to the car on the passenger side. The door was suddenly snatched open, and a hail of bullets poured into the interior. Darlene and Michael were ~~nk~~ shot

three times each. The killer drove into downtown Vallejo and called the police department to report the shooting from a phone booth on Springs Road, only a few blocks away. Darlene died. Michael survived. The killer had used a 9-mm. pistol, probably a Luger.

Three weeks later, three Bay Area newspapers received a cryptogram from someone who claimed to be the murderer. It was too difficult for the military cryptanalysts who worked on it. The solution came from a high-school teacher in Salinas. When deciphered, it read as an encomium on the joys of killing people. The choice of words was strange, and the syntax seemed to break down here and there. It contained queer words like "hongertue" and "athae". The police reasoned that the murderer was mentally deranged and had lost control of his cipher-system. The press reported various theories, and some papers just changed "hongertue" to "dangerous" -- which was the apparent meaning -- and let it go at that. The "cipher killer", as he was now called, was passed off as a crazy who frequented lovers' lanes. Drive-in movies in the North Bay suddenly posted record profits.

Toward the end of that summer, Cecilia Shepard, a former student at Pacific Union College in Napa County, to the north of Vallejo, and Brian Hartnell, who was still going to PUC, were picnicking near the water's edge at Lake Berryessa. It was the 27th of September, near evening.

Out of nowhere, a man approached. His head was covered with

a black hood with eye-slits. The hood was embroidered with a cross-and-circle design. He drew a Luger on the couple. He said he had escaped from Deer Lodge State Prison in Montana, over 1000 miles distant. He said he needed their money and their car. Brian protested that he had only small change, but he gave up his car keys.

The hooded man tied them up at gunpoint, then pocketed his Luger. He pulled out a butcher knife instead and stabbed both of them savagely. He stabbed Cecilia over and over in the back. When she rolled over, writhing in agony, he stabbed her once in each breast, once in the stomach, and once in the genitalia. The stab wounds formed the letter "Y".

His fury expended, he put away his knife and produced a felt-tip marker. He wrote on Brian's car the dates and locations of the Lake Herman Road and Blue Rock Springs attacks, concluding the list with the just-perpetrated slashing. He noted the time as 6:30 p.m. Then he drew a cross-and-circle on the car and signed the document with the letter "Z". He drove far off the beaten track down into the center of the city of Napa, and from a phone booth at a car wash on Main Street, he called up the sheriff's department, which was only four blocks away, to report the attack.

Both victims were still alive when found. Cecilia especially was suffering horrible pain. Death finally brought her relief. Brian pulled through. Cecilia had quit PUC to continue her studies at the University of California in Riverside. She never got there.

On the 11th of October, 1969, cabby Paul Stine picked up a fare in downtown San Francisco. Paul was finishing up a Ph.D. at San Francisco State College and drove a cab at night to support his pregnant wife. The fare slid into the front seat and asked to be taken to the corner of Washington and Maple in fashionable Presidio Heights. Somewhere near the end of the trip, the fare changed his mind and told Paul to drop him a block farther on, at the corner of Washington and Cherry.

Paul pulled over at the corner, in front of a fire hydrant. The fare fumbled in his jacket, but instead of his wallet, he pulled out a 9-mm. Luger. He shot Paul once -- in the eye. As witnesses called police, he used a knife to cut off part of his victim's shirt tail, which he soaked in the blood that had splattered the inside of the cab. Then he walked away. He was stopped by two police officers summoned to the scene by a confused dispatcher to apprehend a black suspect. He told them he hadn't seen anybody matching the description, and they sped away. Paul Stine never finished his doctorate, and his baby was born orphaned.

That was the beginning of a long war of nerves. Two days after the Stine murder, a letter arrived at the editorial offices of the San Francisco Chronicle. It was from the North Bay's "cipher killer". He authenticated his letter with a swatch of bloody shirt tail. The letter began: "This is the Zodiac speaking." He taunted the police for having let him slip through their fingers. They angrily denied his version of the story.

The Bay Area was thrown into a panic. There was no rhyme nor reason to Zodiac's attacks, nothing to hang a hypothesis on. He changed sites, victims, weapons, the way other people change their socks. There was no apparent motive -- other than killing people. The worst part was wondering when and where and whom he would hit next. He wrote that he was thinking of attacking a school bus. For some time, patrol cars convoyed children to school in Vallejo. In Napa County, sheriff's deputies literally rode shotgun on school buses. Bay Area police agencies worked as they had never worked before. But they never developed any substantial clues to Zodiac's identity or his motives.

As far as is known, Zodiac never attacked anyone again. But he kept the Bay Area on edge for almost five years with a string of letters and postcards, mostly to the Chronicle. He usually signed himself "The Zodiac". Sometimes, he was "A Citizen" or "Red Phantom". But the handwriting was always the same, and there was always the now-famous circle-and-cross.

Some Zodiac communications were made up of snippets from newspapers and magazines. One postcard had thirteen holes punched in it. One of the phrases pasted on it read: "FK. I am crackproof." Another card showed a picture of a housing development at Lake Tahoe. It read, in part, "Peek through the pines." The police scoured the Lake Tahoe area, looking for a fresh corpse.

Even when he wrote his own words in felt-tip script, Zodiac was usually weird-sounding: "There is more glory in

killing a cop than a cid," he wrote, "because a cop can shoot back." Cid? "I shot a man sitting in a parked car with a 38," he wrote. The police turned the state of California upside-down, looking for a shooting victim who fit the description. Eventually, they gave up, deciding that Zodiac's lack of consistency and his wild claims of victims, expressed as box-scores, e.g., "ME 37 SFPD 0", were indications of advanced dementia. The accepted reasoning was that Zodiac had stopped killing because he was non compos mentis. His deranged mental state accounted for his inconsistency, his misspellings, his long absences. Sometimes he responded directly to a Zodiac story in the papers, but the response came months after the story's appearance. How could anyone so unpredictable be caught?

Just before Hallowe'en, 1970, Chronicle reporter Paul Avery, who had bylined a number of Zodiac stories, received a greeting card from the murderer. It was a "secret pal" note in which Zodiac had pasted a dime-store paper skeleton. He had adorned the inside with thirteen stylized knotholes, to which he had added eyelashes. He also wrote, in various places, "Peek-a-boo -- you are doomed!" "BOO" and "4-TEEN". The card was signed with a symbol that was variously interpreted as a meteorological symbol and a Jewish astrological sign, as well as the familiar Z-plus-circle-and-cross, which was, depending on who was speaking, the crosshairs of a rifle's telescopic sight, a symbol from a (never-specified) Asiatic religion, or a "mystical symbol of the universe." In other words, nobody could make head nor tail of it.

The police and the papers interpreted the card as a threat against Avery's life. Zodiac was now claiming thirteen victims, they said, and was threatening to make Avery his fourteenth. Only five Zodiac victims could be accounted for (everybody forgot the two survivors, one of whom had been stabbed ten times with a butcher knife, the other shot three times at point-blank range with a large-caliber pistol -- only the dead are "victims"). Zodiac was obviously raving. Ironically, it was Avery himself who published, only two weeks ~~xxxxxxk~~ later, the link between the Bates murder in Riverside and the Bay Area killings. Now there were six -- or eight, depending on one's definition of the word "victim".

Nobody noticed any connection between the thirteen holes in the postcard, the thirteen eye-holes in the Hallowe'en Card, and the thirteen bullet-holes Zodiac had put in his shooting victims. His seven Bay Area victims had had fourteen eyes. He had shot one out. That made thirteen. Zodiac sent a thirteen-character cipher to the Chronicle, which he said contained his name. He apparently thought that the thirteen-hole postcard would trigger a mental association with a Beatles song: ". . . and though the holes were rather small/ They had to count them all. . ." In desperation, he wrote the Chronicle to demand that they fire a columnist named Count Marco. Nobody took the hint -- to count up to M, the thirteenth letter of the alphabet.

One of the more interesting -- and least publicized -- of the Zodiac communications was an oil-company road map showing

Contra Costa County in the East Bay. Near the center of the map was Mt. Diablo, Devil Mountain, the highest peak between the coast and the Sierra Nevada. Every one of Zodiac's Bay Area murder sites can be seen from the peak of Devil Mountain. Zodiac had superimposed a clock face on its peak. It read: 0-3-6-9. 12 o'clock had been replaced by the ominous Zero Hour. In the letter accompanying the map, he intimated that something interesting would be found by placing a radian angle on Mt. Diablo. As he had already been categorized as crazy, nobody followed his instructions. The police suppressed the map, anyway.

Zodiac was last heard from in mid-1974. A letter postmarked late in January of that year quoted extensively -- as had previous letters -- from the Gilbert and Sullivan operetta, The Mikado, and it concluded with a group of figures drawn with a felt-tip pen. When a facsimile of the letter was published on the Chronicle's front page, the figures were obliterated.

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Seen from the perspective of outer space, the Zodiac murders make a lot of sense. They show, in fact, a degree of precision and a consistency of design which, combined with the savagery and viciousness of the crimes, is downright blood-curdling.

The Zodiac, after all, is a circular band in the sky, from which the stars look down on the earth. An approximation of this exalted view can be had just from looking at a road map, such as the Mt. Diablo map.

A half-dozen years after Zodiac had faded from the public consciousness, I decided to take him at his word. I purchased a U. S. Geological Survey map of the Bay Area, a quantity of acetate sheets, and a large protractor. I drew a radian angle (midway between 57 and 58 degrees) on an acetate overlay and superimposed its apex on Mt. Diablo. A curious thing happened. And as I continued the mathematical experimentation, it became, as Alice would have put it, "curiouser and curiouser."

I rotated the radian around until one leg passed through the site of the Blue Rock Springs murder. A chill ran up my spine as I noticed that the other leg ran straight through the murder-scene in Presidio Heights. I tried it another way. This time, I set one leg on Mt. Diablo and rotated the overlay around until the other leg hit Blue Rock Springs. This time, the apex came to rest on a benchmark on Travis Air Force Base, BM 53.

Sighting northwest up to Lake Berryessa, I noticed that the line between BM 53 and Blue Rock Springs formed what looked like a right angle with the west shore of the lake. With my protractor, I constructed a 90-degree angle on the overlay. The line ran straight through the Berryessa site. I measured the distance from Berryessa to BM 53 and from there to Mt. Diablo. BM 53 was equidistant from both points, roughly thirteen miles each way. Zodiac had scribed a circle. And within the circle, a radian and a right angle. This was no accident.

He must have made Mt. Diablo the anchor of his scheme because

he was very knowledgeable about maps and map-making. The benchmark on Devil Mountain is the crossing-point for the east-west and north-south baselines used by the USGS in dividing up the entire western U. S. into townships. Of all the benchmarks west of the Rockies, its position is known with the greatest precision. A benchmark is a small brass plate stamped with a circle-and-cross. Its function is to serve as a touchstone of accuracy for surveyors.

The Stine murder still didn't make any sense to me, unless it had served to construct a second radian, just to prove that the first was not accidental. Anyone who would risk the gas chamber just to draw geometric designs on the map would not leave loose ends hanging around. The line BM 53-Lake Herman Road was a loose end, unless it tied off the Washington Street-Devil Mountain azimuth. I carried it out to an intersection just off a promontory in San Francisco called Land's End, after Land's End in Cornwall. Was that the tie-in?

From somewhere at the back of my mind, I recalled the word "L-TEEN" from the Hallowe'en Card. It didn't say "fourteen victims" to me. This was a mathematician talking, not a raving maniac. An egomaniac, yes. But a lunatic, no. The angle formed by Blue Rock Springs-BM 53-Presidio Heights looked acute. My heart was pounding with dreadful anticipation as I drew a $1\frac{1}{4}$ -degree angle on my overlay connecting those three points. It intersected with the line between Mt. Diablo and Land's End in the block between Maple and Cherry on Washington Street. I was sick with horror.

It felt as if someone had kicked me in the stomach.

I went back to the Hallowe'en Card and studied it closely. The "signature" at the bottom was particularly interesting. The pelican-like thing at the left had always been interpreted as meteorological or astrological. Now that I looked at it in the light of the pattern emerging on my map, it looked very much like a right angle with flags and dots attached. It would correspond to the Blue Rock Springs-BM 53-Berryessa right angle if turned 90 degrees toward the northwest. It looked a bit out of kilter on the card. I measured the angle its left wing formed with the bottom margin of the card: 53 degrees. 53 again.

Now the two dots between the pelican's wings took on a malevolent glitter, as if they were two hard cold little eyes staring at me. The eyes. I's. Zodiac always dotted his I's, even in upper case. I rummaged around for my old Boy Scout manual, and when I found it, I turned to the chapter on signals. It was Morse Code. Reading from left to right, the dots and dashes on the pelican spell "NW" on the outside of the angle. Inside, near the center, the two dots spell "I".

TURN NORTHWEST. I AM AT THE CENTER.

It was like a small, thin, evil voice speaking to me across a gulf of twelve years' time. My skin was crawling with horror. Zodiac's eyes penetrated through to the very marrow of my bones. There wasn't a sound in the house, but I thought I heard him breathing. There was a faint stirring of air near my elbow, as if we were standing

side by side. There were now two of us who knew the guilty secret, and he was the other one. Was he looking at me right now? Did he know that I knew?

Shaking off my paranoia, I looked at the "signature" again, keeping my eyes averted from the evil bird on the left-hand side. The Z-and-"crosshairs" was meant to be rotated 90 degrees to the northeast, symmetrically opposite to the pelican. It was a compass rose, pointing the way north, a map-orientation symbol. And there was something else about it.

The symbol on the left turns counterclockwise. The one on the right, clockwise. Just like the faucets in your bathtub. WATER. Riverside. Lake Herman. Blue Rock Springs. Lake Berryessa. The Washington Street fire hydrant. The phone calls from Sorings Road and the Main Street carwash. Water, water, everywhere.

I still didn't understand Lake Herman Road. How did it fit in? I measured the angle between it, BM 53 and Blue Rock Springs. 11 degrees exactly. Secondary meanings crowded into the forefront of my mind: Main Street, Springs Road, mainspring. It was a clock. He used a 22 at Lake Herman Road, then a 9-mm. at Blue Rock Springs. 22 before 9: 8:38. The hour hand sweeps a half-degree a minute. At 8:38, it stands exactly 11 degrees below the 9-o'clock line. He got it both ways.

Zodiac had left a Timex watch at the scene in Riverside. He used the phrase "about time" three times in rapid succession in reporting his conversation with Cheri Jo Bates. He wrote to the

Chronicle (from the Greek chronos, "time"), the Vallejo Times-Herald, the Los Angeles Times. One part of the cryptogram had gone to the San Francisco Examiner, known popularly as the "Ex". Time plus Ex: Timex. He didn't write to the Oakland Tribune, the Napa Register, or the San Jose Mercury-Herald. He pasted U.S. Postal Service stickers reading "Mail Early In The Day" on his envelopes: the sticker shows a clock face. He put his Zero Hour clock on Mt. Diablo. It was about time, all right.

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What little physical evidence there is seemed to point at someone in the Air Force. A footprint attributed to Zodiac was identified as having been made by an Air Force-issue "wing-walker" shoe, for instance. Both the North Bay and Riverside sites were near Strategic Air Command bases, Travis in the north and March in the south. Not only was Zodiac's design centered on BM 53 on Travis, he had signed one letter "Red Phantom" and had used "RP" as a return address. "RP" is SAC jargon for Reference Point, a circle-and-cross mark exactly identical to Zodiac's sign. The RP is used to mark targets on satellite reconnaissance photos for the B-52 bombers' megatonnage. The marked photos are fed into a computer that programs the electronic bombsight that guides the warplanes to their targets. The cybernetic bombsight performs thousands of computations per second, scanning the ground below for features that match the photos stored in its memory. When it finds a match, it takes over flying the plane, guiding it unerringly to its target, programming the flight approach and the trajectory of the bomb it will fling.

at the RP it superimposes on the enemy terrain ~~is~~ in its electronic mind's-eye.

