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Volume 2 of 2 (U)

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Presented to:

Submitted by:

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Final Report

April 1989

AN APPLICATION ORIENTED REMOTE VIEWING EXPERIMENT (U)

By: [-   ]

Final Report
Covering the Period 1 May 1988 to April 1989

April 1989

AN APPLICATION ORIENTED REMOTE VIEWING EXPERIMENT (U)

By:

SRI PROJECT 2740

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LIST OF FIGURES (U)

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I OBJECTIVE (U)

The objectives of this experiment were to:

● ⌐   ⌐Demonstrate the potential of a novel
           collection technique, known as remote viewing,

● 　　Determine the degree to which the technique used to
analyze remote viewing results is applicable.

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II BACKGROUND (U)

_(U)

___) SRI was asked [   ] to participate in an experiment conducted during the latter half of August, 1988, at [   ] air base [   ] in New Mexico. The primary objectives were (1) to demonstrate the remote viewing of [   ] energy w____ and (2) to apply fuzzy set analysis to interpret the data.

A.   (U) Remote Viewing

(U) Remote viewing (RV) is an apparent human ability to gain access, by mental means alone, to information that is secured by shielding, distance, or time.[1-5] * At least three elements are necessary to conduct an RV experiment:

(1) An individual, called a viewer, with RV ability

(2) Specific target material (not available to the viewer at the time of the experiment)

(3) An analysis technique to determine the degree to which RV occurred

In a typical laboratory protocol, a viewer and a monitor—an interviewer who is also unaware of the target material—are sequestered at time T_0. At T_0 + 5 minutes, an assistant selects the intended target from a large pool of potential targets (e.g., a list of locations within a half-hour drive from the laboratory) using a random procedure. At T_0 + 30 minutes, the assistant is at the selected site and, back at the laboratory, the viewing begins. At T_0 + 45 minutes, the viewing ends and the assistant returns to the laboratory. To provide feedback, the viewer, monitor, and assistant return to the selected site and review the RV data.

(U) To determine if RV occurred, similar experiments are conducted using a newly selected target for each trial. Usually, the trials are done with target replacement (i.e., each target is returned to the pool and may be selected again by the random process).

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* (U)   References may be found at the end of this report.

B.   (U) Fuzzy Set Analysis

(U) Since 1972, SRI has developed many procedures to determine whether information has been obtained beyond chance expectation.[6-8] In the current method,[9] the targets and viewer's responses are described as fuzzy sets of descriptor elements (e.g., presence of water). The outcome of the RV experiment is measured by a *figure of merit,* which is related to the accuracy and reliability of the viewer's description of the target.

(U)

When RV is applied | | the analysis procedures differ considerably. In laboratory experiments, much is known about the target, but in | | applications, very little target information is known. Thus, the analysis technique must be modified in order to assess the "correct" RV response elements before confirming evidence can be obtained.

(U)

"Long-standing difficulties in applying the RV phenomena to intelligence applications are at least twofold. In a lengthy response, those elements of genuine | | significance must be identified a priori. Second, even excellent examples of remote viewing do not necessarily imply | | usefulness. Therefore, RV-derived data should be used in conjunction with information obtained through more conventional channels.

[　　　]

III APPROACH (U)

(U) SRI conducted a 26-hour RV experiment beginning at 1008 on August 24, 1988. The viewer provided data in four different work periods: at 1008 and 1500 on August 24, and at 0910 and 1120 on August 25. The details of the experiment are described below.

A. (U) Remote Viewer

SRI selected Viewer V372 to participate in this experiment because of his* 10-year experience as a viewer, and because he produced good results in the first experiment in this series, conducted in May, 1987.

B. (U) Target Material

The target was a microwave generating device being tested ————————————— . Included in the target material was the functional aspect ⟨　　　　　relationships among elements⟨　　　　　, and the elements themselves.

C. (U) Experiment Protocol

The SRI team was given the , name of the experiment, a time window during which the experiment would be active, and a photograph and Social Security number of an on-site individual. Other than this, all aspects and details of the experiment were withheld from V372 and SRI personnel.

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*(U) To keep the identify of the viewer confidential, we refer to the viewer with the pronouns *he* and *his* regardless of the viewer's gender.

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Four sessions were conducted to provide information. The times and circumstances were as follows:

(1) <u>1008 August 24</u> V372 was asked to describe the location and details of an event in progress. Details about pertinent personnel were also requested.

(2) <u>1500 August 24</u> V372 was asked to describe details and activity at the site demarked by the presence of the sponsor's on-site representative.

(3) <u>0910 August 25</u> V372 was asked to expand upon his descriptions from the previous day.

(4) <u>1120 August 25</u> V372 was asked consolidate the information from the previous scans and to provide his concluding remarks.

During each session, V372's responses were tape-recorded. He was encouraged to draw details whenever possible. Drawings are contained in Appendix A, and Appendix B contains verbatim transcripts of all four sessions. (Because of technical difficulties, most of the taped record of the second session was lost. Since the remaining data are intact and since the drawings from the remaining viewings are complete, this gap is not significant.)

After all raw data had been delivered to the sponsor, V372 and SRI personnel were allowed to visit the target site   for feedback.

D.   (U) Analysis Technique

As discussed in Section II, quantitative analysis in an intelligence setting poses problems. Any analysis of remote viewing data must be accomplished within the context of a mission statement. An analysis designed only to demonstrate RV is inadequate to enable an assessment, and vice versa. Under another program,[9] SRI developed a generalized analysis technique that allows for an a priori mission statement. An overview of that technique follows.

1. (U) Definitions

The most important aspect of RV data analysis is the definition of both the target and the RV response. For this analysis, all target and response information is defined as the fuzzy sets T and R, respectively. Each is described below.

The target is defined as a fuzzy set of target elements $T[e_k, \mu_k, w_k]$:

- e_k is an *element* of a target. For example, an element of the microwave generator target might be the concept of antenna efficiency.

- μ_k is the *membership value* of element e_k. It represents the degree to which e_k is present at the target. Antenna efficiency, for example, might have a membership value of 0.6, indicating that antenna efficiency is 60% of the target material. Determined subjectively, μ_k is always a value from 0 to 1.

- w_k is an arbitrary *weighting factor* for element e_k. This factor accounts for differing missions by assigning the importance of elements relative to each other. The energy aspect of the microwave generator is very important, for example, and might be assigned a weight of 5 when compared with power supplies, which might have a weight of 0.5.

The RV response is similarly defined as a fuzzy set of response elements $R[e_k, \mu_k, w_k]$. The membership values for response elements, however, have a somewhat different meaning than those for target elements. Membership values, μ_k, represent an analyst's assessment as to the degree of presence of e_k in the response. For declarative statements, $\mu_k = 1$ unless a viewer volunteers a specific or implied importance of e_k to the overall target. A degree of interpretation is allowed for nondeclarative statements by letting $\mu_k < 1$. The response weights, w_k, are identical to the target weights.

We define *accuracy* as the percent of *target* material described correctly by a response. Likewise, we define *reliability* (of a viewer) as the percent of a *response* that is correct. The figure of merit is the product of the two; to obtain a high figure of merit, a viewer's description of a target must be largely correct and contain few extraneous images. In

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fuzzy set terminology, these quantities for the *j*th target/response pair are as follows:

$$\text{Accuracy}_j = a_j = \frac{\sum_k w_k (R_j \cap T_j)_k}{\sum_k w_k T_{j,k}} \quad,$$

$$\text{Reliability}_j = r_j = \frac{\sum_k w_k (R_j \cap T_j)_k}{\sum_k w_k R_{j,k}} \quad,$$

and

$$\text{Figure of Merit}_j = M_j = a_j \times r_j \quad.$$

The sum over *k* is called the *sigma count* in fuzzy set terminology. The sigma count is defined as the sum of the membership values, μ, for the elements of the response, target, and their intersection—that is, R_j, T_j, and $(R_j \cap T_j)$, respectively.

2. (U) Target and Response Data

The universe of target and response elements is drawn from the August, 1988, experiment. We define three element categories: functions, relationships, and objects. These categories are weighted 1.0, 0.75, and 0.50, respectively.

(U) Table 1 shows the universe of target and response elements and the formal definition of T and R. All scans were considered together, rather than scan by scan. The various scaling weights are shown in parentheses adjacent to the appropriate factors. The relative weights are derived from SRI's best assessment of the operational utility of each element. The response membership values, $R(\mu)$, were determined from the raw data (see Appendices A and B). The target membership values, $T(\mu)$, were determined by SRI personnel during a site visit in September, 1988. All elements, however, were determined by an SRI analyst post hoc in order to allow a more accurate assessment of reliability. Elements derived from the response were taken literally. Those elements having no corresponding element in the target (i.e., $T(\mu) = 0$) were assigned the average weight of elements present in the target.

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Table 1

(U) UNIVERSE OF TARGET AND RESPONSE ELEMENTS

Element	w	$T(\mu)$	$R(\mu)$
Functions (1.0)			
High–power microwave production	5	1	0.8
EMI component testing	2	1	0.8
Destructive testing of electronics	2	1	1
Ground focal area	1.73	0	1
Testing a concept—debugging	1	0.3	1
Distributed for catching something evenly	1	1	1
Defensive function	1	1	1
Collecting data for later analysis	0.1	1	1
Relationships (0.75)			
Source enclosed in a trailer	5	1	0.7
People away from test site	4	1	1
Targets $\leq$ 1 km from source	3	1	0.5
Energy exit enclosure	3	1	1
Multiagency participation	2	1	0
Permanent building connected to temporary one	1.9	0	1
Two spherical mirrors connected together	1.9	0	1
Fibers outside edge	1.9	0	1
Large, semicircular shape with block	1.9	0	1
Multiple support trailers	1	1	0.3
Power generator, 50 m north	1	1	0
30–degree beam divergence	1	1	1
Horn–shape at end of 4×6–cm pipe	1	1	0.8
Inner and outer wrapping	1	0.2	1
Device is of "human" dimensions	0.5	1	1
Airstrip away from mountains	0.25	1	1

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Table 1, Continued

(U) UNIVERSE OF TARGET AND RESPONSE ELEMENTS

Element	w	T(μ)	R(μ)
Objects (0.50)			
Microwave generator (tubular 3 m)	5	1	0.7
Pulsed operation	4	1	1
Peak power ~200 MW	4	1	0.8
Extremely short duration	4	1	1
4×6–inch wave guides	3	1	0.8
Conic horn antenna	3	1	0.7
Frequency of 1 GHz	3	1	0
10–Angstrom wavelength	3	0.05	1
People optimizing device	3	1	1
Incoherent wave front	3	0.1	1
Lots of massive coils	3	1	1
Circuit boards as targets	3	1	1
Support ,vacuum equipment	2	1	0.6
Diagnostic E&M hardware	2	1	0.6
People collecting data	2	1	1
Magnification	2	1	1
Cavity	2	1	1
Double tower with antennae	1.74	0	1
Heating metal to vapor	1.74	0	1
Like spherical WWII mine	1.74	0	1
Buried sensors	1.74	0	1
Lots of ovals	1.74	0	1
Bunch of polished mirrors	1.74	0	1
Spokes from "clam" shape	1.74	0	1
Constant mirror tuning	1.74	0	1
Power supplies	1	1	0.6
Electrical/optical cables	1	1	1
Two–axle, white trailer for source	1	1	0.3
Optical digitizer	1	1	0
Tens of people	1	1	1
Changes of state	1	0.3	1
Molecular disintegration	1	0.2	1
Collector fibers	1	0.1	1
Three–step function in rapid succession	1	0.3	1
Uses large amount of energy	1	0.1	1
Capacitor storage	1	1	1
Tubes carrying fluid	1	1	1
Lifesaver–like objects	1	0.2	1
Plasma	1	0.1	1
Flat desert	0.5	1	1
Distant mountains	0.5	1	1
Hot	0.5	1	1
Dry	0.5	1	1
Starburst, lightening discharge	0.5	0.1	1
Death ray	0.5	0.1	1
Football–field–size area—open ended	0.5	0.6	1
Square block	0.5	0.1	1
Earthbound experiment	0.5	1	1

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IV RESULTS AND DISCUSSION (U)

Table 2 shows the figure-of-merit analysis for the experiment using the fuzzy sets defined in Table 1. The target was the microwave generator, support equipment, and testing environment. The target-response intersection is shown as $|T \cap R|$, and the sigma counts of the target and response sets are shown as $|T|$ and $|R|$, respectively. N is the number of elements that were identified for each category. All quantities include the relative weights shown in Table 1.

The weighted accuracy total of 0.80 (i.e., 80% of the identifiable elements at the target site were correctly described by V372) agrees well with the qualitative correspondence shown in Figures 1 and 2.* Figure 3 shows V372's drawing of a plan view of the target area, which appears to match the experimental situation almost exactly. The figures of merit show that, since the first experiment in this series, V372's ability to sense functions and objects has increased modestly, and his ability to sense relationships has increased by a factor of four. The relatively low value of 0.57 for the combined (weighted by the category weighting factors) target elements is consistent with the elaborate nature of V372's response (see the original response in Appendices A and B).

Table 2

FIGURE OF MERIT SUMMARY

Element Type	N	$|T \cap R|$	$|T|$	$|R|$	Acc.	Rel.	M
FUNCTIONS	8	10.00	11.40	12.43	0.88	0.80	0.70
RELATIONSHIPS	16	15.05	21.95	23.45	0.69	0.64	0.44
OBJECTS	48	46.20	56.70	72.92	0.82	0.63	0.52
TOTAL	72	–	–	–	0.80	0.65	0.52

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* (U) All figures are to be taken as indicators of qualitative correspondence. The drawings and photographs have been selected to illustrate the correspondence.

(DISPOSABLE?)
INNER WRAP
LESS DENSE

2'

BACK INTO
SOMETHING

OUTER WRAP
DENSE

BRILLIANT
CORE
MATERIAL

6X4CM

(PART B)

TRANS.

MEASURING
DEVICES.

REC

MEASUREMENTS OF:
→ SHOCK-WAVES
→ VELOCITIES
→ HEAT/TEMPERATURE.
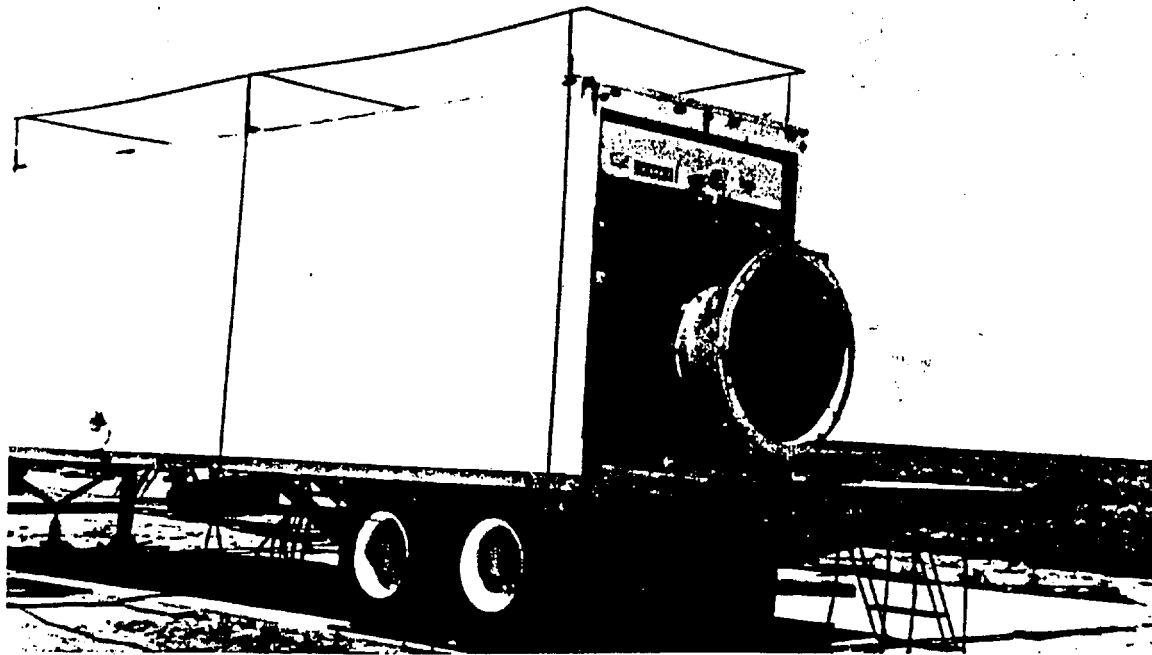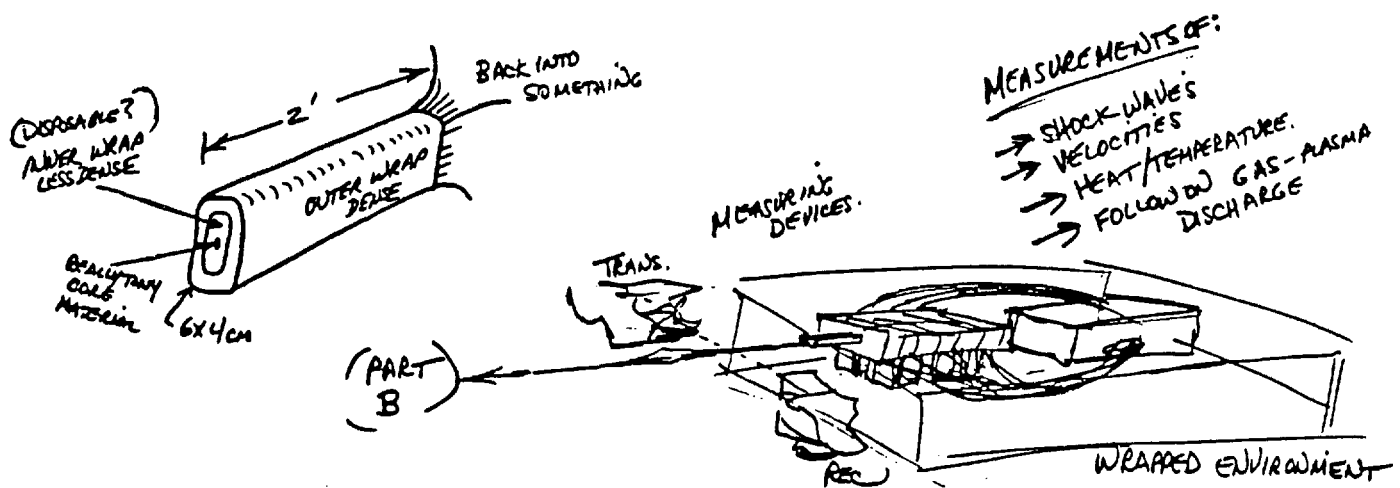→ FOLLOW ON GAS-PLASMA
→ DISCHARGE

WRAPPED ENVIRONMENT

FIGURE 1   VIEWER 372:   RESPONSE TO ENCLOSED MICROWAVE GENERATOR

- SOME KIND OF GRID.
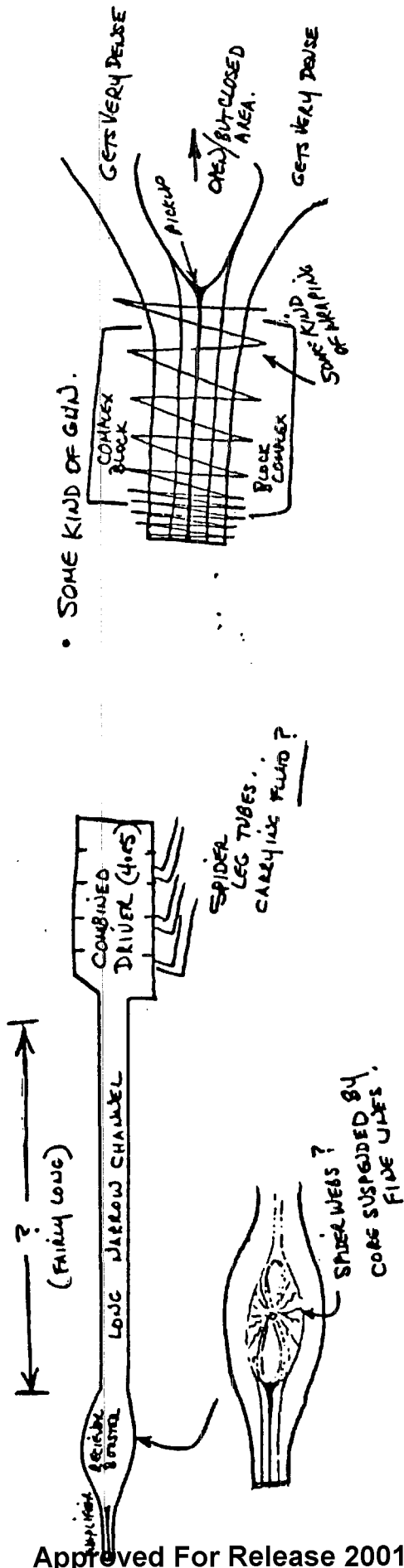
GETS VERY DENSE

PICKUP

OPEN/BUT-CLOSED AREA.

GETS VERY DENSE

CONVEX BLOCK

BLOCK CONVEX

SOME KIND OF HEAPING

COMBINED DRIVER (4.5)

SPIDER LEG TUBES. CARRYING FLUID?