The logical candidate seemed to be an intelligence analyst in a bomber support group called an Aerospace Reconnaissance Technical Squadron, ARTS. That would narrow down the search considerably. A screening of personnel records for the ARTS units at March and Travis ought to produce a small list of persons who had been stationed at the right place at the right time. The interval in time between the Riverside murder and Lake Herman Road seemed to argue for a personnel transfer, possibly to Vietnam. A large group of SAC personnel had been shipped from March soon after the Bates murder to Hamilton AFB in Marin County for small-arms indoctrination prior to shipment to the war zone. With a normal twelve-month tour of duty in RVN and home leave, most of the gap seemed to be filled in.

I made a full presentation of the geometric design and suggested the Air Force connection to police authorities, and they followed up on it, checking with OSI, the Air Force's Office of Special Investigations. They came up empty-handed.

Unfortunately, I hadn't yet learned how to read Zodiacee. There was a problem in perspective as well. The hands on a clock don't point at the center. They point outward. And eventually, I came to recognize the number "53" for what it was: a quote from the periodic table of the elements. Atomic number 53 is iodine, and its symbol is the letter I. Benchmark I, BM ME: he had merely found a feature on the map

that fed his egomania. The "I" at the center of his map-symbol did not mean that he was in the Air Force. It just meant that the feature on which he based the center of his design contained a concealed form of the 9th letter of the alphabet, the most important one.

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ARTS was a curious coincidence. I had been thinking of the resemblance between Zodiac's geometric scheme and the arts. Thanks to Erich von Däniken, everyone knows about the enormous designs laid out on the Peruvian desert that are visible only from high up in the sky. Just a few years back, the North Bay had been the setting of Christo's Running Fence, a work of art whose overall design could be seen only from the air. Charter pilots had done a land-office business during the few weeks the Fence was up.

I talked to a friend who paints. He hunted up a book for me on modern American sculpture. There was a chapter in it on "earth-work" art. One pioneer in this area dug some 600 miles of trenches in the Sahara Desert with a backhoe, constructing geometric patterns meant to be perceived only from far above the earth. Large-scale projects like that one were specifically intended to be photographed by reconnaissance satellites. Others working in the earth-medium have incorporated serial reconnaissance photography into their work. The movement was in full swing in the mid-sixties, major works being executed around 1966-1967, two years before Zo-

Zodiac's Bay Area rampage. He was the crest of the wave, and nobody knew it -- except Zodiac himself.

He had found the ultimate artform. Other artists had sought to remove their work from the ordinary human perspective, but at least the artifacts -- the trenches, for instance -- were still visible. Zodiac had trumped them all by using invisible lines whose interrelationships were apparent only from the satellite perspective. And he had disguised his materials as corpses, to make everyone think that it wasn't an artist at work but a mass murderer instead. His one-sided correspondence with the Chronicle, his school-bus threat, his publicizing his encounter with the two officers on October 11th to play off an embarrassed police department against the press, it was all just part of the conceptual artwork. It was just another late-sixties Happening.

There was no passion, no irrationality, no hot blood in Zodiac. He was cold, precise, calculating. His victims were mere markers. They just happened to be standing on an invisible line whose relationship to other invisible lines could be seen only from outer space by someone whose eye was informed by the guilty secret. And as I can testify, the spectator, even at a remove of twelve years' time, is drawn into the web of evil that Zodiac wove around BM 53. Our word "conscience" originally meant knowing something together with another person. Zodiac was obviously a sociopath, a person without a conscience. Somehow, I had been appointed to fill the gap. I had become another of the living victims.

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Once the calculation and design that went into the 26-mile-wide clock face became apparent, it seemed obvious that Zodiac's rambling, misspelled, often incoherent communications were not the product of a crazed nincompoop. There had to be reason and order behind them.

The pelican provided the first clue: Morse Code. Some of Zodiac's supposed ciphers are not ciphers at all, but Morse Code disguised as cipher. Military and amateur cryptanalysts alike gave up on them, not realizing that they had been duped by the genuine cryptogram of August 1969 to take every cryptic-appearing communication from Zodiac as a cipher. Nobody attempted to analyze the merely demented-sounding passages.

Zodiac used several means to conceal meaning. Most of them have been around for thousands of years, such as anagrams, the scrambling of letters in a word or phrase to spell something else. Anybody who has ever played Scrabble knows about anagrams. In the Zodiac literature, however, anagrams share a feature with chemistry. A letter which is duplicated generates a number. For instance, the water molecule is diagrammed schematically, HOH -- two hydrogen atoms joined to an oxygen atom. But for quantitative purposes, the two H's are lumped together and counted up with the numeral 2: H₂O. The number 2 is part of the text.

Zodiac quoted a lot from The Mikado. In one letter, he recited a patter-song of Ko-Ko, the Lord High Executioner, in which

Ko-Ko says that he has "a little list" of potential victims, including "people who eat peppermint and puff it in your face". But Zodiac didn't write "puff it". He wrote "phomphit". A wave of titters swept the Bay Area when this was published at the expense of the poor loony who couldn't even spell. As usual, Zodiac had the last and longest laugh.

PHOMPHIT: P2 H2 O M I T. H2O equals MT over 2PI. MT is Zodiac's shorthand for "zero" or "circle". A circle divided by 2pi is the radian angle. H2O is one of his signatures, hence all the water-clues. What was thought to be a product of mental aberration was really a mathematical equation traveling incognito.

When I first read the Riverside letter, it immediately struck me that Zodiac was flogging at least one clue to death. The letter was headed: "BY", followed by a long black line. He began, "She was young and beautiful. But now she is battered and dead. She was not the first, and she will not be the last." Later, he described how he disconnected Cheri Jo's ignition system and supposed that by the time she left the library, her battery must have been dead. Young and Beautiful: Y and B. A is the first letter, Z is the last. B and Y are not the first and not the last; they are second and next-to-last. What he did to her car would not have drained her battery, certainly not in the two minutes he said it took her to do her business in the library. He said she was "battered and dead". She had died of a severed jugular. Now he repeated a near-rhyming phrase, "battery . . . dead". He was using

emphasis. "Battery" begins with B and ends with Y. On the Hallo-we'en Card, he made a cross of the words PARADICE and SLAVES. In its quarters, he wrote, BY KNIFE, BY GUN, BY FIRE, BY ROPE. BY, BY, BY, BY. I don't know quite how it came to me, but it stood full-blown in my mind in an instant that these two letters are the only ones in a reverse-alphabet scheme that spell an English word. After some experimentation with this system that seemed to produce results, I named it WIZARD.

WIZARD is probably the first cipher a child would think of. All it involves is reversing the alphabet and substituting for any letter the corresponding letter in the reverse alphabet:

A	B	C	D	E	F	G	H	I	J	K	L	M
Z	Y	X	W	V	U	T	S	R	Q	P	O	N

The only other twist is that when two matching letters, such as S and H, occur in the same text, they cancel one another out. Cryptanalysts call such letters "nulls": nulls flesh out a text but contribute nothing to its content.

For instance, Zodiac wrote soon after the Patty Hearst kidnapping to sing the praises of the SLA, which he erroneously said got its name from the Old Norse verb slá, to slay or kill. When he repeats or misspells anything, it is invariably a sign that there is concealed significance. Here is SLA in WIZARD:

S	L	A
H	O	Z

Z is his signature. The rest of the message is OH.

In several places, Zodiac wrote that he was killing people to

"collect slaves for paradise". In the word SLAVES, the letters V and E are a WIZARD-pair and so drop out. The remainder translates:

S L A S
H O Z H

Z. H20.

And why call this cipher-system WIZARD? Here's the word "wizard" in WIZARD:

W I Z A R D
D R A Z I W

The whole word is made up of WIZARD-pairs. It all vanishes at the drop of a wand, just like Merlin.

Zodiac's most ingenious code-system, however, is a combination of Morse Code and binary numbers. It occurred to me that anyone who would lay out a map-symbol on a greeting-card with a protractor so as to get an exact 53-degree angle must be adroit at concealing meaning behind numbers. How would one conceal a word in number -- other than writing it in Roman numerals? Write out the word in Morse Code and then rewrite it as a binary number, using 1's for dashes, 0's for dots. ^I tried it, and it worked.

Everybody uses binary (base-2) numbers these days, whether they know it or not. You use base-10 numbers to balance your checkbook, but your bank's computer uses base-2, binary, numbers to prepare your statement. Maybe that's why they sometimes don't agree. Here are a few binary numbers: 1(1), 10(2), 11(3), 100(4), 101(5), 110(6), 111(7), etc. They're exactly the same as the base-10 numbers, but they're written differently. Morse Code is a binary

system, having only two characters, dot and dash. By substituting 1's for dashes and 0's for dots, Zodiac was able to transform words into numbers and numbers into words disguised beyond recognition.

"4-TEEN" is a stunt performed by a virtuoso who knows that his audience is incapable of appreciating his artistry. Here's TEEN in Binary-Morse: T(1) E(0) E(0) N(10). 10010: 18. "4-TEEN" is a rebus, a puzzle in which the relationship between two things implies a verbal clue. "4" before "TEEN"(18). Four before 18 is 14. "4-TEEN" says "14" in English; in the Binary-Morse rebus, it says it again, another way. Once again, Zodiac gets it both ways.

Zodiac wrote an indignant-sounding letter to the Chronicle to complain about a movie advertisement because the movie, he said, glorified violence. He signed himself "A Citizen". Not a word was misspelled. His English was perfect. Why did he sign himself "A Citizen"?

CITIZEN: Z is his signature. CII is the Roman numeral for 102. That leaves TEN.

102 (CII)
10 (TEN)
112

Here's 112 in binary notation: 1110000. 111 is 0. 0000 is H. "Z. OM." again.

Then there's "cid". He didn't misspell "kid". "Cid" is made up entirely of Roman numerals: D (500), C (100), I (1). 601. 1001011001 in binary notation. In Morse Code, it's X(1001), E(0), M(11), ~~EEXX~~ I(00), T(1). XEMIT. Timex. Why backwards? Because

forwards, it spells the number 617, Roman DCXVII. Try spelling anything that even remotely resembles English with that.

"I shot a man sitting in a parked car with a 38". Again, a violin recital for the deaf. Zodiac shot three men sitting in parked cars, one with a 22, the other two with a Luger. The one he shot with a 22 was unwittingly sitting on the end of a gigantic invisible hour-hand pointing at 8:30. Another was shot by a fare who had ordered him to skip the block between Maple and Cherry: the 3800 block. "38" may be an allusion to the 3800-foot-plus altitude of Devil Mountain and the nearby 38th Parallel. But it also spells something.

38 in binary notation is 100110: T(1), I(00), M(11), E(0). TIME. The clockfaces. "I said it was about time. She asked, about time for what? I said it was about time to die." The Timex watch, left on purpose by Cheri Jo's lifeless corpse, probably holding some mute mathematical message for its uncomprehending finders. (DEATH in Binary-Morse, translated into clock-time, is 11:12. Is that the time it showed when the police found it in the ivy?) 38: 100110. As a date, it's 10(0)11(0), 10-11, the 11th of October, the date on which he murdered Paul Stine in the 3800 block of Washington Street.

He didn't program just the date of the Stine murder. He killed Cheri Jo Bates at 10:30 on 10-30. The July Fourth attack in Vallejo (7-04) is connected by a radian angle to Mt. Diablo, which stands on the periphery of the clockface where the hour hand

points at 7:04. The Lake Herman Road murders (12-20) took place a stone's throw from the 122nd Meridian. The most significant mathematical pattern, however, came out in the Lake Berryessa stabbings. And to understand that, we must go back to the Hallowe'en Card again.

The thirteen eyes on the card are divided into two groups: at the extreme left, there are nine very small eyes surrounded by woodgrain. Eight are surrounded by whorls of grain-lines, the ninth is suspended in the middle of a knothole. To their right, there are four larger eyes. One is very large, and the three to its right are smaller. It's a graphic illustration of the mathematical principle called "casting out nines". The very large eye is a 10, the three smaller ones are 1's. 1 and 3 is the remainder when 13 is divided by 9. It works with any number. Just add together its digits until only one remains. That's what is left when the original number is divided by 9. The practical effect is that 9 is the same as zero: 18, 27, 36, 45, etc. "I" is the 9th letter of the alphabet. The equation seems to read, "I am 9 is zero is a hole is an eye." That's why Zodiac sat in the front seat of Stine's cab -- so he could shoot him in the eye with a 9-mm. bullet. And that's why he wrote "meannie" for Blue Meanie: MEANNIE is an anagram for ME A NINE.

The Berryessa stabbings took place on 9-27, at 6:30, according to Zodiac's own documentation. 9: zero. 27: zero. 63: zero. On Zodiac's Mt. Diablo clock, Lake Berry-

essa corresponds to Zero Hour. Note what WIZARD does to the first three letters of "Berryessa":

B	E	R
Y	V	I

Cheri Jo Bates, Cecilia Shepard -- both slashed cruelly to death, via a mathematical transformation, both murdered in the ivy.

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I had felt that the 13-hole card was an implied quote from a Beatles song. As Zodiac's style became more and more familiar, it seemed that this was an important element of his literary technique. Name part of something everybody knows. The real message is the part that is left out. "Holes" implies "they had to count them all" -- that was the invisible, the vanished part of the quotation. Because it was invisible, like Zodiac, the invisible man, it was the most important part. He quoted extensively from The Mikado, but he never mentioned the title itself. Here's MIKADO in Morse Code:

11	00	101	01	100	111
M	I	K	A	D	O

Here it is again, with only one character shifted:

11	00	101	0	1100	111
M	I	K	E	Z	O

MIKE. Z. ZERO. A name, Zodiac's Z-signature, the mathematical theme of vanishing. "Mikado" was a hidden signature. Those same fifteen characters, in exactly the same sequence, occur in the so-called 340-character cipher of November 1969, which looks

like a cipher, but is actually a Morsed message. That message, like others, contains the cryptic-looking groups KE and IK. Finally, it came to me that these were predicates formed from the name MIKE. The egomaniac was so obsessed with himself that he had produced every single conceivable permutation on his own name, including: ME IK, IM KE. Now his use of "RP" as a return address made sense. The connections with SAC was purely coincidental. RP was just the WIZARD form of IK.

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There was something about Lake Berryessa that nagged at my mind, something that I felt lurking just out of sight beyond the periphery of my memory. Zodiac had used a butcher knife to lay open a part of Cecilia Shepard's body vulgarly called the "beaver". The "Y" he stabbed in her was the WIZARD-partner of "P". He had said that his "killing tools" were "bought out of the state". "Out of state" is normal English, not "out of the state". Was it an acrostic, BOOTS? He signed himself HO or OH. He was leaning hard on the theme of vanishing numbers, casting out nines.

"Then it came to me: Lewis Carroll's nonsense poem, "The Hunting of the Snark". It had been taken as nonsense before, but now it made an inescapably grisly sense. In "Snark", there is eight of everything. Eight characters, all of whose names begin with "B". The poem is divided into eight "fits". F: 6, I: 9, T: 20. Sum: 35. Three and five is eight. When the Snark finally appears, in the eighth fit, "The Vanishing", it makes a ninth, and both it

and the Baker vanish. The eighth fit is nine stanzas long. Zodiac left nine cartridge-casings at Blue Rock Springs. The Luger holds only eight rounds in its magazine.

The Baker loses his watch. He also loses 42 boxes of baggage. 42 boxes is the cube of 42, 74,088, which is evenly divisible by nine, hence a zero. He has no name, and so everyone addresses him simply as "Ho!" HO. Boots is the first character named -- and he is described as "a maker of Bonnets and Hoods". Hoods. Lake Berryessa. And the Butcher expresses a keen desire to give up hunting the Snark in favor of knifing the Beaver.

Deer Lodge, Montana. DLMT. In Roman numerals, D is 500, L 50. MT is Zodiac's shorthand for zero. Deer Lodge, Montana: 5500, the range in nautical miles of the Snark intercontinental missile. The Snark, a forerunner of today's air-breathing cruise missiles, was deployed by SAC in February 1961 at Presque Isle AFB, Maine (the Main Street telephone booth again!) The missile had a penchant for vanishing. When it was first test-launched from Cape Canaveral in 1956, its guidance system lost track of the fixed stars it was supposed to navigate by. It went off course and vanished into the jungles of Brazil -- Zero Latitude. When the Snark program was reviewed by the incoming Kennedy administration in 1961, it was declared marginal and cancelled in June of that year, after only four months on line. It lived up to its literary namesake.

MT is from Lewis Carroll, too. Remember the Mock Turtle's plaintive song in praise of Turtle Soup? He calls it "rich and

green". Turtle soup isn't green. Split-pea soup is green. The implied riddle is, "When is a tureen of turtle soup not a tureen of turtle soup?" Answer: when it's MT, Mock Turtle, empty. The empty dish is a zero, a hole. It's green-rich MT, Greenwich Mean Time, named after the observatory that stands on the Prime Meridian, the Zero Longitude line. GMT is known to navigators the world over as "Z-Time".

Land's End, Cornwall, is 5°30' west of the Prime Meridian. The Mt. Diablo-Washington Street line intersects with the BM 53-Lake Herman Road line a few yards off the beach at Land's End, San Francisco, 122°30' West Longitude. That was where Zodiac's scheme was pointing. It's \pm 5°30' west of Riverside. Riverside is 117° west. 1 and 1 and 7: 9. Zero. Prime Meridian. Zodiac's Greenwich. 117° West also runs straight through the deepest hole on the North American continent: Badwater, Death Valley. Bad, water, zero, hole, death. It reads like a table of contents.

When Humpty Dumpty fell off his wall, Alice learned that there were exactly 4209 King's Men. In binary notation, that's 100000-1110001. The digits group this way: 1-5-3-3-1. 1 for David Faraday, 5 for Betty Lou Jensen, who was shot on the run away from the car to establish the sequence 1-5. 3 each for Darlene Ferrin and Michael Mageau. 1 for Paul Stine.

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I found the source of the pen-stroke figures from the January 1974 letter in about an hour after obtaining a photocopy from the police. Beyond a certain point, I can't say exactly how I did it.

It seemed logical to assume that Zodiac would have quoted from something ~~fr~~ that everybody knows. Otherwise, the challenge he posed the world would have been meaningless. His ravening egomania would have had to go hungry.

Alice seemed a likely choice, given the other implicit Lewis Carroll quotations in Zodiac's work. John Tenniel's illustrations have been familiar to hundreds of millions of children for over a century. It also ~~xemix~~ seemed likely that the illustration would show a timepiece. Jabberwocky has a sundial. The mantelpiece in Looking-Glass House has a backwards clock.

But there's only one watch, the kind you can carry in your pocket and leave behind at the scene of a murder. The White Rabbit is looking at it, fretting about the time, in the illustration that accompanies the chapter, "Down the Rabbit-Hole". Zodiac signed his poem "RH" in Riverside.

That was the end of the trail for the deductive workings of my conscious mind. From there, it went on automatic pilot. It had stored in its unconscious memory from a hundred readings the exact configuration of details that went into Zodiac's doodle. Like the B-52's electronic bombsight, it scanned the terrain for familiar features, searching for a match. As soon as it was in familiar territory, it locked onto the approach to target, performing thousands of silent computations per second. Without my being aware of any logical path, it drew my eye irresistibly to a Strangelovian rendezvous with Zodiac's hiding-place: the lower left-hand corner of the

White Rabbit's waistcoat and the tip of his umbrella. There were even two fragments of John Tenniel's monogram. The rest formed someone else's monogram: MOH.

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When Zodiac went looking for murder victims on the 4th of July, 1969, he wasn't celebrating American independence. He was commemorating an event that had taken place over a century before on a sunny riverside in England, where an eccentric mathematician from Christ Church College, Oxford, entertained three little girls with an extemporaneous story of incredible wonders in a remote land that existed only in his imagination, like the world of the Red King's Dream. Later, he bestowed this benison on his amiable invention:

And, though the shadow of a sigh
May tremble through the story,
For 'happy summer days' gone by,
And vanished summer glory --
It shall not touch with breath of bale,
The pleasance of our fairy-tale.

He was horribly wrong.

The Jabberwock is alive and well and somewhere in our midst.

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ADDENDA

1. In various places, Z. wrote that he killed people in order to collect "slaves" for "paradice" (sic). SLAVES and PARADICE appeared in the form of a cross on the back of the Halloween Card. In the word SLAVES, V and E are a WIZARD-pair (22 and 5), thus cancelling out. The remainder is SLAS.

S L A S
H O Z H

The message: Z. HOH. or Z. H2O.

2. Riverside Letter I: "I am not sick. I am insane." Look at it again:

I am Not Sick. I am in SaNe.

N S
M H

SN/MH occurs frequently in the literature. On at least one mail cover, Z. affixed a USPS sticker reading, "Always use the correct ZIP Code". ZIP may be what artists call a "found material", something ready-made that can be turned to one's purpose.

Z I P
X R K

SN plus ARK: SNARK.

SN may also be another quote from the periodic table. Sn is tin, and TIN in Binary-Morse is 18 (alternate spelling of TEEN).

3. "Doo" for "do". DOO, by number-generation, can be read as D20, deuterium oxide, a.k.a. "heavy water". Z. was described by surviving witnesses as overweight.

4. Z. complained that he saw everyone wearing peace and black power "butons" but no Zodiac butons. Written out as a Binary-Morse number, BUTON is 1000001111110, 4222. 42-22 is the latitude of Cambridge, MA.

In the Riverside letter (I), Z. wrote this sentence: "When we were away from the library walking, I said it was about time." The syntax is peculiar. "Walking" in normal English would follow "were". The cluster of words beginning with W at the beginning is also striking. Taking W-words as dash, all others as dot, this pattern emerges:

111 6666 100 010 0: OH. DRE.

The OH is clear enough. The DRE is conjectural, but it seems to be reinforced by Z.'s statement that CJB was wearing a red dress at the time of the murder (Riverside poem). RED is anagram for DRE, and DRESS can be read as DRE 38 (S is 19, SS is 38). DL MT (Deer Lodge, Montana) can be read in Binary-Morse as 550 and 0:

550: 1000100110: 100 010 0 11 0: DRE ME. MT is 0.

MEODRE: 110111000100: 7108. 71-08 is the longitude of Cambridge, MA.

A note on Z.-grammar is in order here. Z. seems to form phrases based on a prefix that is usually ego-related, such as ME, IM, OH, SN, etc., followed by a predicate of some sort. Once the phrase has been created, the predicate becomes separable and stands on its own or can be combined with other prefixes. MEODRE in that specific sequence is conjectural; I haven't seen it anywhere. The elements are in DL MT. DRE is found in two Riverside documents, as mentioned above. If it is part of a Binary-Morse expression giving the geographical coordinates of Cambridge, DRE may have been separated from another cross-figure:

M
E
BUTON
D
R
E

5. Z. wrote that he wanted to see "Zodiac butons" "wandering around". "Around" appears to be a paraphrase for "circle" or "zero", a running theme in Z.-documents, i.e., "a round". Buttons do not wander around. "Wandering around" can probably be rewritten as "wanderingo".

W A N D E R I N G O
D Z M W V I R M T L

Cancellations: D-W, R-I. The remainder: MMTLVZ. The two M's generate a 2. Z is a signature. LV2MT is 570. 570 in binary notation is 1000111010. 1000 11 101 0: BM KE.

Morse K is the binary 101, 5. Rotated 90 degrees, K (lazy K) is the Roman 5. E is generally used for 3 where letter-sums are involved (lazy E is Roman 3). BM KE can be read as Benchmark 53.

6. Z.'s first letter to the Riverside Press was addressed to the paper by name, followed by street address, city, state, and ZIP Code. The letter was stamped. By contrast, the carbon copy of the same letter sent to the Riverside police had no stamp and was addressed simply, "Homicide Detail. Riverside."

HOMICIDE DETAIL is an anagram for [REDACTED]. The RH can be taken from the signature on the desk-top poem, the A is the WIZARD-form of Z, the signature on the second Riverside letter.

The absence of the stamp may be another implied message: "Zero stamp". The letter-quantities of S, A, and P add up to 36. The MT is zero. STAMP spells 360, the number of degrees in a circle. The "zero" of the implied message is another circle. Two circles, OO, is the Morse letter I.

7. Z. threatened repeatedly to attack a school bus. BUS is the mirror-image of SUB. School buses are yellow, so are submarines (implied Beatles-quote). Z.'s 9-o'clock pointer is aimed straight at Mare Island Naval Shipyard, a submarine base. Z. wrote that he had been "swamped out" a while back. USS Guitarro, a nuclear sub under construction at MINSY, had indeed been swamped at dockside by work-crews just prior to the Zodiac period.

b6
b7C

SUB plus MI. One manipulation: V for U. SVBMI.

In the Dragon Card, Z. said that when he blew up the school bus, he was going to have a BLAST. That can be read, "B last".

S V M T B
[REDACTED]

The contemplated attack included "picking off the kiddies one by one as they come bouncing out the door". "Bouncing out the door": Polaris missiles are launched from their tubes by compressed air; the tubes themselves are capped by doors. The central reentry vehicle of the Polaris warhead is called a "bus", since it drops off each of its three ~~xx~~ bombs like a bus discharging passengers, one by one. And I don't think incidentally, the very first Polaris submarine, and the boat from which the first Polaris missile was test-launched from underwater, was USS George Washington. And also not incidentally, Polaris is the Pole Star. The theme of the Pole comes up over and over again.

The exact phraseology of the swamping-statement was that Z. had been "swamped out" "by the rains". The word "by" is generally a tip-off that something in the immediate ~~xixix~~ vicinity is written in WIZARD (cf. heading BY ----- on Riverside letter I).

R A I N S
I Z R M H

Cancellations: I-R. Remainder: Z. MH.

"Swamped out", with a D-W cancellation, reads: STAMP. O. UE. STAMP, as in 6 (above) can be read as O. OO is Morse I. UE appears repeatedly, sometimes in its WIZARD-form, VF.

8. Z. sent a purchased greeting-card with a fountain-pen theme. Another purchased card had a dragon theme.

PEN plus DRAGON: Pendragon, King Arthur's family name.

I believe that "Arthur" is the intended clue. The dispersal of the two parts of this clue over time is a typical Z.-trait. I think that "Homicide Detail", "RH", and "Z/A" is another example of this dispersal of information.

9. In a letter postmarked in Pleasanton on 15 March 1971, Z. responded to Avery's revelation of the connection between Zodiac and Riverside. The letter was mailed to the LA Times, which had received no prior communications from Z. and never got one at any time thereafter. Taking a cue from Z.'s apparent preoccupation with geographical references, it appears that the LA connection is that it is 400 miles south of the Bay Area. PLEASANTON is an anagram for N POLE SANTA. The theme of the Pole appears here once again. The word "red" appears repeatedly in Z.-documents, both in clear and in code, and Santa Claus wears a red suit. He is also overweight, as Z. was described to be. He also says HO HO HO. Why south? The only way you can go from the North Pole is south. And the Pole is where the distance between lines of longitude is reduced to zero. Zero is another running theme.

10. The Halloween Card was addressed to "Paul Averly". This is probably another instance of a "found material". With a V-E cancellation, it reads:

A R L Y
Z I O B

Z. I (ego). O (zero). B.

11. Z. quoted repeatedly from The Mikado. The 9-o'clock pointer (I) is aimed at Mare Island. He set a "magnetic indicator" on Mt. Diablo. He suggested that it was necessary to go "4 inches" along the radian. "4" is the reduced form of "13" (casting out nines), and 13 is M in the alphabet. I believe that this clue refers to a body of water called the Minch, which lies between the Scottish mainland and the Isle of Lewis (as in Carroll) in the Outer Hebrides (OH). Every one of these clues contains the sequence MI. The letter Z in Morse Code is 1100. MI is 11 00. Without the pause, MI is Z.

12. "Cut, clean, if red! clean" (Riverside poem). Taking "clean" as a doublet generating the number 2, it's an anagram, with an F-U cancellation, reading DANTE CIRCLE 2. I and R should also cancel out, but I suspect that there is an overriding imperative to preserve the word CIRCLE because of its thematic importance. (When one writes ~~xx~~ solely for one's own private consumption, it is fair to bend the rules.) The Second Circle is where the souls of the damned are buffeted about by mighty winds. Two circles, 00, is the letter I.

13. Z. wrote that he never left fingerprints because he always put "2 ~~as~~ coats of airplane cement" on his fingertips. One coat should have been enough. I believe that "coat" was pluralized for the sake of the letter S. COATS is an anagram for SACTO, a regional abbreviation for "Sacramento". SAC and "airplane" are further clues. There is a SAC base near Sacramento, Mather AFB. [] anagrammatizes as [] or []

b6
b7C

14. In the August 1969 cryptogram, Z. said that killing people is "better than getting your rocks off with a girl." This was taken as a symptom of sexual psychopathology -- which can't be dismissed out of hand. But the interpretation of his phraseology is enriched by the knowledge that Z. is fond of 5-30 West Longitude. That line passes through the Rock of Gibraltar.

ROCKS OFF GIRL BETTER
ROCK OF GIBRALTAR

Cancelling out all pairs of like letters between the two phrases, I get the remainder: SF T EE AA. The doublets generate two 2's.

SF 22 TEA. TEA (1001) is 9. SF 22 9.

The sequence "229" has a number of interesting cross-connections.

Taking 9 as I, it reads 22I, the European writing for 22 January. Four radians is 229-plus degrees. In Binary-Morse, 229 is 11100101, OIK, Zero-IK. 2-29 is the birthday of Gilbert's apprentice pirate, Frederic (Pirates of Penzance). Penzance, incidentally, is the zero-point for mean sea level in British cartography -- it's the Cornish equivalent of Mt. Diablo. 2x29 is 58: Z.'s map-scheme includes two 58-degree ("radian") angles. 2, 2, and 9 add up to 13, a running theme. 2:29 is the clock face position of the Putah Creek site where the magnetic-north line from Mt. Diablo crosses Z.'s 26-mile circle. If he were going to conceal a 9th victim anywhere, it seems like a logical candidate. The city of Seville is near the crossing-point of 38 North and 5-30 West. The Barber of Seville was composed by Rossini, who was born on 2-29 and died on Friday the 13th (that may be completely irrelevant, but I couldn't resist throwing it in). Finally, the sequence is firmly tied to a Zodiac artifact: .22-caliber, 9-mm.

15. The second Riverside letter read in full:

BATES HAD TO DIE. THERE WILL BE MORE.

In the first letter, Z. named his victim as "Miss Bates". The transition from extreme formality to extreme informality is striking. The first sentence is 13 letters, the second 15. 13: M. 15: O. MO. The first three words are 5, 3, and 2 letters respectively.

The sequence 5-3-2 is another running theme. In the figures taken from the White Rabbit, the number of strokes in each figure repeats the 5-3-2. Z. invariably spelled "paradise" with C: PARADICE. DICE in Binary-Morse (1000010100) is 532. As will be discussed below, the Riverside poem contains the sequence 5132, which can be read as 5-13-2. In alphabetic quantities, it corresponds to EMB. The 3 of 532 could be expressed as binary 11, corresponding to M in Morse. The connection between the two is reinforced by the cryptic phrase, "Melvin Eats Bluber".