LONG NARROW CHANNEL

(FAIRLY LONG)

SPIDER WEBS? CORDS SUSPENDED BY FINE WIRES.
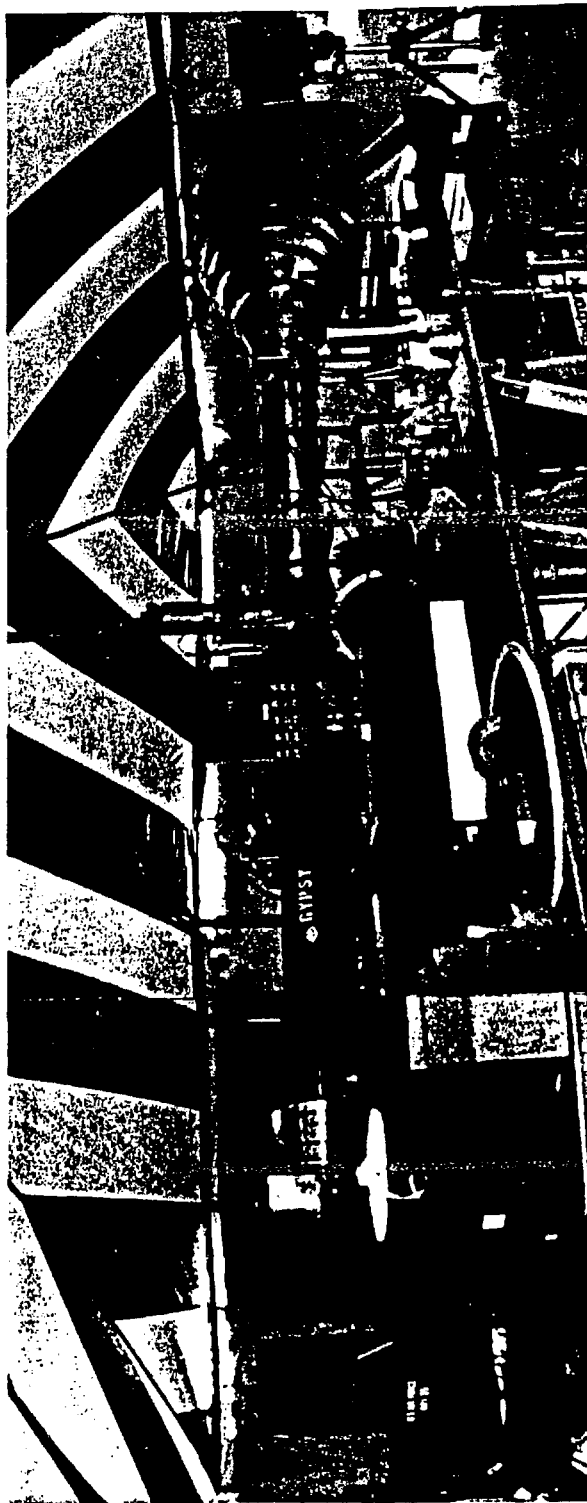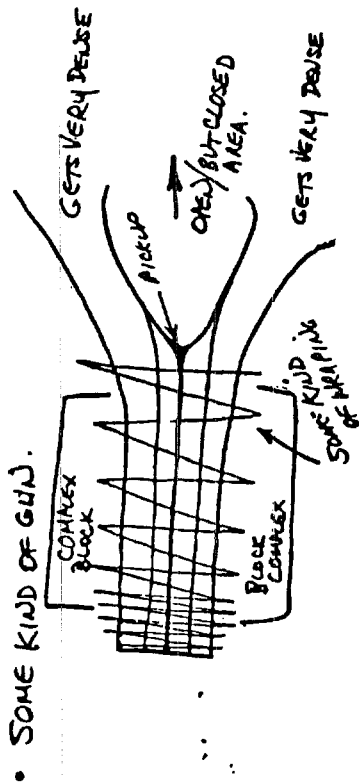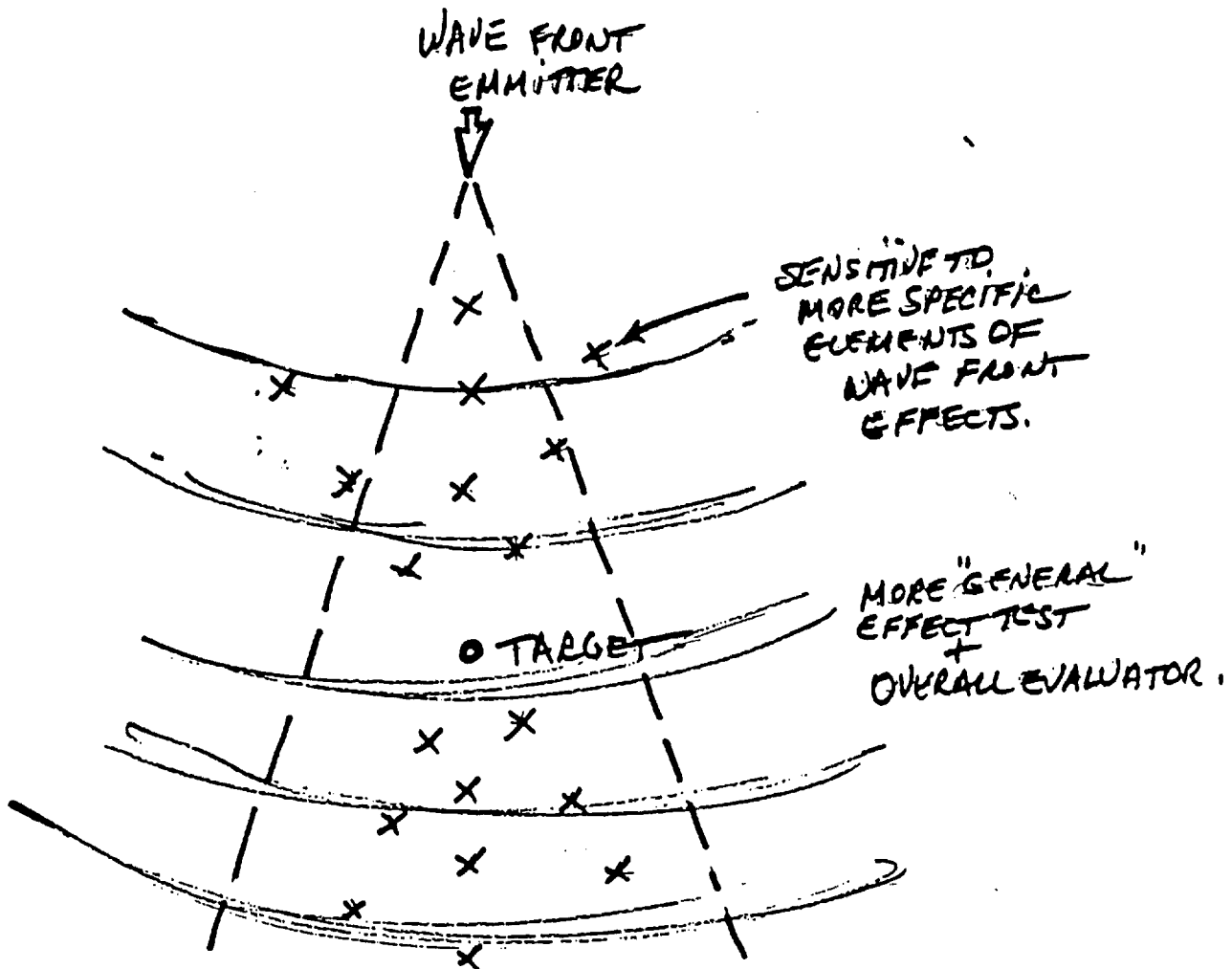

FIGURE 2 VIEWER 372: RESPONSE TO DETAILS OF THE GENERATOR

FIGURE 3   VIEWER 372: PLAN VIEW OF THE TARGET

Viewer 372 responded to the primary target with a single concept that was mostly correct, but with a significant number of incorrect elements. As can be seen in the response (Figures 1 through 3 and Appendix B), V372 recognized that the device is "some kind of gun" that emits a high-power, short-duration electromagnetic pulse. This description, however, is embedded in approximately 30% incorrect material (i.e., noise).

A persistent problem in [   ] RV is the boundary of the intended target location. The experiment was approximately 15 km south of the main runway at *THE AIR BASE* and 5 km west of an experimental solar energy collection facility. Also in the area were electromagnetic pulse evaluation stations with their associated large antennae. In the formal analysis of this experiment, all data were considered a response to the intended target.

It is tempting, however, to identify certain elements of V372's data as responses to the solar collection facility. Such post hoc assessment is always risky, but in this case the qualitative correspondence is quite striking. For example, on page B-7 of the transcript, V372 recognizes ". . . a bunch of mirrors, some kind of polished metal mirrors . . ." but is unable to recognize two distinctly different high-technology areas. This two-fold theme is intermingled throughout the response. Figures 4 and 5 show the correspondence of some of these response elements to the nearby solar collection facility.

The access road to the Prancer experiment passes directly adjacent to the solar facility. During the feedback phase of the experiment, V372 and the experiment team were fascinated with this complex and stopped for a moment on the way to the [   ] experimental area. The degree to which distracting elements (unrelated to the target) affects the data is a current research topic.

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- GROUND FOCAL AREA.
- SPECIFICALLY LAID OUT FOR "CATCHING" SOMETHING" EVERY"

- MARKED WITH ROMAN OR GREEK LETTERS.
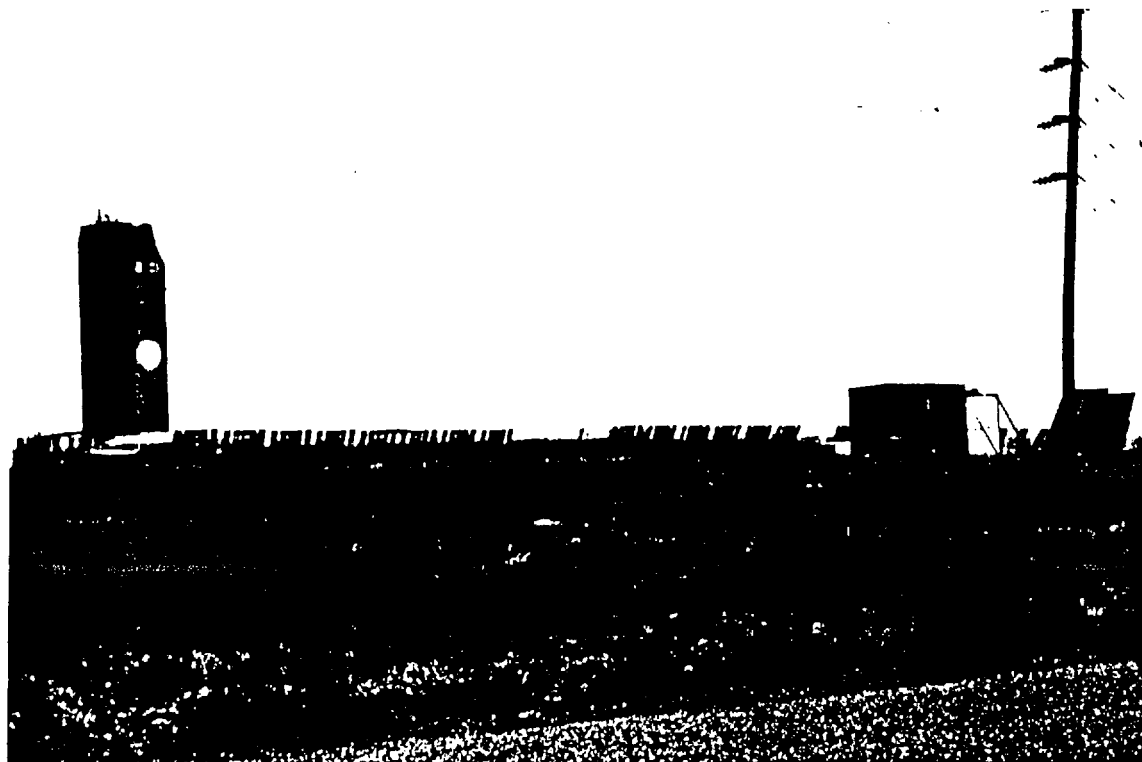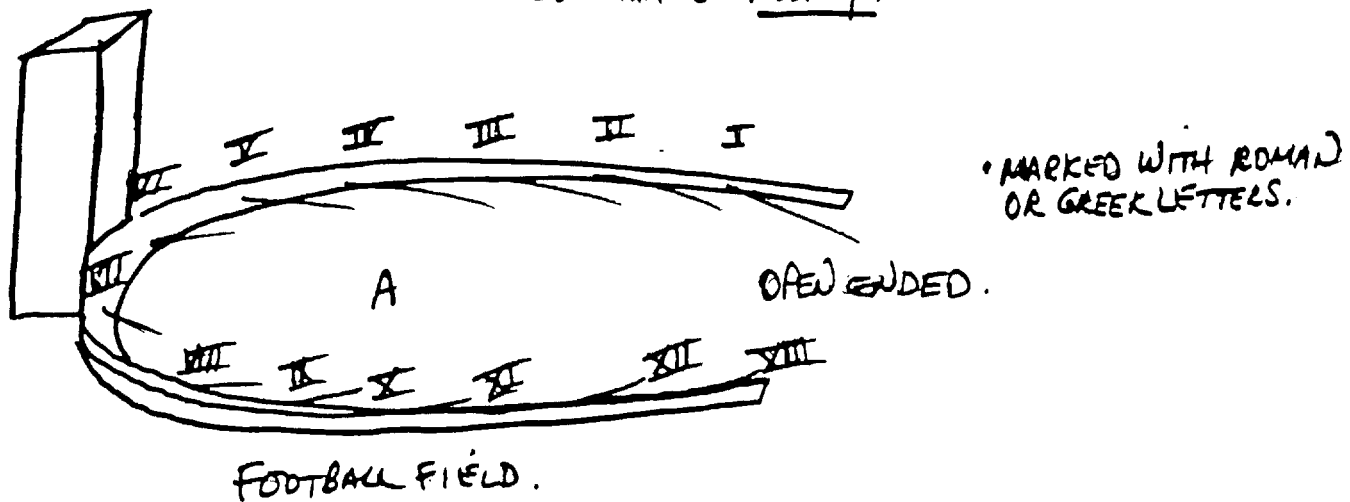
OPEN ENDED.

FOOTBALL FIELD.

FIGURE 4   VIEWER 372:   POSSIBLE RESPONSE TO THE SOLAR FACILITY

Key pullout & very hard metal.

VIEW FROM TOP OF TOP HALF

CREASES

SEE 3RD DRAWING

LIFESAVER LIKE OBJECTS.
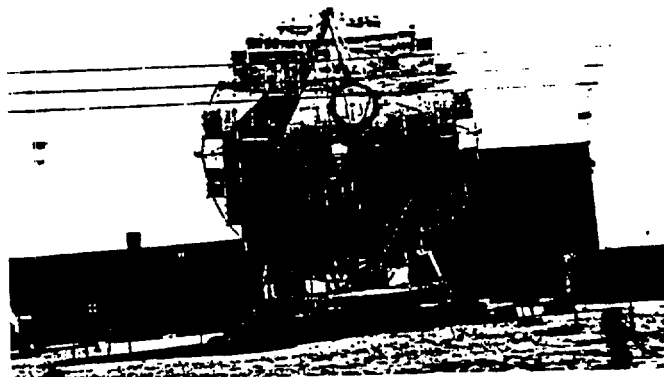
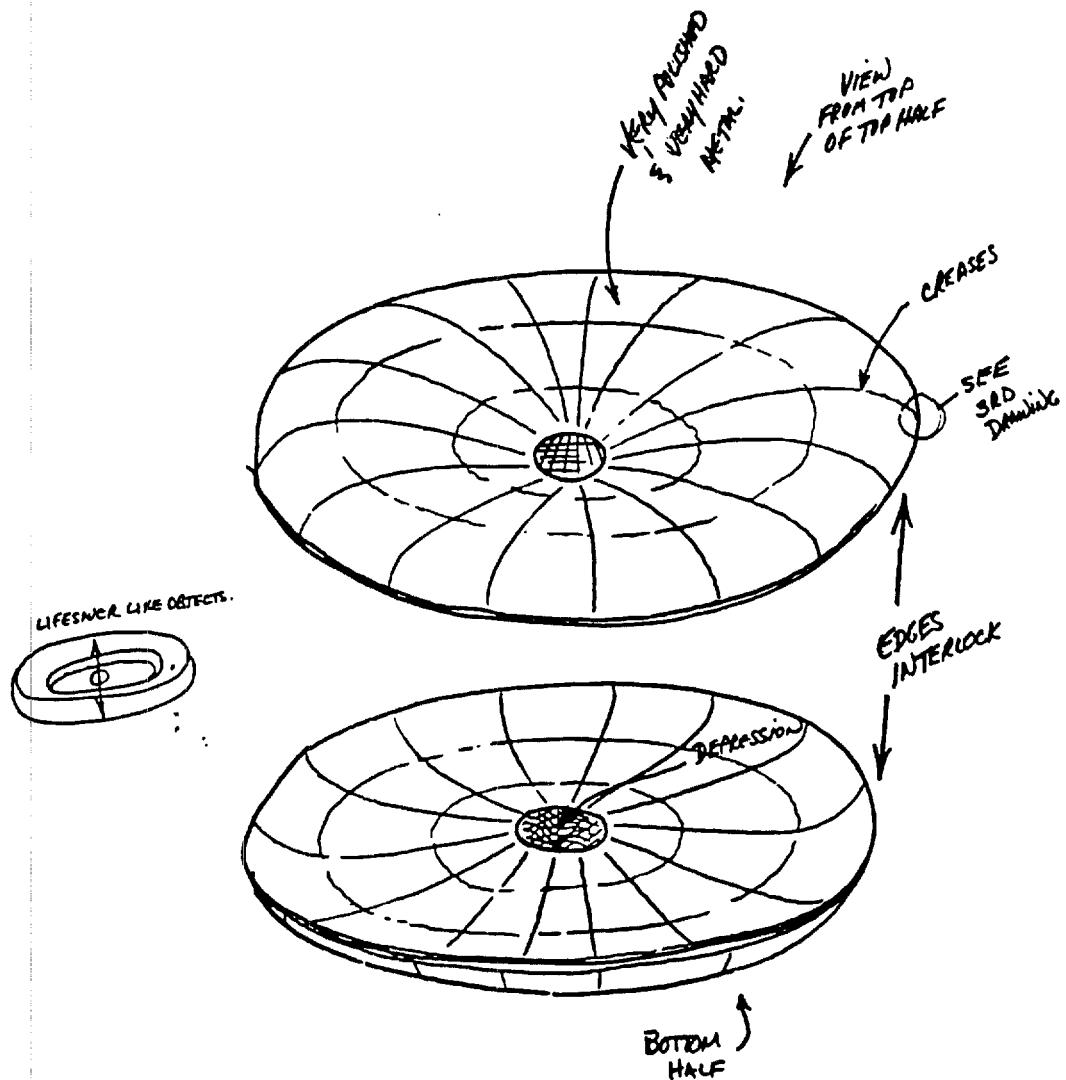EDGES INTERLOCK

DEPRESSION

BOTTOM HALF

FIGURE 5   VIEWER 372: RESPONSE DETAILS TO THE SOLAR FACILITY

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After SRI personnel had been debriefed about the target, a second long-term participant, V009, was asked to view the same event. He was told to provide whatever information he could about an event that had taken place approximately two weeks earlier. Viewer V009 was told nothing else about the nature of the target or target event, and he worked without an RV monitor.

Since this was an ad hoc test, not intended to be part of the series, we have not conducted a formal analysis of V009's response. Qualitatively, however, V009 appeared to do as well as V372, given that he remained in session, unmonitored, for only 20 minutes. Figure 6 shows one part of his drawing response that captures V009's theme. Interestingly, V009 also appeared to be confused by the multitude of potential target material in the immediate area. He drew an airport and recognized that it was not the intended target.

17

cylinder

tie down

hoist from here.
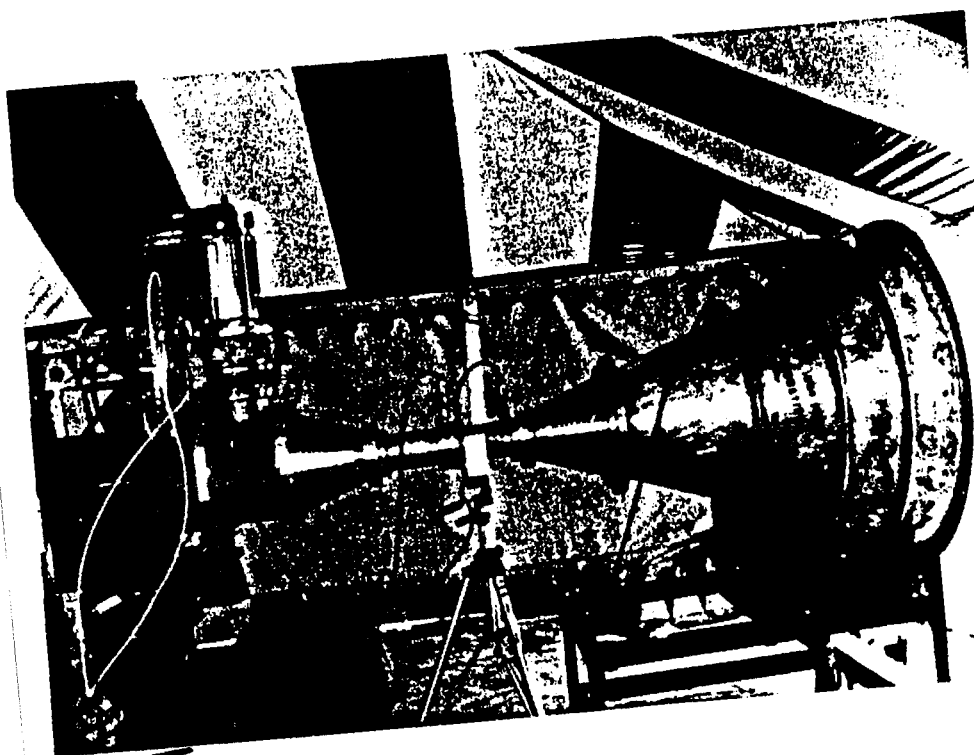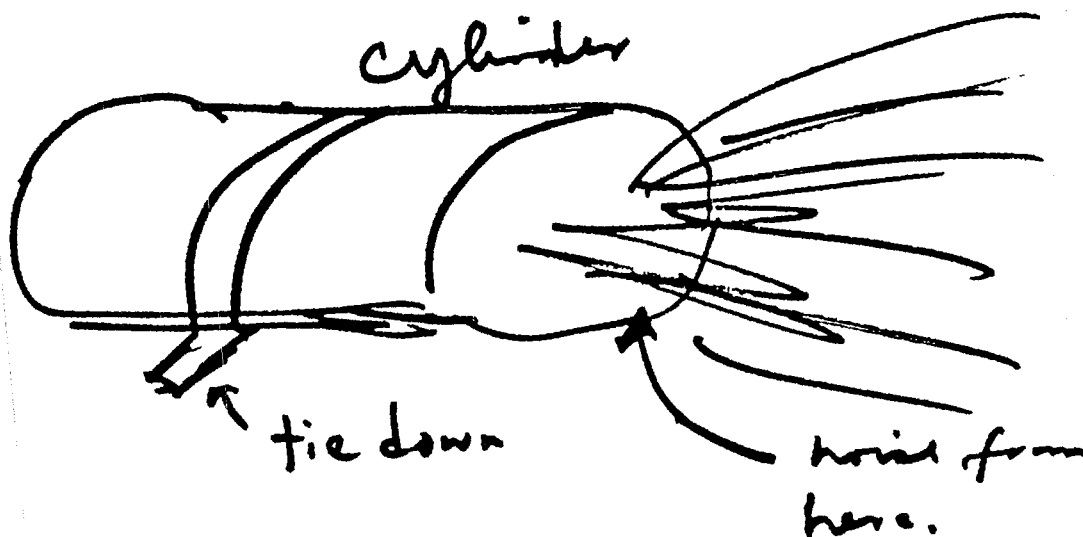
FIGURE 6   VIEWER 009: POSSIBLE RESPONSE TO THE GENERATOR

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V CONCLUSIONS (U)

(Viewer V372 was asked to use RV to describe the activity of Project ▌   'during August 24 and 25, 1988. He described approximately 80% of the identifiable target elements correctly, and 71% of his responses corresponded with the intended target. Although 29% noise remains, if this experiment had been an actual▌   'activity, the noise probably would not have been a significant distracting factor.