16. "ME 37" appeared on the 29 January 1974 letter. It was taken as a claim of (dead) victims. I believe that, like everything else containing the sequence ME, it's a disguised self-description. ME is 110, Binary-Morse 6. Read as a rebus, "6 before 37" is 31, which is in the right range to be a statement of age. 31 in binary is 11111, the Morse numeral zero. With a pause between characters 2 and 3, it's 11 111, MO. And if the 6 is added to the 37, it's 43, the year of birth for someone whose age in 1974 was 31. I believe that this clue was withheld until the appropriate date came around.

17. Z. wished Melvin Belli MERY XXXX XMASS. ME RY (18 plus 25) is ME 43. X MASS could be read as "X marks the spot: Mass." A Christmas clue alludes to the North Pole (Santa) again, and the spelling "Christmass", also from Z., could be an expression of both his megalomania and location (Christ is in Massachusetts).

18. "FK. I am crackproof." (Hole Card) The letters F and K appear at the end of the words "crack" and "proof". They also resemble the first two groups of pen-stroke figures. The third, V, appears in the group KFV, which is used in that same sequence as cipher-characters in the 340-character cipher. KFV and variations on it appear with some frequency in examples to be discussed below. I believe that it is another expression of the "familial triad", another form of which is EMB, KQP, etc.

In other connections (see below), there is an apparently archetypal connection between the members of the WIZARD-pair J and Q, which associate readily with the playing-cards, Jack and Queen. FK may be JFK -- in which the Jack has become invisible or vanished. I will speculate elsewhere about quotations from Doctor Strangelove. This may be another one. In the original version of the film, which was scheduled for release at Christmas time, 1963, the recall-code was JFK. After the assassination in Dallas in late November, release was held up while the sequences involving that code were reshot. It was changed to OPE for reasons of good taste. I have not been able as yet to lay my hands on the screenplay, but it is possible that the recall-code is referred to in the script as "crackproof". If it is, then this is a solid quote from Strangelove (SL is WIZARD for HO).

~~21. The second Riverside letter read in full:~~

~~BATES HAD TO DIE. THERE WILL BE MORE.~~

~~First sentence: 13 letters. Second sentence: 15 letters.~~

~~13: M. 15: O. []~~

~~MD = 11 111 = 1111 = zero~~

~~Note also that the first three words are comprised of 5, 3, and 2 letters respectively. The pen-stroke groups taken from the White Rabbit are comprised of 5, 3, and 2 strokes, respectively.~~

~~Z. invariably spelled "paradise" with C: PARADICE. It may be coincidence, but DICE in Binary-Morse is 532.~~

b6
b7C

~~The Death Clock~~

- ~~19. DEATH in Binary-Morse is 10000110000: 1072. Given Z.'s other demonstrated translations of words to numbers and his love for clockfaces (put an M at the end of the minute hand and an H at the end of the hour hand, and reading the dial as 0, you get an monogram: [] I conducted an Einsteinian "thought-experiment".~~

Throughout history, the two concepts, Death and Time, have always gone hand-in-hand. Z.'s Bay Area activity culminated in the construction of a gigantic clockface reading 8:38, 38 being TIME. What about the Riverside murder? He left a Timex at the scene. It would be out of character for him not to leave a mathematical message.

1072, to be expressed as clock time, has to be transposed to 11:12. For the sake of precision, 11:12:32.72727. . . (an infinite series of 27's follows). Why? To make the angle between the minute and hour hands exactly 99 degrees. Because 99 is a multiple of 9.

The Death Clock has several amazing properties. When I noticed them, I felt as if I had discovered The Golden Section. I don't see how Z. could have missed them.

The reflex angle is 261 degrees, also evenly divisible by 9. The two angles express a ratio of 11 to 29. Zodiac's first Riverside letter was postmarked 11-29. Coincidence?

The hour hand of the Death Clock is just about 23-3/4 degrees away from the 12-o'clock position. The North Pole is 23-1/3 degrees out of perpendicular to the plane of the ecliptic. In other words, the Death Clock is not a bad picture of Planet Earth.

NB: THE POSTMARK ON THE 240-CHARACTER CIPHER WAS 11-12.

20. The August 1969 cryptogram contains, besides the 18-letter anagram EBEORIETEMETHHIPTI, the mystery words FORREST, DADGERTUE, SMITHMOIN, ATHAE, and SLOI.

FORREST, ATHAE, and SLOI appear to represent Morse sequences. With 0 for consonants, 1 for vowels, FORREST spells 0100100, which corresponds to the form of the word RED ("Red with Rage", "Red Phantom", "Cut, clean, if red! clean", "dress. . .red"). ATHAE could be 01100 or 10011. I suggest reading it with both polarities because the results appear to be the same. 0110 0, PE, has the letter-quantity of 19 (E as 3), and 10011 is also 19. Z. seems to like things that work out the same two or more ways. 19 plus 19 is 38, a known quantity. SLOI, with 1 for consonant, 0 for vowel, is Z. DADGERTUE and SMITHMOIN may be Morse, too. Suggestions solicited.

The choice of letters for ATHAE and SLOI is also of interest. ATHAE can be analyzed as HA plus TEA. H(8) and A(1) is I(9). TEA (B-M 1001) is the number 9. It may be an egomaniacal equation, "I equals TEA/9/I". SLOI in WIZARD is possibly an anagram for 0. LHR. Z. appears to like two-and three-letter conventions, including airport codes. LHR is Heathrow Airport, London, on the Prime Meridian. It could be read as "Zero. London."

21. FK in WIZARD is UP. Note the occurrence of UP to ID in two places in the first Riverside letter: "Miss Bates was stupid. . . she did not put up a struggle, but I did". ID (identity) seems to be one of the subjects which can be combined with a cryptic predicate to form a Z.-phrase. Here, it appears to be ID UP. Another case is ID CO. Zodiac told the couple at Lake Berryessa that he was from Colorado (postal code CO). Under WIZARD-rules, the word ZODIAC analyzes as ID CO (Z-A cancellation). CO as a number (C is 100, O is 0) is 1000, the Morse letter B.

22. In the "Citizen" letter, Z. complained about a "blurb" that read: "in 1957, other people were killing time. Kit and Holly were killing people." (NB: "murdering time" was the cause of the Mad Hatter being sentenced to a perpetual 6 o'clock.) There were no misspellings, no bizarre syntax. The words "blurb" and "people" do not appear in close proximity, but as an educated guess, the purpose was to sneak them in. They anagrammatize as BURPLE, OPE, BL2, and 222.

These words appeared in the letter describing the events following the Stine murder: "fiygue" (for "figure"), "the cops peeled rubber", "blue pigs", "noze rubed". FIY in WIZARD is URB, the remainder, GUE, occurs frequently, e.g., in the 340-character cipher. "Figure" is fixed ~~x~~ in the phrase, "father figure". I believe that "fiygue" is formed from the words BURPLE and []

b6
b7c

In Doctor Strangelove, the fatal flight was launched from a fictitious SAC base, Burpleson AFB. I read Z.'s "pelican" symbol as saying, "I am at the center", where 53 is I, a quotation from the periodic table. OH in chemistry is the hydroxyl group, which is a component of all bases. By reference to hydroxyl, Z. can truthfully say that he is a base. In the specific case of Burpleson, the base's father must be called "Purple", or BUR for short.

RUBBER contains ~~mathew~~ both BUR and BER. BLUE (pigs) plus Z.'s return address, RP, spells BURPLE. RP fits precisely into the SAC context. NOZE RUB is Z. BURPLESON less PLS. PLS in WIZARD is KOH, a powerful base. Together with OPE, it spells PELOPS (a mythic allusion?). BL2 is B-52. 222 could be read as 2-22, George Washington's birthday, or as the sum, 6, Binary-Morse for ME (110).

23. Z. wrote a number of what appeared to be box-scores, in which the phrase SFPD 0 always occurred. By letter-quantity, SFPD adds up to 45. With the zero-suffix, it's 450, binary 111000010. The OH (111 0000) is clear enough. 10 is probably TE, 23, the inclination in degrees of the Poles out of perpendicular to the Ecliptic. The letter W, used by Z. in the Riverside letter as dash [] is the 23rd letter of the alphabet.

24. Z. identified himself in the letter of 10-12-69 as the murderer of the taxi driver "over by" Washington and Maple. Taking "by" as a WIZARD-cue, OVER can be read as LEVI. Levi, as in Leviticus, is the tribe of priests in Biblical Israel.

b6
b7C

25. The angles that Z. calls "radian" are in fact 58-degree angles. I suspect that 58 is another way of saying [] which is written in Morse with 5 dashes and 8 dots. What is to be found "4 inches along the radian" is the intersection in The Minch between 5-30 West Longitude and 58 degrees North Latitude. The bodies of water lying on 5-30 West are The Minch, North Channel, the Irish Sea. I see Z. as anthropomorphizing the map in an egocentric fashion. In this case, MI from Minch, CHA from Channel, and LE from Land's End spell MICHAEL. Taking 58 as [] the intersection of those two lines in The Minch is a concealed form of the name []. The same thing can be read out of Mare Island Channel and Land's End, San Francisco, which are joined together in Z.'s geometric scheme by two radian (actually 58-degree) angles.

26. In the first Riverside letter, Z. said that the knife "broke". It didn't. Elsewhere, he used the dialect form "boughten" in one sentence, then "bought" shortly thereafter. He used the word "game" in two different contexts to express non-standard conceptions. "Mery" has already been read as ME 43. There is another possible explanation

for these and other formulations.

ME this, ME that, seems to be a typical formula. It analogizes "Me Tarzan, you Jane". It may not be just analogy. Consultation of an Apetalk wordlist compiled from the works of Edgar Rice Burroughs shows that these words could be taken from Tarzan. BROKE: BER KO -- KO is "mighty". BOUGHTEN: BEN OUGHT -- "great zero". GAME: ME GA -- GA is "red". MERY: RY is "crooked".

27. Addendum to the TREASURE MAPS. I feel that the geographic references analyzed in that section are solid. But it is quite probable that they do not mean that a weapon is stashed at one of those locations. Another interpretation is the general tendency to anthropomorphize geography: BM 00 on Liberty Island can be read as BM I (00 is Morse for I), Benchmark Ego, I am BM, etc. Glide Ranch is covered with Zodiac themes: Section 9, Sacramento-Northern RR (SN), Road 106 (10/6, price of Mad Hatter's hat), Road 38, etc. I still think that a metal-detector sweep of the creekbed at Glide Ranch and of the irrigation ditch at BM 00 is called for.

g-
0110 0: PE?
100 11: DM?

Divisions are conjectural, but Z.'s telephonic report of a " . . . murder -- no, a Double Murder. . ." and his subsequent Death Machine diagram would argue in favor of DM. His pre-occupation with lines of longitude would argue in favor of P(OL)E, OL being a 27-sum pair. 10011 is 19. P is 16, and Z. consistently uses E for 3. PE is 19, too. Their sum is 38.

26. The 13-character "cipher"

A E N ♦ X K X M X J N A M

Z. claimed that this "cipher" contained his name. It does. First name, middle initial, family name. It's also a lesson in mathematics.

a. The 4 circular characters are crossed, one vertically and horizontally, the other 3 diagonally. This corresponds to the one large eye, 3 smaller eyes on the Halloween Card, and to the distribution of signatures on the second Riverside letter: one was unsigned, three signed (Z). The singleton in each case is 10, the other three are ones. It's just another illustration of casting out nines.

b. The 10th character is unique. It is neither a traditional letter nor a circle. It is an umbrella. The White Rabbit carries both a watch and an umbrella. The Baker in Snark loses both his watch and umbrella. The watch is the Riverside Timex, and this is the umbrella. In any case, this unique figure marks the end of a series of 10 characters. 10 and 3. The Hold Card has one row of 10 holes followed by a row of 3. 10 and 3 expressed as 1 and 3: casting out nines. The zero in 10 stands for 9. 9 is zero.

c. 10 and 3 is M. 1 and 3 is 1000, the Morse letter B. B is, furthermore, formed from the numerals 1 and 3. The whole point of casting out nines in Z.-documents seems to be that B and M are equal. And in many problems involving sums of letter-quantities, results consistent with known Z.-artifacts are obtained by assigning a quantity of 13 to B. BM, it appears, is 26: Z. (1 and 3 is also IV: ivy).

d. [] 222. 222 is George Washington's birthday. And by the same process as shown in the instance of the Lake Tahoe Card, A(1) and N(14) add up to O(15). 0 is an eye. Zero stands for 9, which is the letter I. It works either way: [] []

b6
b7C

d. 0000, as a set of zeroes, is the B-M letter H.

f. As in the 340-character cipher, characters fall into two types: block and circle. It's a binary code, namely Morse. One complication has been introduced, however. After the 7th character, polarity is reversed. A previously-discussed case is that of the Halloween Card map symbols: one turns counterclockwise, the other clockwise. The same is true here: left side goes one way, right the other. Symmetry may be a contributing factor, but it also appears to have been necessary to obtain 4 zero-characters for the illustration of casting out nines. On the left, blocks are dashes; on the right, zeroes.

A E N ♫ X K X M X ↴ N A M
1 1 1 0 0 1 0 0 1 0 0 0 0 0



The choice of letter-sequence appears to be mathematically dictated. 1110010010000 is 7312, which by casting out nines reduces to 13. In addition, to use the name [] in B-M as a number, the only letter with which it can begin is 0, as that is the only one in the group that does not start with zero.

b6
b7C

g. The full text: []

h. There is possibly another, more esoteric, layer to the choice of the letters MAN for the doublets (a form of emphasis). Latin homo as in ecce homo. HOMO, analyzed as a Z.-puzzle, reads []

27. "KF. I am crackproof." Stranger? Sick?

This formulation was expressed in exactly the same (hitherto unnoticed) manner in the opening of the Riverside poem:

Sick of living, unwilling to die. . . .

Crackproof

KF is WIZARD for PU, which appeared in the Riverside letter in clear:

"Miss Bates was stupid. . . she did not put up a struggle, but I did"

The victim, in fact, fought for her life energetically, as the condition of the ground showed. Note also the close proximity of UP to ID both in "stupid" and "put up. . . I did".

~~ID in WIZARD is WR, as in White Rabbit. I suspect that as ID, it has its commonly-accepted meaning of "Identifier". Another way of saying [redacted]~~

~~I will hazard a conjecture as to the origin of UP. I believe that it is the predicate of AM UP, itself formed from AUPM, "golden afternoon". See the dedicatory verses to Alice, which begin:~~

~~All in the golden afternoon
Full leisurely we glide. . . .~~

28. "RUSH TO EDITORS"

This phrase was written in large letters on one of Z.'s mail covers. By the usual method of number-generation, it reduces to RUSHTOEDI 2222 (8). Cancellations: R-I, S-H.

UTOED 8
FGLVW 8

VF. GW. L8.

VF occurs four times in clear in the 340-character "cipher", more than any other combination. GW occurs once. L8 is the "radian" angle, 58. It appears to stand for the name "O'Hare" (5 dashes, 8 dots in Morse). GW is George Washington, the "father of his country". By letter-quantity, GW is 30.
VF30 is [redacted] in WIZARD.

b6
b7C

V3FMT: VF30. VF. GW. 58. [redacted]

29. "I am mildly cerous. . . ."

MILDLY CEROUS: MI. OUS. DRY CELL.

Riverside letter: ". . . now she is battered and dead. . . by then, her battery must have been dead. . ." Cheri Jo Bates was hacked to death with a knife, not bludgeoned. Z.'s disconnection of her ignition system would not have drained the battery, and he knew it. He wanted to inject the letters BATER into the text.