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Final Report

April 1988

AN APPLICATION ORIENTED REMOTE VIEWING
EXPERIMENT (U)

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Final Report
Covering the Period 1 May 1987 to April 1988

April 198

AN APPLICATION ORIENTED REMOTE VIEWING EXPERIMENT (U)

SRI Project 8339

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LIST OF FIGURES (U)

LIST OF TABLES (U)

I OBJECTIVE (U)

The objectives of this experiment were to:

- Demonstrate the potential of a novel   —collection
  technique, known as remote viewing

- Determine the degree to which a specific analysis technique
  is applicable.

1

II BACKGROUND (U)

(U) Since 1972, SRI International has been investigating remote viewing (RV)—an apparent human ability to gain access, by mental means alone, to information that is secured by shielding, distance, or time.[1-5]* At least three elements are necessary to conduct an RV experiment:

(1) An individual, called a viewer, with an RV ability,

(2) Specific target material (not available to the viewer at the time of the experiment), and

(3) An analysis technique to determine the degree to which RV occurred.

In a typical protocol, a viewer and a monitor—an interviewer who is also unaware of the target material—are sequestered at time T_0. At $T_0 + 5$ minutes, an assistant selects the intended target by accessing a large pool of potential targets (e.g., a list of locations within a half-hour drive from the laboratory) using a random procedure. At $T_0 + 30$ minutes, the assistant is positioned at the selected site and, back at the laboratory, the viewing begins. At $T_0 + 45$ minutes, the viewing ends and the assistant returns to the laboratory. To provide feedback, the viewer, monitor, and the assistant, return to the selected site and review the RV data.

(U) To determine if RV occurred, a number of similar experiments are conducted using a newly selected target for each trial. Usually, the trials are done with target replacement (i.e., each target is returned to the pool and may be selected again by the random process). Since 1972, many procedures have been developed to determine whether information has been obtained beyond chance expectation.[6-8] In the current method,[9] the targets and responses are described as fuzzy sets of descriptor elements (e.g., water is present). An RV figure of merit is related to the normalized intersection of the target set and the response set.

/ U)

When RV is applied ⸻ the analysis procedures vary considerably. In laboratory experiments, much is known about the target, but in ⸻ applications very little target information is known. Thus, the analysis technique must be modified in

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*(U)   References may be found at the end of this report.

2

order to assess the "correct" RV response elements before confirming evidence can be obtained.

We were asked [   ] to participate in an experiment conducted during May, 1987 [of Lawrence Livermore National Laboratory] using the advanced test accelerator (ATA). The primary objectives were to demonstrate remote viewing [   ] and to apply fuzzy set technology in the analysis of the data. SRI's activity occurred over a 24-hour period beginning at 0800 on May 7, 1987.

III METHOD OF APPROACH (U)

(U) SRI conducted a 27-hour RV experiment beginning at 0800 on May 7, 1987. The viewer provided data in four different work periods spaced at 8-hour intervals. The details of the experiment are described below.

A.   (U) Selection of a Remote Viewer

SRI selected Viewer V372 to participate in this experiment because of his/her 10-year experience as a viewer. In 1979, V372 was calibrated at SRI as part of a "technology" transfer investigation and found to possess an RV ability.[10] Since then, V372 has participated in approximately 300 RVs. Since SRI does not have access to most of those data, we conducted a second calibration series, as part of another program, during FY 1986.

In the 1986 calibration series, the target material was sites within a half-hour drive from SRI. A protocol was used that was similar to the one described above, and a total of 12 RV sessions were conducted over two weeks. Remote viewing results of the series were found to be statistically significant and Figure 1 shows one of the three most successful sessions. It is beyond the scope of this report to describe this calibration series in detail, but the two-other successful responses were of the same quality as shown in Figure 1.

B.   (U) Target Material

The primary target was the ATA facility. In particular, the accelerator itself was targeted during operation with an external beam.

target's

[   ] We have also identified targets of lesser interest in the environment. We have designated a wind-power electric generator farm at Altamont Pass but adjacent to [*primary target area*] as a secondary target, and the *target's* main complex, which is farther away geographically but is functionally associated with [   ] as a tertiary target.

the primary target area

The intent of this RV experiment was to obtain as much information as possible about the target environment in general and ATA external beam operation in particular.

C.   (U) Experiment Protocol

Viewer 372 and a viewing monitor were aware that the target material was of [   ] significance and was located within the greater San Francisco Bay area. They were told that an individual [   ] described by name and Social Security number was in the target area during the viewing sessions, and that two members of the SRI staff (known to V372 and the monitor) would serve as a "beacon" and would be at the specific target of interest between 2200 hours on May 7 and 0800 hours on May 8, 1987. (The purpose of the "beacon" person is to define the target area. Our past experience has shown that viewers rarely describe the experiences of the "beacon.") Other than this, all aspects and details of the experiment were withheld from V372 and the monitor.

The San Francisco Bay Area is rich in [   ] target possibilities. For example, there are many aerospace companies, semiconductor manufacturing facilities, particle accelerators (e.g., Lawrence Berkeley Laboratory complex, Stanford Linear Accelerator), radar installations, military air fields, and Naval bases. Thus it was felt *technical* that to have the viewer know that the target was of [ ] interest and was in the greater Bay Area would not compromise the experiment.

[   ] Four sessions were conducted to provide information at approximately 8-hour intervals during May 7, 1987. The time and circumstances are as follows:

(1) 0800 May 7—V372 was asked to describe the geographical area, and the gestalt of the area of interest. He/she was

6

also asked to provide as much detail as possible in real time (i.e., at 0835), and was targeted upon the sponsor's on-site representative. At this time, the representative was sleeping (approximately 2 miles from ⌐ ¬ after having been awake the entire previous night. the target location

(2) 1010 May 7--V372 was asked to describe details and activity at the site designated by the sponsor's on-site representative as of 0000 hours May 7 (the previous night).

(3) 1600 May 7--V372 was asked to describe details and activity in real time at the site designated by the sponsor's on-site representative. At this time, this individual was eating dinner (approximately 2 miles from ⌐ ¬ the target location

(4) 2400 May 7--V372 was asked to describe details and activity at the site designated by two SRI personnel in real time.

During each session, V372's responses were tape recorded and he/she was encouraged to draw details whenever possible. Drawings are contained in Appendix A, and Appendix B contains verbatim transcripts of the last two sessions and portions of the first two. (Because of technical difficulties, most of the taped record of the first two viewings was lost. Since the remaining data are intact and since the drawings from the first two viewings are complete, this gap is not significant.)

D. (U) Analysis Technique

As discussed in Section II, quantitative analysis _ poses problems. Any analysis of remote viewing data must be accomplished within the context of a mission statement. A system that is designed to demonstrate remote viewing is inadequate to enable an _____ assessment and *vice versa*. A generalized analysis system that allows for a defined *a priori* mission statement has been developed under another program,[9] and a brief overview of it follows.

1. (U) Definitions

The most important aspect of any RV data analysis is the definition of the target and the RV response. For this experiment, the target is defined as a fuzzy set of target elements $T[e_k, \mu_k, w_k]$. The kth element, e_k, in the set is defined by its membership value, μ_k, on the

7

closed interval [0,1]. The μ_k always represents the degree to which e_k is present at the target. For example, suppose that the target is the ATA facility, and the target element under consideration is the concept of "testing shielding effectiveness." Its membership value, which is determined subjectively, is 0.2 indicating that only 20% of that concept applies to this target. To allow for differing missions, w_k is an arbitrary weighting factor. A simulation requires that certain elements be more important than others. For example, the -energy aspect is very important and is assigned a weight of 5 compared to a cooling tower with a weight of 0.5.

The RV response is similarly defined as a fuzzy set of response elements $R[e_k, \mu_k, w_k]$. The membership values for response elements, however, have a somewhat different meaning than those for target elements. The μ_k represent the analyst's assessment as to the degree of presence (on the closed interval [0,1]) of e_k in the response. For declarative statements, $\mu_k = 1$ unless V372 volunteers a specific or implied importance to the overall target. A degree of interpretation is allowed for non-declarative statements by letting $\mu_k < 1$. The response w_k are identical to the target w_k. For the purpose of analysis, all target and response information is defined as the fuzzy sets T and R, respectively.

We have defined Accuracy as the percent of the *target* material that was described correctly by a response. Likewise, we have defined Reliability (of the viewer) as the percent of the *response* that was correct. The FM is the product of the two; to obtain a high FM, a viewer has to describe a large portion of the target material correctly in as parsimonious a way as possible. In fuzzy set terminology, these quantities for the jth target/response pair are as follows:

$$\text{Accuracy}_j = a_j = \frac{\sum_k W_k (R_j \cap T_j)_k}{\sum_k W_k T_{j,k}} \quad ,$$

$$\text{Reliability}_j = r_j = \frac{\sum_k W_k (R_j \cap T_j)_k}{\sum_k W_k R_{j,k}} \quad ,$$

and

$$\text{Figure of Merit}_j = M_j = a_j \times r_j \quad .$$

The sum over k is called the sigma count in fuzzy set terminology, and is defined as the sum of the membership values, μ, for the elements of the response, target, or their intersection—i.e., R_j, T_j, and $(R_j \cap T_j)$, respectively.

2. (U) Target and Response Data

The universe of target/response elements are drawn from the May 7, 1987, ATA experiment. We have defined three element categories; functions, relationships, and objects. These categories are used to guide the weighting factors (i.e., the default weights are 1.0, 0.50, and 0.25, respectively), and are used as multipliers of the relative weights to form the w_k.

(U) With such a complex response, a number of options are available for analysis. Rather than analyzing the data scan by scan, all scans were considered together to provide the response input to the universe of elements.

(U) Table 1 shows the universe of target/response elements and the formal definition of T and R. The various scaling weights are shown in parentheses adjacent to the appropriate factors. The relative weights are derived from SRI's best assessment of the operational utility of each element. The response membership values, $R(\mu)$, were determined from the raw data (see Appendices A and B). The target membership values $T(\mu)$, were determined by SRI personnel prior to the start of the experiment. A few elements, however,

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(U)

were determined by an SRI analyst on a *post hoc* basis in order to allow for a more accurate assessment of reliability.