MI is Z. DRY CELL is BATTERY. "Z, [redacted]

~~30. "ME 37"~~

~~ME (110) is 6. As with "4 TEEN", it's a rebus. 6 before 37 is 31. Z. was 31 on the 29th of January 1974.~~

The August 1969 cryptogram

Until recently, I had considered the cryptanalysis published in the newspapers to be definitive. But because I had since learned from working with the November 1969 (Morse Code) message that the form of these secret messages is, if anything, even more informative than the text -- which appears to be filler -- I took a careful look at the original text and compared it with the published solution.

The solution was a monumental task and produced the English sense of what Zodiac had to say. But the English sense is just window-dressing. Moreover, improvements were made in order to bring what appeared to be a garbled text into conformity with standard English. This resulted in just another instance of the St. Ives principle so common to Z.-puzzles: point in the opposite direction.

I will concentrate here on three aspects of the cryptogram: the outward form, the choice of cipher-symbols, and the implied text. Frequently, Z.'s omissions are more significant than actual statements. Here, he uses omissions to bracket significant phrases.

The cryptogram is 24 lines of 17 characters each. The November (Morse) message is also made up of 17-character lines. Clearly, 17 has a significance. By alphanumeric quantity, 17 is the letter Q. Backward Q (for convenience, -Q) is the most frequently-used cipher symbol. Cryptanalysts always concentrate on the most frequently used letter in clear text as the key to analysis. Z. de-emphasized that letter, E, by representing it in cipher with a veritable smorgasbord of cipher-symbols. This distracted attention from Q and the number 17, which stands for it.

-Q stands for M, which is represented by no other symbol. In Morse, Q is 1101. Read in reverse, it's 1011: Y. Y is the initial of YVI (BER). Q is the WIZARD-partner of J. As an archetype, J & Q are Jack and Queen. As will become clear below, the combination of J & Q is Z. The equivalence of -Q and M in cipher is another way of stating the identity, the oneness, of mother and son, [redacted]

b6
b7C

Z. uses in clear text only 23 letters of the alphabet. 23 is a recurring theme: the inclination of the Poles and Z.'s age at the time of the Riverside murder. The letters omitted are J, Q & Z. Z. wrote about killing being a "thrilling experience" to get in the sequence TE (23, IM TE from TIME) and the letter X, which would otherwise have been unrepresented. J & Q, furthermore, are paired together to stand for the letter F in clear. Other familiar Z.-patterns show up in his choice of symbols (see below). The other archetypal pair that bears on the familial triad is K & P, King and Prince. The mystery word rendered as ERYETHEYO in the published solution is represented in cipher by this sequence of symbols:

August 1969 cryptogram (2)

Z K -Q P I. . . .

Note that the triad KQP is bracketed by Z and I. The bracket is a familiar Zodiac device used to enclose a statement within a declaration of (concealed) identity (e.g., "I am Stalking Your Girls Now"). Neither Z nor I is a consistently-used cipher-symbol in this text. As will be discussed below, these inconsistently-used symbols are themselves used to bracket significant sequences. But since the emphasis at the time was to produce an English text, these subtleties were not noticed and the inconsistencies passed off as a sign of craziness. Quite the contrary is true.

Z. wrote that it would be "messy" if the police tried to bluff him ("bluff" is B-52, a SAC reference). Any word beginning with "me-" is almost invariably a concealed self-description. It reads: ME SSY. The alphanumeric quantities of SSY are 63. When Z. wrote in the fountain-pen card that he might do "MY THING", he emphasized -- apparently -- with six exclamation points. !!!!!: 63. The mystery word ATHAE in this cryptogram spells PE in Morse (vowels are dots, consonants dashes):

A	T	H	A	E
0	1	1	0	0

0110: P; 0: E

I had several theories to explain PE, which is as ambiguous as the recall-code in Doctor Strangelove, OPE. Z. probably included all of my hypotheses by reference (Planet Earth, P-OL-E, etc.), but I believe that I have finally found the key while idly leafing through a child's atlas. Z.'s anthropomorphization of geography probably came from the same process, so it's a valuable exercise. At all events, PE is almost certainly Prince Edward Island in the Maritime Provinces of Canada. PEI is made up of only three counties: Kings, Queens, and Prince. Queens, in the center of the island, is bisected by the 63rd Meridian. KQP again. PE is 63, and 63 is conveniently a 9-multiple.

The emphasis in solving the cryptogram was to make English out of it, and violence was done to the patterns which were developed by the cryptanalyst himself. A re-examination of the consistent symbol-assignments shows that the published text requires some rewriting. Of the five mystery words, FORREST, ATHAE, and SLOI survive re-examination. HONGERTUE AND ERYETHEYO do not. (FORREST is Morse for RED, ATHAE is PE, SLOI is Z).

63: BM'S AGG WHEN
THESE PHRASES WERE
WRITTEN

August 1969 cryptogram (3)

Symbols 1 & 3 in "HONGERTUE" invariably represent D elsewhere. Symbol 2 invariably stands for A. The word, both from appearance and from context, obviously began as "dangerous". The analysis assumed that H would have to precede the group GE to produce an English word. Unfortunately, it's not English, but Zodiacee. Z. substituted D for N, T for O, and E for S. The "H" apparently was assumed to have resulted from a graphic similarity between lower case H and N, given mental confusion and sloppy handwriting on the part of the author. It's highly ironic, if not telepathic, that the cryptanalyst came up with Z.'s initials. In any case, the word is DADGERTUE.

The letters substituted into "dangerous" are DTE, which read in Binary-Morse spell TIN/18. The letters substituted for spell SON. "Dangereson" now includes the word DAD. GE (110 0) is another spelling for Z (1100). RT is from [] UE from [] DTE: 10010; I 001 0: TUE. DTE: TUE: TIN -- all 16. The transformational possibilities of Morse Code and binary numbers ix are dazzling.

ERYETHEYO is really SMITHMEMOIN, an anagram for a number of familiar Zodiac themes: TIME. MOH. I. SN. Note that the text is bracketed by S & N (cf. "I am Stalking Your Girls Now"). SN, besides being WIZARD for [], is the chemical symbol for tin. I had guessed before that the choice of YG for inclusion in the S-N brackets quoted above from the first Riverside letter was motivated by its similarity, in WIZARD, to [] (YG: BT). While that is a contributing factor, I now have an explanation for that particular choice.

Zodiac, with his Kabbalistic preoccupation with alphanumerical transformations, has subjected his own name to this permutation:

MNOPQRSTUWXYZABCDEFG. . . .
IJKLNMOPQRSTUVWXYZABC. . . .
KLMNOPQRSTUVWXYZABCDE. . . .
EFGHIJKLMNOPQRSTUVWXYZ. . . .

GCEY is just one of 25 permutations of the name []. The psycho-grammatical sentence, ME IK from [] corresponds in this form to GY CE. GY in WIZARD gives the [] fragment BT, which makes it pleasing. CE is i& 103 (cf. Riverside murder at 10:30 on 10-30), and it spells Z MT in Binary-Morse (1100111). As noted elsewhere, MIKE Z MT is another spelling for MIKADO. "I am Stalking Your Girls Now" is a cryptic way of saying S-ME-N, []

b6
b7C

August 1969 cryptogram (4)

The whole message is seven sentences long. Letter-count: 38, 61, 48, 46, 89, 88, 18. As Binary-Morse combinations, they spell TIME, TEBT (?), MH, YN (?), YU (?), YS (?), and TIN. TIME and TIN are old friends. The other readings are conjectural, but there are certain handholds. TE is 23 and the predicate of IM TE; BT is WIZARD for GY (see above). MH (SN) is [REDACTED]. Given a closed field, Z. is limited, having constructed numbers that spell out a few favorite themes, in the forms produced from the remainder. Nonetheless, he has produced groups each of which begins with 1011... (Y), the initial of YVI (BER).

The division of the text into three parts corresponds, I believe, to the triadic theme of father-mother-son. It is, furthermore, another concealed message. Each part is 8 lines long. The number 8 is a frequent signature (H, MTI -- "empty eye"). 8x17 is 136: 10001100: 1000 11 00: BMI. Benchmark I, I am BM. Curiously, it corresponds exactly to [REDACTED] ZIP-Code: 02139 (B: 02; M: 13; I: 9). Z. used a sticker on at least one mail cover reading "Always Use the Correct ZIP Code". ZIP in WIZARD is ARK. A tin ark is SN-ARK. And MO-sea was found in an ark.

YN, YU, YS: without the initial, Y, SUN. The cryptogram was accompanied by a letter in which Z. said he would "cruse" for victims from "Fry" until "Sun". F is 6, binary 110, Morse ME. FRY: ME RY (cf. his Christmas greeting to Melvin Belli, MERY XMASS). RY is 43, XMASS is "X marks the spot: Massachusetts". [REDACTED] was born in [REDACTED] SUN is WIZARD for FMH. F, by the same process of transmutation as in FRY is ME. ME MH. In YN-YU-YS, the psychogrammatic sentence reads: ME MH & Y.

b6
b7C

I can't resist the urge to put in an excursus at this point on TIN plus ARK: SNARK. As 18, TIN is a 9-multiple. It's a particle from TINC, the home address of the [REDACTED] family [REDACTED], NJ. It has a direct bearing on Z.'s love for 5-30 West Longitude in Cornwall, since Cornwall was the source of the western world's tin during most of the historical period. As Sn, it's WIZARD for [REDACTED]. Its atomic number is 50, Five-Zero, whose mirror-image in Morse, 111100000, is 992, the "One Thousand diminished by Eight" used by the Butcher as a divisor in Hunting of the Snark. Z. wrote that his "killing tools" were "bought out of the state". It's not only a superfluous statement, it's peculiar English. What it is is an acrostic: BOOTS. Boots is the first character mentioned by name in Snark, and he is described as a "Maker of Bonnets and Hoods". Think of Lake Berryessa. The hooded Z. said he had come from Deer Lodge, MT. DL is WIZARD for WO. Combined with his mother's initials, BM, it spells WOMB (MT WOMB: Story of Ruth. "Where thou lodgest, there shall I also lodge." 22 East Longitude passes through Polish Ruthenia, separated from the mother country in 1945.)

August 1969 cryptogram (5)

The intersection of 22 East and 38 North in the Peloponessos as an allusion to the Pelops-Tantalus myth seems to be borne out by Z.'s statement that one of the tortures he envisioned for future victims was to feed them salt beef and then withhold water. The Cornwall-connection is substantiated in the literature by his statement that anyone who thought he was really going to blow up a school bus needed a "hole in the head". The Hole in the Head, Cornish Tol-pedn-Penwith, is a geological feature and major tourist attraction at Land's End, Cornwall. To conclude an excursus that is clearly getting out of hand, [] and W0(MB) are both bracketed within the person of JACK in JABBERWOCK. NB: the solution to the White Queen's Riddle is CARP, which is similarly bracketed by WATER in "The WALrus and the CARPENTER". But back to the text.

b6
b7C

Here is the complete text, using only substitutions that are proven by repeated use. E is a special case. By using a smorgasbord system of substitutions for that letter, Z. was supposed to have intended to make the solution more difficult. That may be so. But it also has the effect of devaluing [] and making -Q/M the most frequently-used combination, the unio mystica of mother and son. I have omitted E for the sake of caution, but it is probably fair to replace most or all E's where required by conventional spelling.

ILIK*KILLINGP#OPL	*B*CAUS*ITISS*MUC	HFUNITI*MOR*FUN#H
A*KILLINGWILDG*M*	INTH*FORR*STB*C*U	S*MANISTH*MO**DAD
G*RTU**NIMALG*ALL	TOKILLSOM*THINGGI	V*SMITHEMOINTHRIL
LING*XP*R***C***	*V*NBT*T*SRTH*NG*T	TINGYOURROCKSOFFW
I*H*GIRLTH*B*STPA	RT*FI*IATHAEWH**I	DI*IWILLB*R*BORN
NPAR*DIC**NDALLTH	*IHAV*KILL*DWILLB	*COM*MYSL*V*SIWIL
*NO*GIV*YOU MYNAM*	B*CAUS*YOUWILLTRY	T*SLOIDOWNOR*T*PM
YCOLL*C*INGO*SLAV	*SFORMY*FT*RLIF**	B*ORI*T*M*THHPITI

Other than E, there are only seven letters that have been omitted for reasons of nonconformity. I believe that these seven were selected for this treatment in order to imply another anagram in Z.'s messages, it is important always to see what has been left out. In this case, SN. FT. I. AO.

August 1969 cryptogram (6)

SN: TIN, [] I: first person singular nominative.
FT: a frequently-encountered paraphrase for 26 (Z), which passed
in one Z.-letter as an abbreviation for "feet". AO: Alpha and Omega.
I feel another excursus coming on, so I'd better indent.

Omega. Z. disabled CJB's car by removing the spark coil, the condensor, and disconnecting the distributor. All he needed to do was to loosen the distributor cap, or at most, to remove the rotor, an operation which would have taken ten seconds and not exposed him to discovery. The extensive work that he did was a hazard. In the Riverside Letter I, he supposed that by the time CJB came out of the library, her battery was dead. "Battery" is another way of sneaking in an anagram on [] and the B-Y WIZARD-pair, but it's also another stress on the concept embodied by the electrical system of the car. In that same letter, he wrote, "She did not put up a struggle. But I did." To put up a struggle when under attack is to offer resistance. She did not resist, but he did. Electrical resistance is measured in ohms. []. The ohm is symbolized by the Greek letter, omega, literally "Big O". Graphically, lower-case omega is the letter W, 23. I suspect that "omega" is also the source of the peculiar phrase, "but that will not stop the game" in the Riverside letter. The empty space before "game" is nothing, zero, 0. O-game: OMEGA.

b6
b7C

The Riverside letter opens: "She was young and beautiful. Now she is battered and dead. She was not the first, and she will not be the last." She was not the Alpha and the Omega. Implication: somebody else is. I mentioned elsewhere that 117 degrees West runs through Badwater in Death Valley. The DW of BADWATER is a WIZARD-pair, thus cancelling out. BADWATER is yet another way of spelling BFRTA.

The 340-character Morse message begins with the letters HER. The phrase, AROUND IN THE SNOW (Lake Tahoe card) anagrammatizes as 23. U (21) WATSON -- [] street address -- and ID HER, a psychogrammatical sentence reading, "my identity is her". HER plus AO is []

These groups appear bracketed by non-consistent cipher-characters: XP, MYSL, FUN, MO. . . DAD, INGO, NB, NG. XP is a traditional shorthand for Jesus Christ. I suspect that Z.'s affinity with Jesus is founded more in the glory than in the suffering. XP in Morse is 10010110, a mirror-image group. As a binary number, it's 150, CL (Lewis Carroll). Broken into smaller groups, it spells TITAN. MY is 38 (13&25), SL is WIZARD for HO. FUN in WIZARD is simply M (Z.: "Have fun!"). MO is [] DAD is his father. INGO is RMTL, Zero between right and left (O. Rex is at the cross-road, waiting for his father to come to his death?).

August 1969 cryptogram (7)

NB is the WIZARD NY (38). NG is MT, zero.