Table 1

(U) UNIVERSE OF TARGET/RESPONSE ELEMENTS

Element	w	$T(\mu)$	$R(\mu)$
PRIMARY ELEMENTS (1.0)			
Functions (1.0)			
ᵃ energy	5	1	0.9
Electron accelerator	3	1	1
Operation in air	3	1	1
Test experiment	2	1	1
High intensity electron beam production	2	1	1
Problems related to vacuum/air	2	1	1
Destructive beam that dissipates quickly in air	1	1	1
Beam ionizes air	1	1	0.6
Two experiments: one local, one not	1	1	1
Calibration exercises	1	1	0.4
Testing penetration power in air	0.5	0.8	1
Emulation for a much larger scale device	0.5	0.5	1
Ultimate aim is to destroy missile parts	0.5	0.5	1
Testing shielding effectiveness	0.5	0.2	1
Electronics survivability testing	1	0	1
Testing new form of laser	1	0	1
Operation in space	1	0	1
Satellite detection is difficult	1	0	1
Nuclear production of electrons to excite new laser	1	0	1
Output results from nuclear process	1	0	1
Controlled explosion	1	0	1
Laser output in microwave	1	0	1
Relationships (0.75)			
Power source above beam line	0.75	1	0
Linear array of buildings	0.75	1	0.1
Tunnel under buildings	0.75	1	0.5
One-story buildings	0.75	1	0.3
Curvilinear beam line	0.75	1	0.2
Electrons flow through beam line	0.75	1	0.7
Test equipment both sides of target building	0.75	0.5	1
E&M radiation < 10 Angstroms	0.75	0.1	1
Ignition at core of sphere	0.75	0	1
Energy radiates out and is reflected back into sphere	0.75	0	1
15-foot diameter sphere	0.75	0	1
Pipes into and out of sphere	0.75	0	1

10

Table 1, Continued

(U) UNIVERSE OF TARGET/RESPONSE ELEMENTS

Element	w	T(μ)	R(μ)
PRIMARY ELEMENTS (1.0), continued			
Objects (0.5)			
External electron beam	2.5	1	0
Very dangerous to humans	2.5	1	1
Atmosphere "glows" when operating	2.5	1	1
Multiple teams of people	2	1	1
E&M radiation	1	1	1
High security area	1	1	1
Beam visible in air	1	1	1
Electron injector	1	1	0.5
Tunnel	1	1	1
Electric power	0.5	1	1
Control room	0.5	1	0
Monitoring equipment	0.5	1	1
Piping	0.5	1	0.7
Vacuum	0.5	1	1
ATA facility (buildings)	0.5	1	0.4
Shielding	0.5	1	1
Power substation	0.5	1	0.2
Cooling towers	0.5	1	0
Massive door	0.5	1	0
External piping	0.5	1	0
Laser	0.5	1	1
Control computer	0.5	1	0.9
Electron beam	0.5	1	1
Timing is critical	0.5	1	1
Hard target	0.5	0.4	1
Loud noise	0.5	0.3	1
Wave guide	0.5	0.2	1
Free electron laser (not operating)	0.3	1	0.2
Coherent wave	0.3	0.3	1
Roads	0.1	1	1
Two events	0.1	0.5	1
Film presentation	0.1	0.1	0.5
Hollow polished (internal) sphere	0.5	0	1
Bundled metal rods	0.5	0	1

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Table 1, Continued

(U) UNIVERSE OF TARGET/RESPONSE ELEMENTS

| Element	w	T(μ)	R(μ)
SECONDARY ELEMENTS (0.50)			
Functions (1.0)			
Wind–power electricity generation	2.5	1	0.9
Relationships (0.75)			
Poles scattered in hills	0.75	1	1
Poles connected in a grid	1.13	1	1
Objects (0.5)			
Foothills	0.25	1	1
Electrical grid	0.25	1	1
Rotating blades	0.25	1	0.8
Multiple wind generators	0.25	1	1
TERTIARY ELEMENTS (0.25)			
Functions (1.0)			
Multipurpose laboratory complex	1.3	1	0.8
Six–story administration building	1	1	1
Relationships (0.75)			
T–shaped, six–story building	0.6	1	1
Round–topped building just east of tall building	0.2	1	0.4
Swimming pool north and east of tall building	0.2	1	0
Large parking lot just west of tall building	0.2	1	1
Linear array of trees adjacent to parking lot	0.2	1	1
Larage, segmented, one–story building complex 0.5 mile north of tall building	0.2	1	0.2
Main roads bordering complex	0.2	1	1
City to west of complex	0.2	1	1
Main entrance at west of complex	0.2	1	0.7
Laboratory is two miles from city	0.2	1	1
City is north of laboratory	0.2	0.5	1
Air field is southeast of laboratory	0.2	1	0.6
Mountains surround laboratory	0.2	0.6	1
Freeway is north of laboratory	0.2	1	1
Objects (0.5)			
Tall building	0.3	1	1
Parking lot	0.1	1	1
Linear array of trees	0.1	1	1
Road	0.1	1	1
Many buildings	0.1	1	1
Main entrance	0.1	1	1
Building with cylindrical shaped roof	0.1	1	0.4
Air field	0.1	1	1
Flat valley	0.05	1	1
Mountains	0.05	1	1
Large mountain	0.1	0	1

12

IV RESULTS AND DISCUSSION (U)

Table 2 shows the figure of merit analysis for the ATA experiment using the fuzzy sets defined in Table 1. The target/response intersection is shown as $|T \cap R|$, and the sigma-count of the target and response sets are shown as $|T|$ and $|R|$, respectively. All quantities include the full weights shown in Table 1. The primary target was the ATA external electron beam experiment. The secondary target was the adjacent wind-power generation farm, and the tertiary target was the laboratory complex and surrounding area. Viewed as separate targets, the figures of merit of 0.94 and 0.81 for the wind-power farm and the complex respectively are in good agreement with the qualitative correspondence shown in Figures 2 and 3. Figure 4 shows additional data on the tertiary target viewing compared to a map of the area. These figures represent data obtained during the 0800 scan and are consistent with the tasking and location of the beacon person (see page 6). The relatively lower value of 0.56 for the primary target is also consistent for the "scattered" nature of the response (see the original transcript in Appendix B). The combined value of 0.61 reflects the weighting factor in favor of the primary target.

Table 2

(S/NF) FIGURE OF MERIT (FM) SUMMARY

Target Type		$|T \cap R|$	$|T|$	$|R|$	Acc.	Rel.	FM
PRIMARY	Function	20.50	22.00	29.50	0.93	0.69	0.65
	Relation	1.80	4.95	5.85	0.36	0.31	0.11
	Object	16.86	23.00	19.21	0.73	0.88	0.64
	Total	39.16	49.95	54.56	0.78	0.72	0.56
SECONDARY	Total	5.08	5.08	5.38	0.94	1.00	0.94
TERTIARY	Total	5.48	6.42	5.76	0.85	0.95	0.81
TOTAL		49.72	61.45	65.70	0.81	0.76	0.61