There are some groupings in the text itself that seem to be significant. I am reasonably certain that the DICE of PARADICE is the Binary-Morse 532, the familial triad, EMB (cf. "Melvin Katz Bluber"). PAR is WIZARD for KZI, which could be gibberish, but which could also be a psychogrammatic sentence in which KZ is the predicate of I. KZ is the German abbreviation for "Konzentrations-lager", concentration camp. "Be reborn" gives the group BEREB, WIZARD YVIVY -- connected in the clear text with the notion of birth. DADGERTUE contains DAD followed immediately by GER. Is GER short for "German"? It's tempting to see the same train of thought at work in "badger", Humpty Dumpty's translation for "slithy tove": bad Germans. I'll come back to "slithy" later. PASS LAKE TAHOE AREAS: PA-SS. 38 stands for the father (George Washington, whose birthplace is on the 38th parallel; the 3800 block of Washington Street in San Francisco, where Z. shot Paul Stine to death). SS is 19x2: 38. PA is KZ in WIZARD. SS is Schutzstaffel, the group in charge of the death camps, the worst of which were in Poland. The numbers 19 and 50 occur frequently in Zodiacs, and they have a number of (ambiguous) significances. It may be coincidental, but they also happen, taken together, to be the geographical coordinates of Auschwitz. [REDACTED] is a Polish Jew. It is not inconceivable that most or all of her relatives perished in the Holocaust. The connection gives rise at least to a fascinating speculation.

Z.'s choice of symbols for individual letters is also of some interest. A is represented by G and S. G&S is Gilbert and Sullivan. G&S is 26(Z), the WIZARD-correlative of A. C is E, as in GCEY, 103, MIKE Z MT/ MIKADO. D is one of those letters which represent a convergence of two or more systems. In Morse, it's 100. That's binary for 4, and D is the 4th letter of the alphabet. 4 is IV(Y), which may explain why D is represented by the Zodiac-symbol in this text. F is given by J&Q. H is given by M and crossed O (MOH). I, ego, is given by a triangle, P, U, and K. The combinations PU and PK are familiar. The triangle is probably the KQP/EMB triad. P is given by upside-down X (P and K as WIZARD-pair). S is F & K, WIZARD for UP ("FK. I am crackproof.") T is H, I, and L. I suspect that L is WIZARD for O, which is MT. MT, in turn, is NG in WIZRD. Thus, HIL could be a concealed form of HING, the sequence that transforms WATSON [REDACTED] street address) into WASHINGTON. There are other possibilities. Z. uses, for instance, two symbols for L. They alternate irregularly, giving the appearance of a Morse message.

b6
b7C

August 1969 Cryptogram (8)

Z. used dots in the November 1969 Morse message to spell out TIME ("sentence" groupings: 144114). He seems to have done the same thing in this message with syntactic breaks. Assigned a value of 1 for an unbroken line, 0 for a line in which the sentence ends, the 24-line sequence reads:

1101 1101 1011 0111 1011 1101
Q Q Y J Y Q

These three letters correspond to the 1-and-3 pattern used by Z. to illustrate casting out nines (Riverside Letter II: one unsigned, three signed; 13-character "cipher": one zero crossed horizontally and vertically, three diagonally; one huge eye, three smaller ones on the Halloween Card). The only other permutation, 1110, doesn't exist in Morse Code. Reversing polarity, this pattern is represented in V (0001), F (0010), L (0100) and B (1000). VF is a shorthand for [] and occurs with great frequency. Z. uses "B" as a cipher-symbol for L in this text. B is "Berta", L is 50, Five-Zero, Sn, TIN, 992, Vsuperimposed-on-0 clockface.

b6
b7C

The last 18 characters read: EBORIETEMETHHPITI. By the usual process of number-generation and anagrammatization, it seems to read: MT HOREB over 2PI equals 532. MT over 2PI is the radian angle (58), standing for OHARE (5 dashes, 8 dots). 532 is DICE (1000010100), as in PARADICE and "suicide" (US DICE), not to mention ID CE (103). HOREB, furthermore, is []. In WIZARD, HOREB is SLIVY, a near-miss to "slithy" (Mare Island Naval Shipyard is MINSY, as in BOROGOVES). Moses, so-called because he was ~~fun~~ taken from the water, was in an ARK (ZIP) among the flags. The first miracle he witnessed was at MT HOREB, where he heard GOD, I AM THAT I AM (GW. IDAHO. MT. 22). The second miracle was that of the ROD. ORD: [] the city that is half-Polish. ME ORD. MO RED. ME ROD. I said he was found among the flags. The flag of Brazil is a picture of the Zodiac. On the Zodiaseal band is the national motto, ORDEM E PROGRESSO. ORDEM: ME ORD, ME ROD, MO RED. The first Snark missile test-fired from Cape Canaveral in 1956 vanished. Where? In the jungles of Brazil, Zero Latitude.

xxx

QQY	J	YQ
110	(BREAK)	01
ME		ET
		3 20

① HER>PLVPKIθLTGθB
00100100001110010
E R A H O U E

PK, TG
I SANS SERIF TO
AVOID CONFUSION
WITH I(H)

② Nq+BΦD0D DWY · <DKFθ
001011110000101001
I K M B R E

DW, KF

③ BYΞM+UZGWΦθLΦHJ
0001010000111100
B K E E U 9

BY, GW
NOTE TAIL ON U
TO AVOID CON-
FUSION WITH C

④ S99ΔΛVΔNvθq0++RKθ
00010111010111101
H F O R M Q

⑤ □ΔM+Φ2TΦ1θFP+PθK /
1101100010010101
ME Z A T I N C

D2T = DDT
"I AM INSECTI-
CIDE"

⑥ 9ΔRAΛF10-ΔΔCKF>θDΦ
01100111101000101
Z 9 B Y

YF, KFV (WHITE
RABBIT DETAIL)
[K IS WRITTEN
OVER CORRECTION
OF]

⑦ □O+KΦΞE0NcXGV · ΦL I
110010101100111
M I K E Z MT

KQ, Ξ (HE?)
CX, Q = Y?
(Q1101, Y1011)

⑧ ΦGθJΦ2□O+□NYΦ+ΦLΔ
10100011110011111
K E I M Z Φ

NY (101011 = 43)
"MIKE Z MT" =
"MIKADO" IN MORSE

⑨ Δ<M+8+ZRθFBCKAθθK
000101011100100110
H R TE Z MI N W

Z + B + M
Y = Q?
(Q1101, Y1011)

⑩ -ΦLUV+ΛJ+09Δ<FBY -
110010011010100001
A Z T I M E B R

BY, LUV
(MARC NORMAN'S
SPELLING OF
"LOVE")
AZ, VF

- ⑪ 4+R/θLEIDYB9&TMKO ID, TM, YB
 $\frac{0111100}{M Z B I V}$
- ⑫ Θ<JIRJ|NOTEM·+PBF LC (LEWIS CARROLL
 $\frac{101110111010}{Y Y K E B}$
 = 150, 10010110
 (XP, TITAN)
- ⑬ φΩΔSYΦ+NΙΘFBΦΞΔR MTI = 8, A
 $\frac{11100110110011011}{M T I M E Z M E M}$
 FREQUENT Z -
 SIGNATURE
 ("EMPTY EYE")
- ⑭ JGFNVΛΦΟΘΦΒ·ΦVOLT++ VF
 $\frac{1000001110101011}{B I M T E K E M}$
- ⑮ YBXΦΞΩΔCE>VUZO-+ BY, EV
 $\frac{00011011100000111}{I E G O 5 \emptyset}$
- ⑯ IC·ΦΦΒΚΦΦΛ·ΦΜΡGO MQG (FAMILY
 $\frac{111001100}{Z M I H}$
 TRIAD : M-IKE,
 Q-QUEEN, G-
 GEORGE [WASHINGTON-
 TON?]
- ⑰ RJTTLΦΘCK<+FJWBΙΘL SH
 $\frac{110111101010100111}{M T E \emptyset E K I T}$
- ⑱ ++ΘWCΦWΦPOSHT/ΦΘΦ SH
 $\frac{1110110101010001110}{\emptyset P K E U G}$
- ⑲ IFKDW<ΔΙΒΔΥΟΒΦ-CJ FK, DW
 $\frac{1000001001010101111}{B E R A R T O}$
- ⑳ >MDHNΦKΦ-ZΦΔAI-KΕ+ PK, ΖΟ[D]AIK
 $\frac{00000000101101001}{H I U P T E A (9) (I)}$
 (DELTA FOR D)

MORE ADDENDA

1. "Keep your sisters, daughters, and wives off the streets and alleys." (Riverside letter). The redundancy is striking. Here, he appears to be using A as dash, all other letters as dot. The Morse sequence reads: 00001000011, 0000(H) 1(T), 0000(H), 11(M). HTHM: HMTH, HOH. In the other concealed Morse sequence (OHDRE), he used W as dash. A and W correspond graphically to the Greek alpha and omega. Alpha and Omega is Jesus' self-description, and the choice of these two letters probably indicates Z.'s high degree of megalomania.

2. Z. wrote that he was paying back CJB for "brush offs" she had given him "during the years prior". The postpositive use of "prior" is peculiar English, and there is no reason to believe that CJB had ever met Z. before he murdered her. Given Z.'s constant harping on circles, zeroes, rounds, oughts, discs, etc., it seems reasonable to read PRIOR as either "0 equals $2\pi R$ " (the formula for the circumference of a circle), " $0 = \pi R^2$ " (the formula for the area of a circle), or possibly, ambiguously, both at once.

3. "Some fought - it was horrible".

SOMEF: 56. 560UGHT is 560, 1000110000. BMH.

HORRIBLE: HOR2IBLE. RxI. H2O. BLE (B-13, E-3): 28: 11100, MTI, "empty eye", "zero I", numeral 8.

3. "She went to the slaughter like a lamb." SWTSLAL, read as an acrostic. Since the Riverside letter is headed "BY -----", WIZARD should apply. With numbers generated by doublets, this reads:

S W T L A 222(6)
H D G O Z 6

6 (110) is shorthand for ME. ME GOD. Z. H. The Riverside letter appears to be full of WIZARD-acrostics. This is one of the juicier ones: "One thing was on my mind", OTWOMM, MOM TWO.

4. In the Melvin Belli letter, the word "Montgomery" on the mail cover was abbreviated as MTGY. In the GCEY-permutation of MIKE, EX GY corresponds to ME. Translation: "Zero ME".

5. "I was walking down the hill. . . ."

In this passage, Z. punctuates with ampersands. I counted words between ampersands. The numbers appear to correspond to letters of the alphabet. 15-0, 6-F, 15-0, 14-N, 4-D, 8-H, 7-G, 8-H. (NB: 8 groups)

O F O N D H G H
L U L M W S T S

L2 U M W S2 T: L(50), 22(4), MT(0), USW(63).

63
50
4
117

117th Meridian (Riverside, Death Valley). The MT may be Death Valley.

6. "I shall. . . ." (threat to disguise murders as accidents)

Initials following "shall", which is used in every sentence, forming acrostics. The syntax is suspect, given the peculiar English, e.g., "I shall change the way the collecting of slaves".

1. CTWTCOS: C. TWO. S. 22(4).

100 (C)
19 (S)
2 (TWO)
125

125: 1111101. 11 1 1101. MT Q. Zero Q.

2. LLRRKOAAFFAE: LRKOAFE 2232 (9).

OF(21) and 9: 30: 11110, Morse numeral 9, letter I.

I. ARK. LE (53).

3. NCMBIHBTCFT. NCMBIHTF 222 (6).

H. BM. TINC. F(6) and 6. Cf. Phillips 66 map. 6 is ME (110).

6 and 6 is 12, 1100, Morse Z.

4. NTYWMDCOWIK.

NY. IK. TWO. MDC2 (1602).

1602
TWO
1604

1604: 1101000110, 1101 000 110, QSME -- Q'S ME(?).

NY in B-M: 101011, 43. IK: from ME IK.

"Titwillo"

In the 29 January 1974 letter, Z. quoted Ko-Ko's plaintive "willow" song. The refrain as written by Gilbert reads, "Willow, titwillow". Z. left out the "willow" and omitted the final W. TIT (1001) is another spelling for TEA (1001), 9, I. WILLO in WIZARD is the unappetizing word DROOL. It seems likely that it is, however, an anagram for LORD O. TITWILLO, then, reads⁷, "I am Lord Zero".

[redacted] specialty is wind. I can't help but speculate that there is an association here with Kenneth Grahame's Wind in the willows. The title refers to an apparition in the chapter, "The Piper at the Gates of Dawn", in which Mole and Rat encounter the patron deity of wild animals, the god Pan. Pan is Polish for Lord. Our word "panic" derives from Pan, and there is no better description for Z.'s Bay Area project than inducing a panic.

b6
b7C

22 degrees East Longitude, which I believe to be Z.'s maternal line of reference, passes through eastern Poland. Within a degree on either side of that line, there are no fewer than five communities whose names derive from the Polish word for "willow", wierzba. As a thought-experiment, I am going to omit the final letter and spell it out as a WIZARD-anagram: IVYARD.

"Sought Victim 12"

The sequence OUGHT is a paraphrase for zero (circle, hole, round, luna, disc, are others).

CVII. S (19). 12. NT. OUGHT.

107 (CVII)

19 (S)

12

138 & NT & OUGHT: 13800.

This appears to be a flashback to Riverside. The square root of 13800 is 117.47341. . . . Expressed in angular measurement, this corresponds to 117°28'24.276", which is only four minutes west of the scene of the Riverside murder.

It may seem far-fetched to suppose that Z. could be constructing messages of square roots of large numbers, but a glance through an engineer's book of math tables shows that these numerical relationships are readily accessible with only a little extra work required to make them precise.

No stamp

~~The first Riverside letter was hand-delivered to the police by a postal inspector, since there was no postage on the envelope. I believe it's another implied message. S(19)&A(1)&P(16): 36. 36 and NT: 360. CIRCLE. The (implied) ZERO ("zero stamp") is another circle. CIRCLE 2: Dante's circle of the winds.~~

The Lake Tahoe Card

This document shows a picture of a housing development at Lake Tahoe. In the background there is a stand of pine trees. Z. used a paper punch to make a hole in the trees. The card bears three phrases:

PEEK THROUGH THE PINES

AROUND IN THE SNOW

PAS, LAKE TAHOE AREAS

There is probably another phrase implied by the hole: MOLE II. THE PINES. The alphanumeric quantities of II and THE add up to 54, which reduces to zero by casting out nines. IIE adds up to 36, another zero. Two zeroes: 2MT. The remainder is PI. MT over 2PI: radian, i.e. O'Hare.

PEEK THROUGH THE PINES: P2 E4 K T2 H3 R O U G H I S

II OUGHT. PERKINS.

OUGHT is zero. II0 is Morse for MI. It reads, ME PERKINS. PERKINS is Anthony Perkins, the man who, as his own mother, became a mass murderer (Psycho). IB: PSYCHO ends in HO.

AROUND IN THE SNOW: A R 02 U 13 D I T H W L S

23. ID M.R. U WATSON.

23 is a running theme, the inclination of the Pole. ID M.R. is "my identity is Mother": [REDACTED] is [REDACTED] street address.

LAKE TAHOE AREAS: LA (12) is M (13). TEA is 1001, 9, I. MI and the remainder spell [REDACTED], PA is LIZARD for KZ, concentration camp. SS (38, the paternal number) is also Schutz-staffel. [REDACTED] PA SS (KZ 38). MOR's father is not held in the same esteem as his Polish-Jewish mother.

b6
b7C

AROUND IN THE SNOW appears to contain another layer of meaning. A ROUND is the letter O in SNOW. The remainder, SNW, contains the familiar themes SI and V (23). SNW in LIZARD in MHD. [REDACTED] D is 100, 4, IV(Y). As MHD, the phrase acrosticizes Happy Mother's Day.

I FORGOT "SIERRA CLUB"

SIERACLUB 2. IXR.

SEACLUB 2

HVZXOFY 2

H2O. VF. XYZ.