13

CPYRGHT
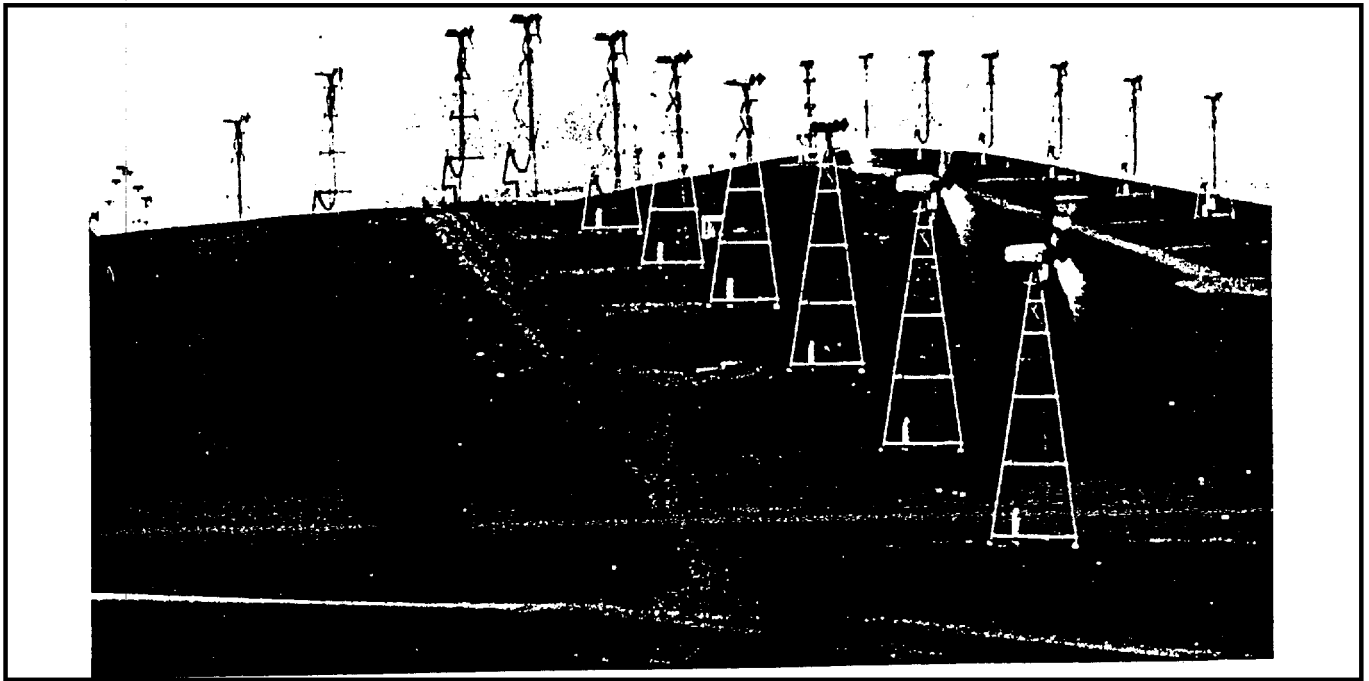
I.D. 372

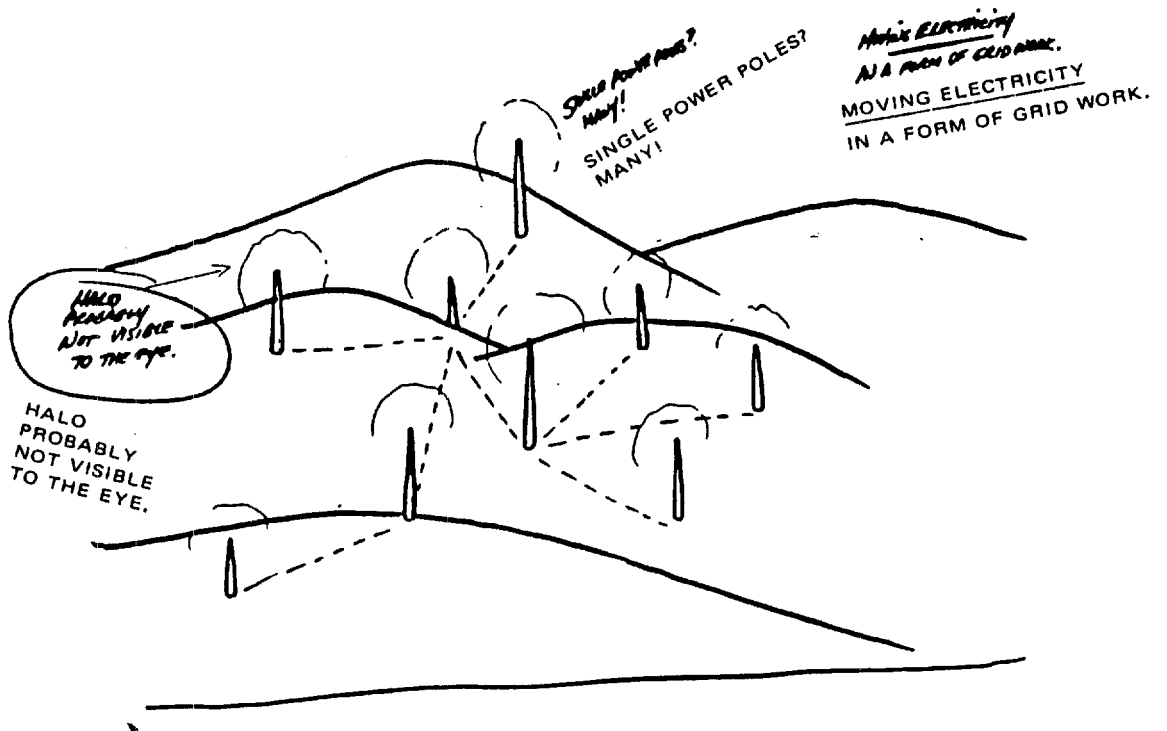FIGURE 2   (U) PART OF THE 0800 RESPONSE COMPARED WITH PHOTOGRAPH OF THE ALTAMONT WIND–POWER ELECTRIC GENERATION FARM
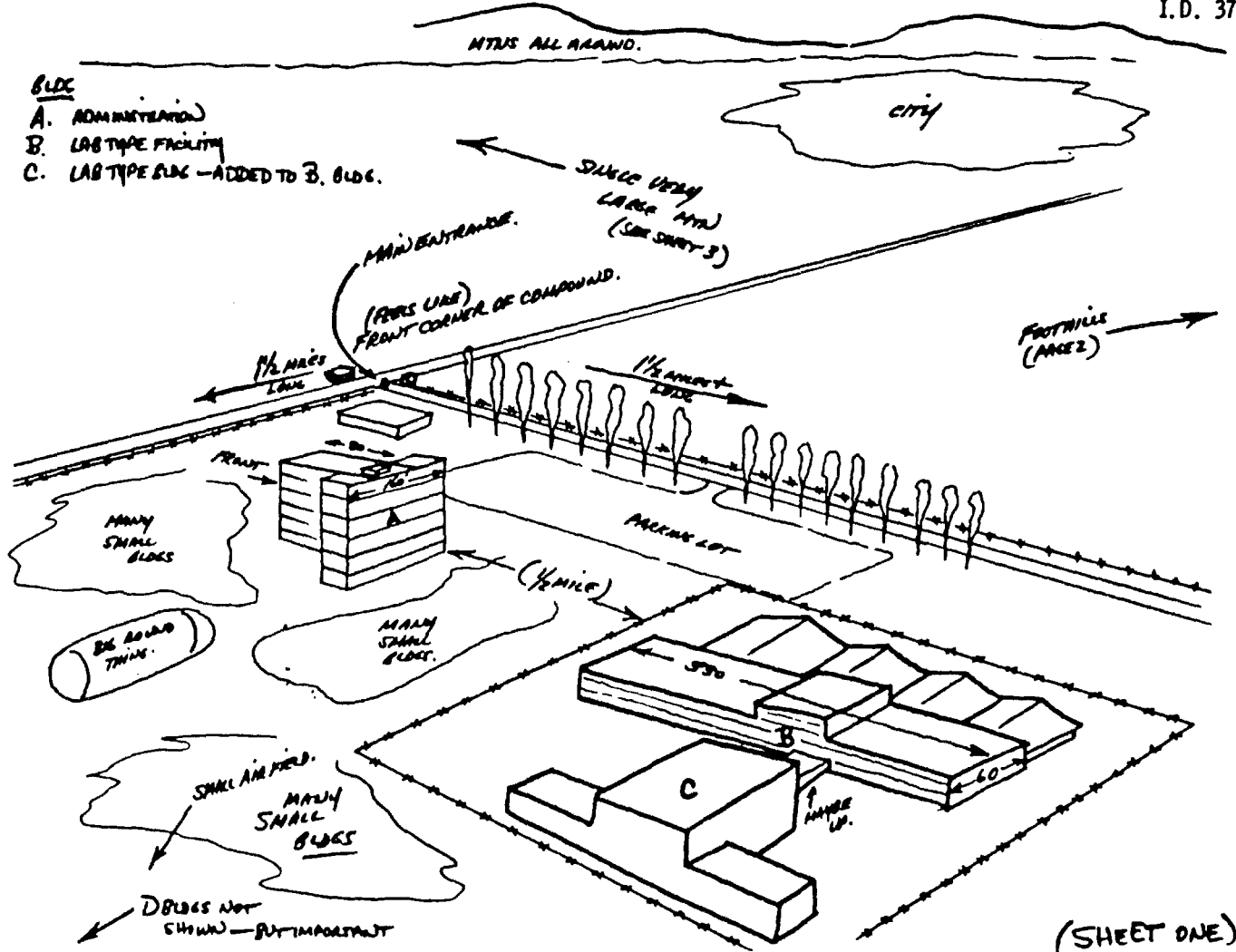
14

I.D. 372

MTNS ALL AROUND.

BLDG
A. ADMINISTRATION
B. LAB TYPE FACILITY
C. LAB TYPE BLDG —ADDED TO B. BLDG.

CITY

SINGLE VERY
LARGE MTN
(SEE SHEET 3)

MAIN ENTRANCE.

(FENCE LINE)
FRONT CORNER OF COMPOUND.

FOOTHILLS
(PAGE 2)

1½ MILES
LONG

1½ MILE+
LONG

MANY
SMALL
BLDGS

FRONT

PARKING LOT

(¼ MILE)

BIG ROUND
THING.

MANY
SMALL
BLDGS.

A

350

B

LO

SMALL AIR FIELD.

MANY
SMALL
BLDGS

C

MARBLE
UP.

D BLDGS NOT
SHOWN —BUT IMPORTANT

(SHEET ONE)

laboratory

FIGURE 3   (U)   PART OF THE 0800 RESPONSE COMPARED TO THE WEST GATE OF

(SHEET 3)

I.D. 372

STREET MAP OF
LIVERMORE — PLEASANTON

16

APPROX. DISTANCE 2 MILES

1½ MILES
(PROBABLY LITTLE LARGER.)

LARGE MTN.