LETTER -
QUANTITIES OF
SIERRA CLUB
(B=13, E=3):
117 — RIVERSIDE/
D.V. MERIDIAN

"Mineth Victim"

VICTIM is attractive to someone with Z.'s turn of mind because it is made up of Roman numerals and MT. As a number, CVIIMT (1070), it spells: 10000101110, 1000 (B) 010 (R) 11 (M) 1 (T) 0 (E). BRM occurs in lines 10-11, 340-character "cipher". TE is 23, IM TE. Rewriting MT as 0, it spells BROE. WIZARD for IVY. L (50). 50 is probably tin (atomic number), SN [REDACTED]. VICTIM, then, is a concealed spelling for "mother and son".

NINETH: H D' TEN. TEN is a remarkable convergence of different systems. TEN in Morse is 1010, which is also the binary number ten. By shifting pauses, 1010 becomes 101 0, KE, from IM KE.

"Pine Splinters"

One of Z.'s fanciful tortures envisioned for future victims was driving pine splinters under their fingernails and setting fire to the wood.

PINE SPLINTERS: P2 I2 N2 E2 S2 L X R T

Cancellation: RxI. P I E : L T. 22222 (10)
K M V H O G. 10.

b6
b7C

K. MOH. V. G (7) & 10: 17 (G). or G (Morse 110): ME. ME
10 (decimal): ME 1010 (binary): ME ME.

K. MOH. V. corresponds to the familial triad expressed in the features copied from the hite Rabbit, which resemble K, F, and V. The F, with 3 strokes, is binary 3, 11, Morse for N. Here, MOH stands for the F.

"Fiddle Around"

FIDDLF A ROUND: FIDDLMO: FIDDL20. F(6)&I(9)&D(1)&L(12)&E(3)&2: 36. With the O suffix, 360. Circle.

"Salt Beef"

Another fanciful torture is to gorge victims tied up in caves with salt beef and then listen to them scream for water (H2O).

S A L T B E F 2
H Z O G Y V U 2

H2O. Z. UG. YV. UG: [REDACTED] YV: [REDACTED] or
GY. UV. GY: from GCEY (ME), UV (43): year of birth.

"Pestulentual"

P F S T U L N A 2222
K V H G F O M Z 8

KFV. MO. Z. HG. 8 (NTI).

HG is mercury, one of the two alchemical components of gold. It is used in silvering Looking-glasses, and it makes Hatters Mad. Mercury, as Hermes Trismegistus, a Hellenized form of the Egyptian god Thoth, invented alchemy. The quadrangle of Christ Church College, Oxford, has a circular walk quartered by two crosswalks (Zodiac's sign). At the center, there is a small reflecting-pool, and in the center of the pool stands a statue of Hermes.

"Lucences"

N U C T S 222
M F X V H 6

VF. MH. X6: ~~S E V E R A L~~ $\times (24) + 6 = 30 = 1110 = 7$

VF is shorthand for [] MH is [] 1000 can express 1000 0: BF(rta); 100 00: DI (identity); 10 000: LS (MH); or 1 0000: TH (WIZARD for GS, Gilbert & Sullivan).

"Uhrite"

Implied text: ARKIT: ABIT 2.

A R I T 2
Z Y R G 2

Z. RY (43). C(7) & 2: 9 (I). 1943: birth year.

b6
b7C

"Iceout"

ID. OUT 2. O(15)&U(21)&T(20)&2: 58.

ID 58. Radian angle, []

"Yours truely"

Cancellation: LxO. Y2 U2 R2 S T F.

Y U R S T E 222
B P I H G V 6

VF. HG. B(13)&I(9)&6: 28.

MOM was 6 months into his 28th year at the time this letter was postmarked (July, 1970). The "little list" he shares with Ko-Ko is hero made over into a nautical list: 23 degrees 20 minutes out of perpendicular (Pole).

"Drowning"

Cancellations: DxW. RxI. DD generates a 2.

ONNG2: ONG 22: O N G 4
L M T 4

LMT: 5:0: 1000011100.

This is conjectural, but the first eight characters are a mirror-image combination that appears to fit thematically, leaving 00 (I) at the end. 1000 (B); 0111 (J); 00 (I). "I am B(erta) end J(ack)" -- as in Jack and Queen.

"Control"

Cancellation: Lx0. 000 generates a 3.

C I T R 3
X M G I 3

DXI: 1011, Y(VI). G(7)&3: 10 (TE) or TEN: 1010: 101 0: KE.

"(victim) No Nine"

I O I E 3
M L R V 3

MEV: 1055. R(18). 3. 1076: 100 0110100.

1076 is a near-miss to DEATH (1072) and could be an error in Z.'s math (I know how easy it is to make them). It could also be DEATH plus IV (4). But there is another spelling that seems to fit with Z.'s egomania and his taste in literature:

100 001 1010 0: DUCE.

DUCE is historically Mussolini. And there is a cross-connection with Dante, whose Second Circle was concealed in Line 2 of the Riverside poem. Discussion under next item, "clews".

"Clews"

This is British spelling and so points at Great Britain (G.B., Land's End) like a number of other indicators: Beatles-, Gilbert-, Carroll-quotes.

C L E W S
X O V D H

HO. DVX.

In the Pleasanton letter, Z. responded to the discovery of his "Riverside activity". He said the police were stumbling across all the easy ones: "there are a hell of a lot more down there." MORE is an anagram for ROME. HELL is "down there". In fact, "down there" is not a bad translation for the Italian INFERNO, which does not mean "a fiery, blazing place" -- just "nether place". At this point, I will yield the floor to Professor [redacted] of Harvard University, [redacted] alma mater, commenting on Canto XXXIII, Purgatorio:

b6
b7C

(Dante makes) . . . the solemn and mysterious announcement of an approaching heir to the vacant Imperial throne, a 'cinquecento diece e cinque', sent by God, who shall slay the heriot and the giant. The number DXV, with a shift. . . gives DVX, the Latin word dux, or 'leader'. An Imperial leader of mankind, ordained by God, is soon to correct the greedy and unscrupulous Papacy and overthrow the power of the House of France.

CHG goes on to discuss a contemporary interpretation of DXV as Deus (X)Christus Venturus, Lord Christ to come. It is important to note that Z.'s use of numbers for words stands in an ancient tradition. Think also of DXV: DUX and SVMIS (Henry): MI SUB as parallel examples of finagling. The Latin dux, of course, is the source of Italian duce. Dante's greatest work, the Divina Commedia, is a work whose scope is on a par with Z.'s. It encompasses the entire universe. It would seem that Z. considers himself a rival.

"Chief of Police"

Riverside Letter I was annotated "copy to Chief of Police". The Chief never received his copy. I smell a rat.

C H I E F O P L 22222: OH. PI. FC (9). LH (53). 10.

53
10
9
72

OH is W (23). 23xPI: 72.256629. . . . It seems to fit.

"She was very willing to talk with me"

In the phrase OHRE, Z. used words beginning with w as dash, all others dot. Here, it seems to be reversed: WOOWWWOW. Conjectural division: 1010 1101. The first group is probably KE, the second Q (son and mother). But K has the same form as C. CQ is a radio-amateur's code for "Is anyone willing to talk with me?" Z. is fluent in Morse Code, and I wonder if he has ever had a ham license. HAM: AM II.

"More Fun"

Cancellations: FxU. MxH. Remainder: ORE.

O R E
L I V

I believe this has significance on both levels, as ORE(gon) and LIV (54). ORE, by alphanumeric quantity, is 36. EM was in her 36th year when MOH was born, but her age was 35. BM written as a number is 100011: 35. BM in WIZARD is 43 NY. NY is 101011: 43. The place of MOH's birth was New York City, and the year was 1913. Mathematical omens seem to rain down on him. One of EM's largest commissions came from the City of Portland in Oregon, just across the water from Washington. The skyline of Portland is dominated by its main landmark, Mt. Hood. Motherhood. Lake Berryessa.

54 is 9-divisible, and as 110110, it spells ME ME.

"Useing"

U S E I N G
F H V R M T

VF. RH. MT.

b6
b7C

"Cruzeing"

C R U Z I I N G
X I F A V R X T

Cancellation: RxI.

VF. XP. (MT: O. AKO, 1615: P)

"Trunt"

Cancellation: FxU.

R I T
I M G

G (110): ME (11 0). IM ME.

"Parking" ("two groups of parking")

TWO GROUPS OF (TXG, FxU)

Cancellations: RxI. PxK.

A N G
Z M T

Z. MT. MIKE Z MT: MIKADO.

WORPS 3
DLI KH 3

$$KH3 = 22$$

$$\begin{array}{r} \underline{DLI = 551} \\ 573 \end{array}$$

1000 11 1101
B M Q

"Motor Cicles"

This is too easy. OO MT CIRCLE'S.

OO is Morse for I, ego. OO is also Circle 2.

"Rile"

RXI. L: Land's End, 53.

"Shure"

SXI.

U R E
P I V

VI, 6 and F, 6: 12: 1100: Z.

"Beware" (I am stalking your girls now)

BW(ta) & WA(shington), postal code. Mommy and daddy.

"Wipeinr"

V I P E N G 2
D K K V M T 2

MTRD: ORD. O'Hare Airport, Chicago.

K. ORD. V.

KV again, but with ORD for

"S101" -

While we're on airport codes, S101 is LIZARD for U LHR. The zero is G RT, LHR is Heathrow Airport, London. It's also Lake Herman Read.

b6
b7C

"Waveing"

Cancellation: VxE.

W A I ? G
D Z R M T

Z. MTRD: ORD.

"By Gun. By Fire. By Knife. By Rope."

I believe that the word "by" is a clue to the WIZARD code and is not part of the text. (Cf. BY----- heading on Riverside Letter I). There are numerous hidden allusions throughout Z.'s writings to Pirates of Penzance, one of them being the Halloween Card, which contains a paper skeleton. One of the burglar tools issued to the pirates before the attack on General Stanley's castle is a "skeletonic key". The Halloween Card is just that. It contains the key to every one of Z.'s secret means of expression, map references, WIZARD, Binary-Morse. It is his Rosette Stone.

GUNKIFEROP. 22223 (11).

Cancellations: FxU. KxP. IXR.

$$\begin{array}{r} \text{G F R O } 11 = G(110:110\text{ME}) \\ \text{T V } 9 \text{ L } 11 \\ \hline \end{array} \quad \begin{array}{l} 11 \\ + \text{ONE} \\ \hline 12 \end{array} = 1100(Z)$$

LWTF: 550.

550
11
561

561: 1000110001.

1000: R. 11: M. 0: E. 001: U.

RN. RU. Nummy and Daddy.

"Descise"

DIGC (zero). SEE (19⁶3&3): 25.

250: 111111010, 11111 101 0. Zero. KE.

Zero: eye: I. "I am KE."

"San Fran"

Implied text: CISCO. CIS02.

101 (CI)
19 (S)
2
122

122 plus 0: 1220. 122nd Meridian. Lake Harman Road murders on 12-20, 1968.

"Victom"

CVI: 106. 1060MT: 10600.

Like "Sought Victim 12", this appears to be a square. 10609 is the square of 103 (CE from GCEY, Z MT, etc.)

"It was a ball. First I pulled the middle wire from the distributor."

IT waS A ball. LAST. Last letters spell LAST. What a stunt!

Next word, "first". First letters, then.

FIPPTWHEFTD. WxD. FIPPTW 22.

P(6)82: 8, H. H equals MT over 2PI.

"Saterical Comidy"

What he really liked about The Exorcist was the demon, PAZUZU.

AxZ. PU 22. PK. I am crackproof.

SATURICAL: RxI. S CAL TE. He was 23 in Southern California.

COMIDY: ID. CO. MY (38). ID CO is ZODIAC (AxE). C (100) and 0 are 1000, Morse 3, numeral -- binary -- 8.

"Som Bussy"

Cancellation: ExY. SOLU 3. 3 is E. MOUSE. Implied: HOLW. Mousehole is a suburb of Penzance, near Land's End. NO is Z., LE is Land's End/53/0530 West. The most famous resident of Mousehole was Dolly Pentreath, who during the last years of her life (she died in 1777) was reputed to be the only person alive who had been raised speaking Cornish. In other words, she, like Z., was the repository of a secret language known only to herself. It might be possible to read the N-Y 27/0 sum as "zero" for "hole".

"Entirle"

Cancellation: IXR. ENTLE2: L & TEI & 2: 62.
62: 111110. 111: MT; 11 0: MT. ME MT, ME ZERO.

"Comitt"

COMIT2: CI. 2. O. MT.

$$\begin{array}{r} 101 \text{ (CI)} \\ - 2 \\ \hline 103 \end{array}$$

OO (OET) is Morse for "I". It reads, "I am 103" (CI, Z MT).

The Riverside Poem

Sick of living unwilling to die
Cut clean if red! clean
Blood spurting dripping snilling
All over her new dress
Oh well it was red anyway
Life draining into an uncertain death
She wont die this time
Someonell find her
Just wait till next time

The most obvious point, considering Z.'s preoccupation with the number nine, is that the poem is written in nine lines. Somewhat less obvious, and perhaps coincidental, is that three lines contain 18 characters, a 9-divisible number (TII). Assigned a value of 1 for 18 characters, 0 for all others, the sequence reads: 010100100. It could be 01 010 0100, ARL. Ames Research Lab comes to mind, especially in connection with the Dante-Circle 2 anagram in line 2.

Transposed into WIZARD, the acrostic reads: HXYZLOWHQ. H is a frequent signature. XYZ is showing off. L is Five-Zero. OHM is H2O expressed so that it gives 38 in Morse (10 for dash, 1 for dot): 111 00000000. Q is Mother.

The telostich, untransposed, reads: ENGSYMRNE. HENRY. GS (26, Gilbert & Sullivan). 3. 3 is binary 11, Morse M. M. Henry. 26 (Z).

Four is an important number, as discussed elsewhere. It's R (Y). CJB was murdered in an ivy bed. B(13) and M(13) both reduce to 4. 4 is 100 in binary, D is 100 in Morse, and it's the 4th letter of the alphabet. The occurrence of four-letter words in the poem is quite interesting, since it spells out two familiar patterns. Reading from bottom to top, line-by-line, this frequency emerges:

5 1 3 2 1 1 0 0 1.

5 is E. 13 is M. 2 is B. 110 is ME. 01 is ET, 3 before 20: 17.

Familial triad, ME 17 (Q).

SOMOLPLL: 9 letters. With Lx0 cancellations, number generation, it boils down to SFL 22. ME S! 22. (22 is Z, 1100 as 10-10-1-1; MI as 13:9).

SICK OF: last letters spell KF, as in crackproof. 4 letters, 2 letters: 42, line of latitude closest to Cambridge, Mass.

The entire text is 197 letters. 197: 11000101.

11 0 00 101. ME IK. Coincidence?

21 June 69. Had a power failure at @ 1320 hrs; with about
15-20 minutes to go on R15. Restarted OK at 1352, some
trouble getting power to file loader. After completing
R15 tried running pgm 050 to set the clock. Neither
the deck in here nor in the cabinet wanted to run.
Off-line manually they went fine, but would jam
every time on the same card with both decks when
trying to load. Finally got it seen by stat-stop about
2 cards at a time.



b6
b7C

KC3

29 June 69 - looped while running R27 (page 16) &
file loader went local & would not come back
on remote. Seemed as if the bottom drive shaft
was stuck, as it didn't even want to pull a loop.
However, I did get some tape manually into loop, if
the bottom shaft unstuck, & restarted R27



b6
b7C

348	139	371	132	546	185	417	206	443	231	1	233	241	263	47	279	70	303	45	325	116
370	161	393	184	416	209	459	230	21	232	23	255	46	218	69	301	12	324	115	347	138
392	163	415	203	438	229	70	257	32	254	45	277	68	303	41	323	114	346	137	369	160
414	705	437	228	19	251	42	253	44	276	67	299	90	302	113	245	136	348	159	391	162
436	227	18	250	41	273	43	275	66	295	89	321	112	244	125	367	158	390	181	413	249
17	249	40	272	63	274	65	297	88	320	111	316	134	366	157	387	180	412	245	435	223
39	271	62	294	64	296	87	319	110	322	133	365	136	382	179	411	223	434	225	16	248
61	293	84	295	86	318	109	341	132	364	155	387	178	410	201	433	224	15	247	338	770
83	315	85	317	108	340	131	363	154	386	177	409	202	432	223	14	246	37	269	60	242
105	316	107	329	130	362	153	385	176	408	199	431	222	13	245	33	268	59	281	82	314
106	338	179	361	152	384	195	407	198	430	221	12	244	35	267	58	270	81	312	124	311
128	360	151	383	174	406	197	419	220	11	243	31	266	57	289	80	312	103	335	125	387
150	382	173	403	196	428	219	10	242	33	245	56	288	79	311	102	324	125	357	127	259
172	404	195	427	218	9	241	32	264	55	287	78	310	101	323	124	356	147	358	149	381
194	426	217	8	240	31	263	54	286	77	309	100	322	123	325	146	378	148	380	171	43
216	7	289	30	262	53	265	76	308	99	331	122	354	145	377	136	379	170	402	193	435
238	29	261	52	284	75	307	98	330	121	353	144	376	137	394	169	421	192	424	215	6
260	51	283	74	306	97	329	120	352	143	375	166	398	184	420	191	423	214	5	237	28
282	73	305	96	328	119	351	142	374	165	397	188	420	190	422	213	4	236	27	259	50
304	95	327	118	350	141	373	164	396	187	419	210	421	212	3	235	26	258	47	281	72
326	117	349	160	372	168	395	186	418	209	441	211	2	234	25	257	46	280	71	303	94

21 → 46 4.1

221

8691 119

Camp Life

CAMP LIFE

3-LETTERS

SHEEP
FUN
ROD
ALIN

4-LETTERS

ACOG
ANTS
AKES
ECHO
EGGS
HIKE
KITE
MAPS
MINE
TRAILER
UNPACKS

5-LETTERS

ALLOW
AMHS
DAIRY
MESSS
SEDAN
GUNK
SCOVE
THROW
FOODS
TRACKS
TREES

6-LETTERS

ALASKA
APODAMS

GRATES
GROUND
HUMPS
SEEDS
SHOONS
TALES
TASTES
TRAYS
USEFUL

7-LETTERS

BLANKET
FORESTS
HILLOCK
LASSERS
TRAILER
UNPACKS

Answer on Page 97



8-LETTERS

FASTENER
OUTDOORS
ROOSTERS

9-LETTERS

ACME OF JOY
ASKATHWAY

T	G	A	L	I	E	R	S	I	A	O	C	R	D
A	N	L	I	O	U	T	D	O	O	R	S	A	A
B	T	K	C	O	R	E	S	T	A	L	S	P	I
C	I	S	T	E	M	V	E	T	A	L	S		
D	E	E	B	R	E	E	S	E	D	Y			
E	K	U	N	K	E	T	A	S	T	E	S		
F	R	U	N	K	E	T	A	S	T	E	S		
G	T	R	S	R	R	R	R	R	R	R	R		
H	U	S	E	F	U	U	U	U	U	U	U		
I	C	E	W	F	U	U	U	U	U	U	U		
J	N	C	N	N	C	C	C	C	C	C	C		
K	D	H	A	Z	A	L	A	S	K	A	K		
L	H	A	Z	A	L	A	S	K	A	K	A		
M	A	Z	A	L	A	S	K	A	K	A	K		
N	S	C	A	S	K	A	K	A	K	A	K		
O	O	C	A	S	K	A	K	A	K	A	K		
P	G	G	A	S	K	A	K	A	K	A	K		
Q	G	G	A	S	K	A	K	A	K	A	K		
R	G	G	A	S	K	A	K	A	K	A	K		
S	G	G	A	S	K	A	K	A	K	A	K		
T	G	G	A	S	K	A	K	A	K	A	K		
U	G	G	A	S	K	A	K	A	K	A	K		
V	G	G	A	S	K	A	K	A	K	A	K		
W	G	G	A	S	K	A	K	A	K	A	K		
X	G	G	A	S	K	A	K	A	K	A	K		
Y	G	G	A	S	K	A	K	A	K	A	K		
Z	G	G	A	S	K	A	K	A	K	A	K		

PUZZLE 104

GOOFY PATCH

ACROSS

1. In the maze I found some corn
4. Not a soul saw the sun
6. They put a chisel on his mug
8. ~~Laughed~~ a roar when hit with a paddle
9. He's fallen for her
10. We ~~had~~ G.G. buy a doll carriage
11. The snake made her gasp
12. ~~Was~~ a seed and it's pithy
13. Thus it became os
15. They bury the red gem
17. The ~~customer~~ knew the ruse
18. ~~The scene~~ was a sight
20. Carried aboard into the tavern
21. ~~Meat~~ will get a portion
23. Mother came from Oklahoma
24. They lit UN offices up to then
25. The bird picked up a wad of paper
27. He bites if we spin him
28. He cleans all the weapons
30. Don't gouge, Rah-no coarse food
31. We seek ~~curat~~ at the precise moment

DOWN

1. Elm's bar purchase of agates
2. In a gem I saw a reflection
3. "Say!" he said, "It isn't hard"
4. My tea's so vaporous
5. Made fancy circles in the pools
6. Prig lost his valise
7. The ram set himself against his boss
14. The one longing to us is sour
15. She writes reviews about the shows
16. Thunder can blot out memory
19. She's one in a million
20. One bale can make it level
22. The chances are he's in Todd's employ
23. No man had ever seen the mansion
26. In a week she became feeble
29. Leon has been in existence for ages

Answer on Page 128

M	A	I	Z	E	1	3	0	2	G	U	M
A	M	A	T	8	O	A	K	A			
R	A	3	H	E	O	I		S			
B	U	G	G	Y	A	S	P	P	T		
L	E			M	13	14		E			
E	R	U	B	Y			17				
S	I	T	E	D	1	2	BAK				
O				4	A	21	22	E			
M	N	2	I	N	R	I	L				
A					A			D	A	23	
N	I	P	S	28	1	5	P	S	E		
O					C	0		A			
R	E	C	C	O	URSE	31	N	I	C	K	

109

1. FEE & P&P
 CP 44
 Customer Request for
 Billing(FEE)
 Following Request for
 Billing(FEE)

1. Sort File 4
2. Sort N (a) 3
- a. FEE - FEE
- b. FEE - FEE

2. FEE
 CP 44 - Main U.P.
 Shipping Expenses:
 1. Sept 16-17-18
 (Rec'd. No.)

1. FEE
 CP 44 - Main U.P.
 1. FEE
 2. 3 lbs. 4 lbs. 5 lbs.
 3. 10 lbs. 12 lbs. 14 lbs.
 4. 15 lbs. 17 lbs. 19 lbs.
 5. 20 lbs. 22 lbs.
 a. reg. - pri. 69. 26
 b. 1st class 61
 a. label pri. 4.50
 b. reg. - pri. 4.50
 - 4.50 min. 1st class
 with Reg.

Postage Paid

2. FEE	Main U.P.
FEE, 3 lbs.	82.00
3 lbs., 4 lbs.	
4. 1st class	
Ship. Station. C.R.	
Main U.P.	
1. Sept. 58-59 N	
(postage)	
2. Sort 6-8-9	
1. A.S.L.	
2. A.S.L.	
a. 1st class	
b. 1st class	

21-4

USL - UMMPS ch

No Sort or Inter
Forward to ADPF
for D26

21-2-4

B5U - BSU - upper
Bench Stock Issue

1. Sort 5.3-44 N
S13+46 A/N
(WHSG. loc)

21-9

I5U - main upper
Bench Stock Issue
CDS.

1. N. 46-465
2. N. 35-316
3. N. 33-31

21-6

FSA - Main 4%
GSA Shp. Act. Cds.

1. Sort 6-4

A/W

"ICKAISCBW"

31-2

B.L.D. - Main 476
RDO confirmation
1. Sort 14N 6-4

31-1

AC.L. - Main 476
14N 6-4
1. Same 70 Gby Chk. 6
2. %Sd in 66
a. rej. pri. 64-34
4. %Sd, 3, in 61
a. label pri. 64-32
b. rej. pri. 64-35
1. Sd 9 in 61 +
place with 3a.
Sort with AF1

TRANSCRIPTION

31-6-3

FTC Main 476
Report of Cust. Control
1. Sort 6-4 14N

31-3

EC.L. - Main 476
Execution Control
CRS.
1. Sort 14N 6-4

3-6-9

FTR & CTS MAIL

1. Sort 31 N

2. Sort 51 N

1. Review Cds.

Re M Supt.

2. Review Cds.

Non-enc. Mater.

Supt.

3. Sort 51 N

1. Review Cds. Rec'd.

2. Review Cds. Mater.
Taxes - Cents

3-6-5

FTE - Plain 4%

Report of Cust. Excess

1. Sort 54 N

a. Blanks

b - if 1/4% Tolls.

2. Sort 31 N + 5

Report of Cust. Excess

Exception 1

4-2-9

Bug & Bird Tolls.

Plain 4%

Breaker Notice

1. Sort 54 1/2%

Plates 4 1/2%

2. Sort 51 N

4 1/2%

1/2% Tolls

1/2% Tolls

1/2% Tolls

4-1

Plain - Plain 4%

Reg'd. post office cds.

1. Sort 64 1/2%

2. Sort 51 N

Reg'd (S) airmail

Reg'd (F) airmail

3. Breaker notice

1/2% Tolls

41-3

TM1 - GP upper
Ship Tracek W.

41-2-6

BDF main upper
SNAD Add/Delete Cd.

Keep in alignment
check last position.

41-6

FME - GP 4%
Mobility Equip. Bentley, Or.
1.3 sec. 49-36 N

41-4

DLL, S. Main 4%
2/3 Divergent.
1.3 sec. 49-36 N
2. 35. 91. 101
3. 32. 51. N

5-6

FEX - Main 4th

Forced Exercises

1. Sust 13-8N

12° N

2. Sust 54° N

(spine straight)

3. Sust 5 in 31

2. Sust 30 sec

5. Sust

6

Following Cds.

1. Sust N Globe

2. Sust 13-6N

3. Sust 30 sec

5. Sust

4-7

PAC - Main upper
PAC lower

Pri. Monitor Cds.

1. Sust Sust 30 sec

30

2. OTHERS

8d 75N

7d 65N

3. Sust 1 N.

1. 03 N.

2. "

3. "

5-8

ECG - Red upper

Except. cardio Rx

1. Sust 6 in 45

Disked 30 sec

2. Sust 2 in 45

Change Rx

3. Sust 45 sec

After Rx

7-2

B7 - Main 4/4

RDO Dental Ops.
1. Soil 4/4 4/4

7-1

PPL - Main 4/4
Person. Response Ops.
1. Soil 4/4 4/4

7-3-9

B7-2 - Main 4/4

Bul. Team. 6/6 6/6
1. S. 4/4 4/4 4/4
(Wearied)

2. S. 4/4 4/4

(Wearied)

7-3

PPL - GP 4/4

Team. Movement
Concen. Ops.

9/1-3-1

TRM

Results of CMC
Meet for PEP
of 6957

9/1-3-2

CIC - New 4½
Inv. Count End.
Forward to Int.

9/1-3

KL - S. Martin

South Park Co

Quinn

ISU

W.L. Lamp & Co.
P.O. Box 111

1. East 18th N

12 AM

2. 2nd St. 3rd

Park 4th Street

3. 3rd St. N.

4. 4th St. 1st

5. 5th St. 1st

6. 6th St. 1st

91-1

E.P.C. - ALTAIR "Y"

J.W. Research CPS.

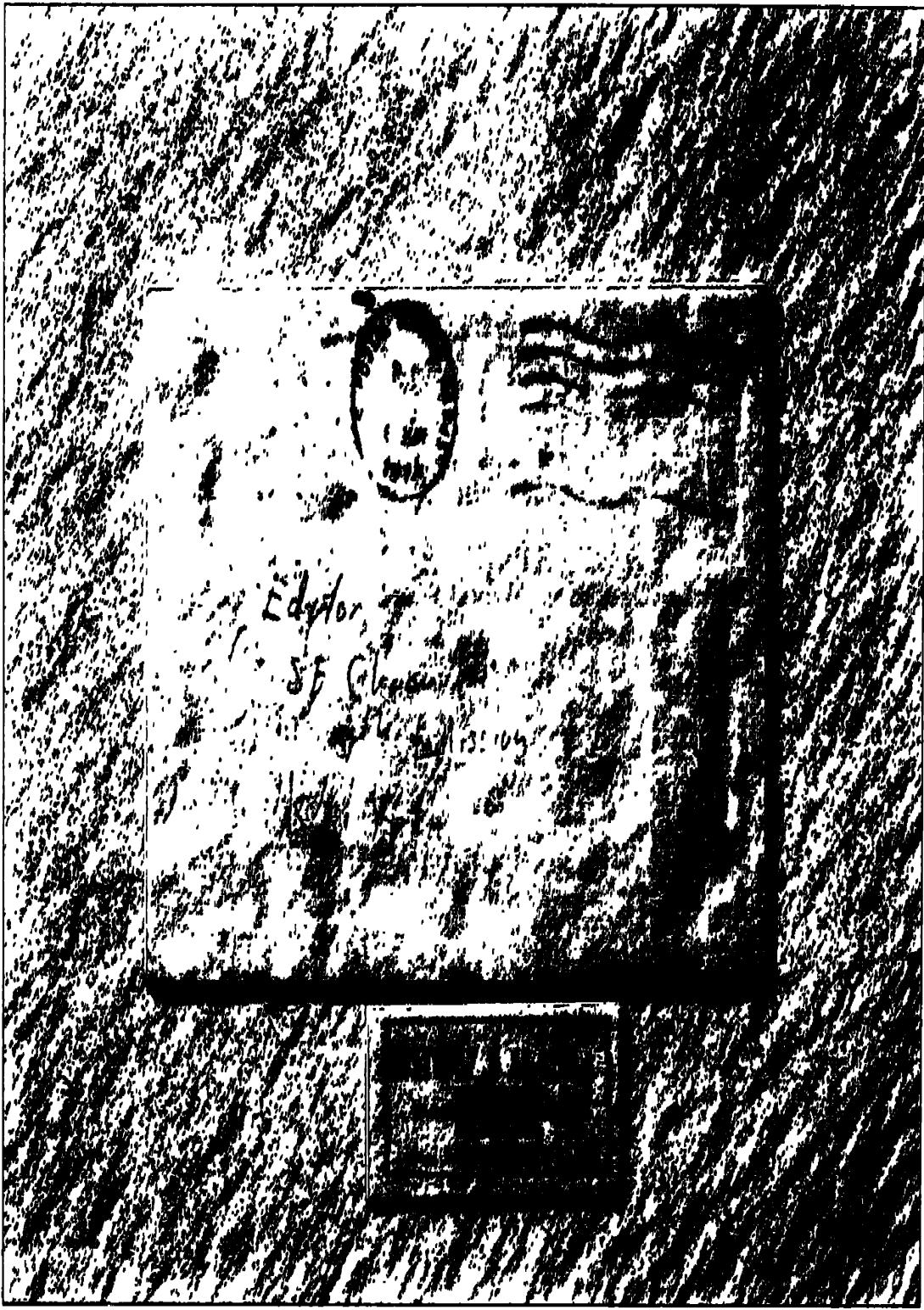
FORWARDED TO J.W.

Extra Photos

Also Sub.

And

Indented Writing Photos &
negatives



FEDERAL BUREAU OF INVESTIGATION
FOIPA
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