LAB
ORCHARD

AIRFIELD

MTNS

PANCAKE VALLEY

MTNS

N

W   E

S
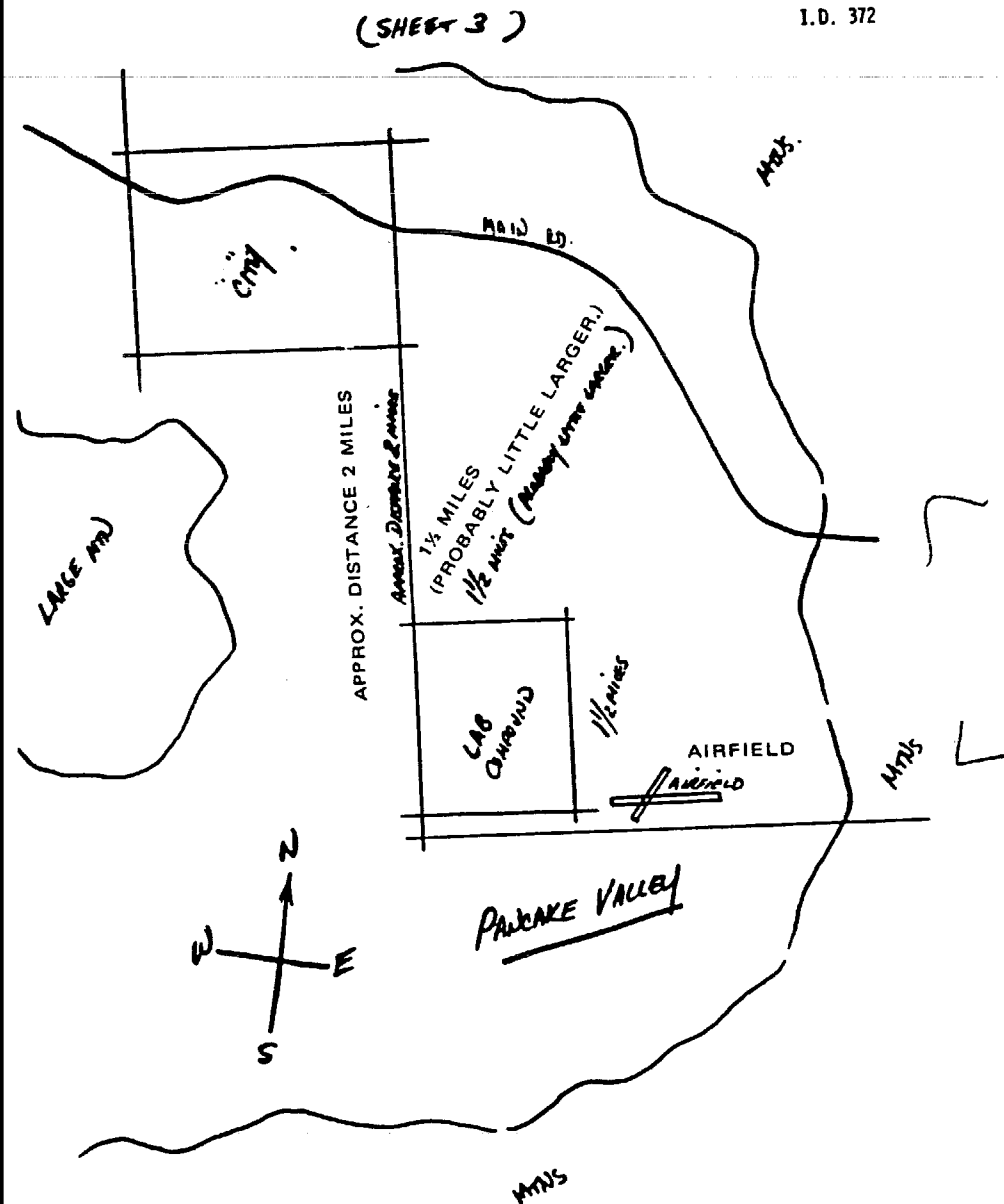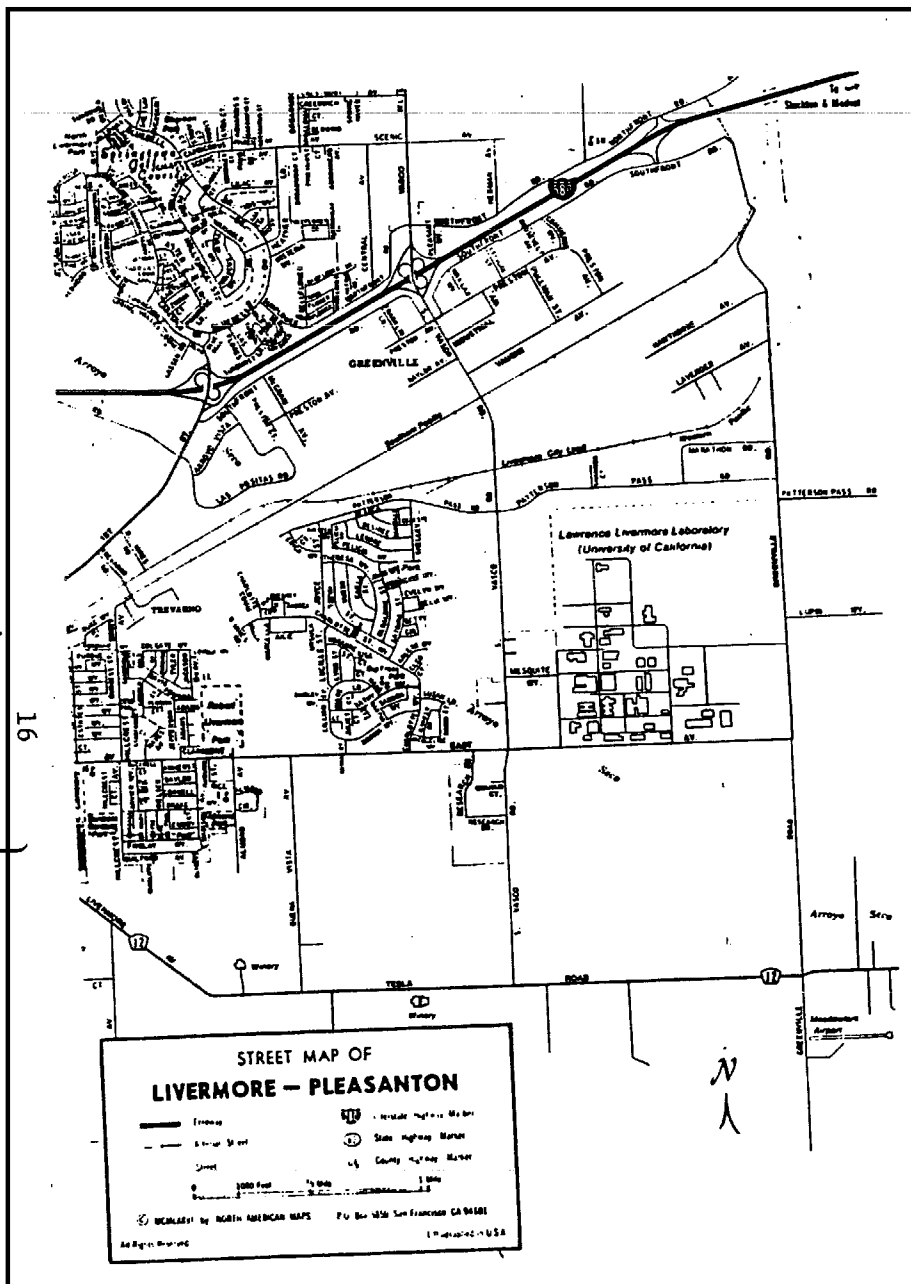
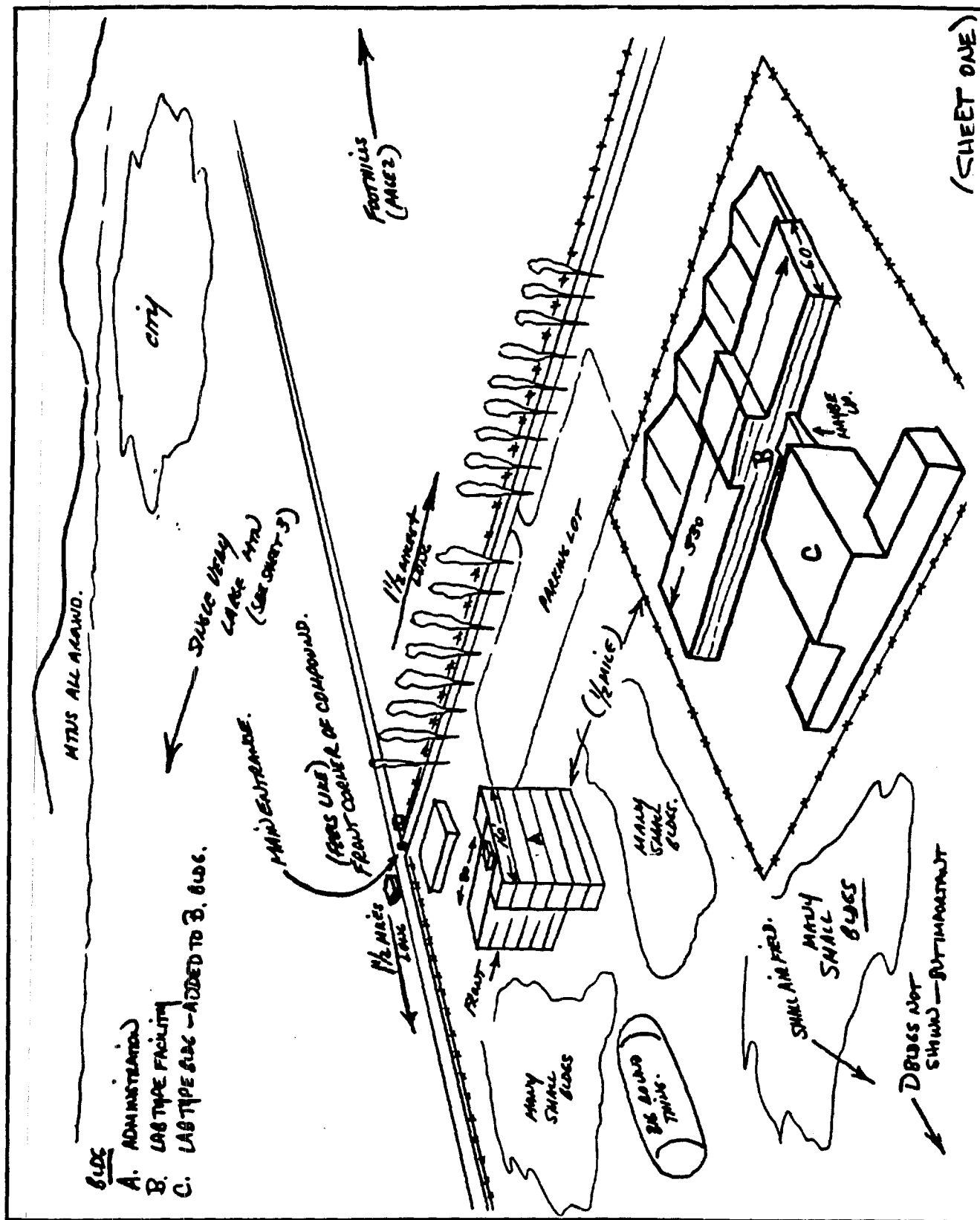FIGURE 4   (U) PART OF THE U.S.G.S. MAP COMPARED WITH A MAP OF THE LIVERMORE AREA

Viewer 372 responded with a single concept to the primary target that was incorrect; it contained, however, many individual elements that were correct. One aspect of RV responses that has been a recurring theme is that a surprise element (to the viewer) frequently indicates correct information about the site. In this experiment, the following sentence is embedded in a lot of incorrect data (see page B-18 of the 2400 scan in the transcript, Appendix B):
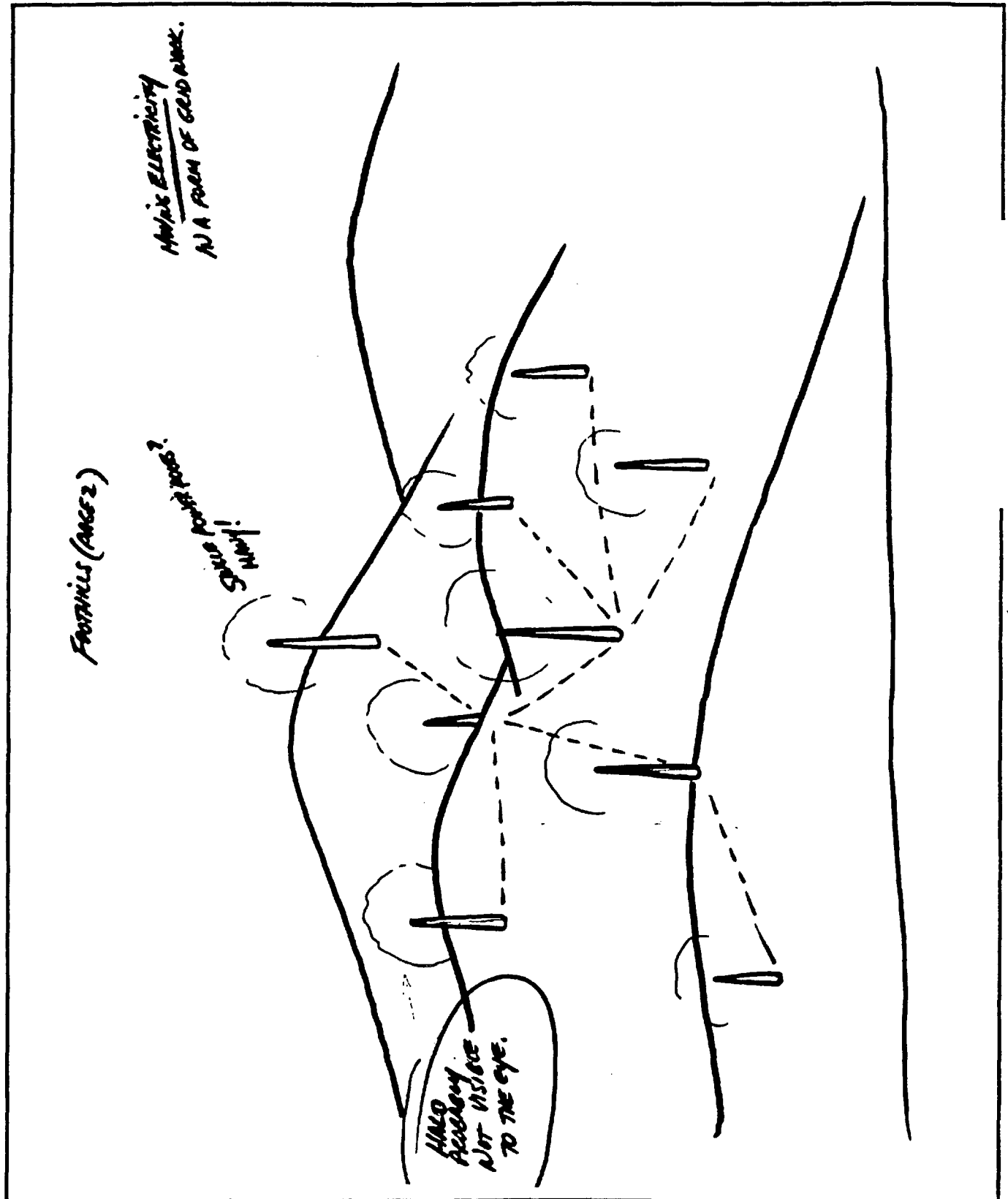
> "What I keep wanting to do, is I keep wanting to put the whole thing into an apparatus that captures electrons and accelerates them."
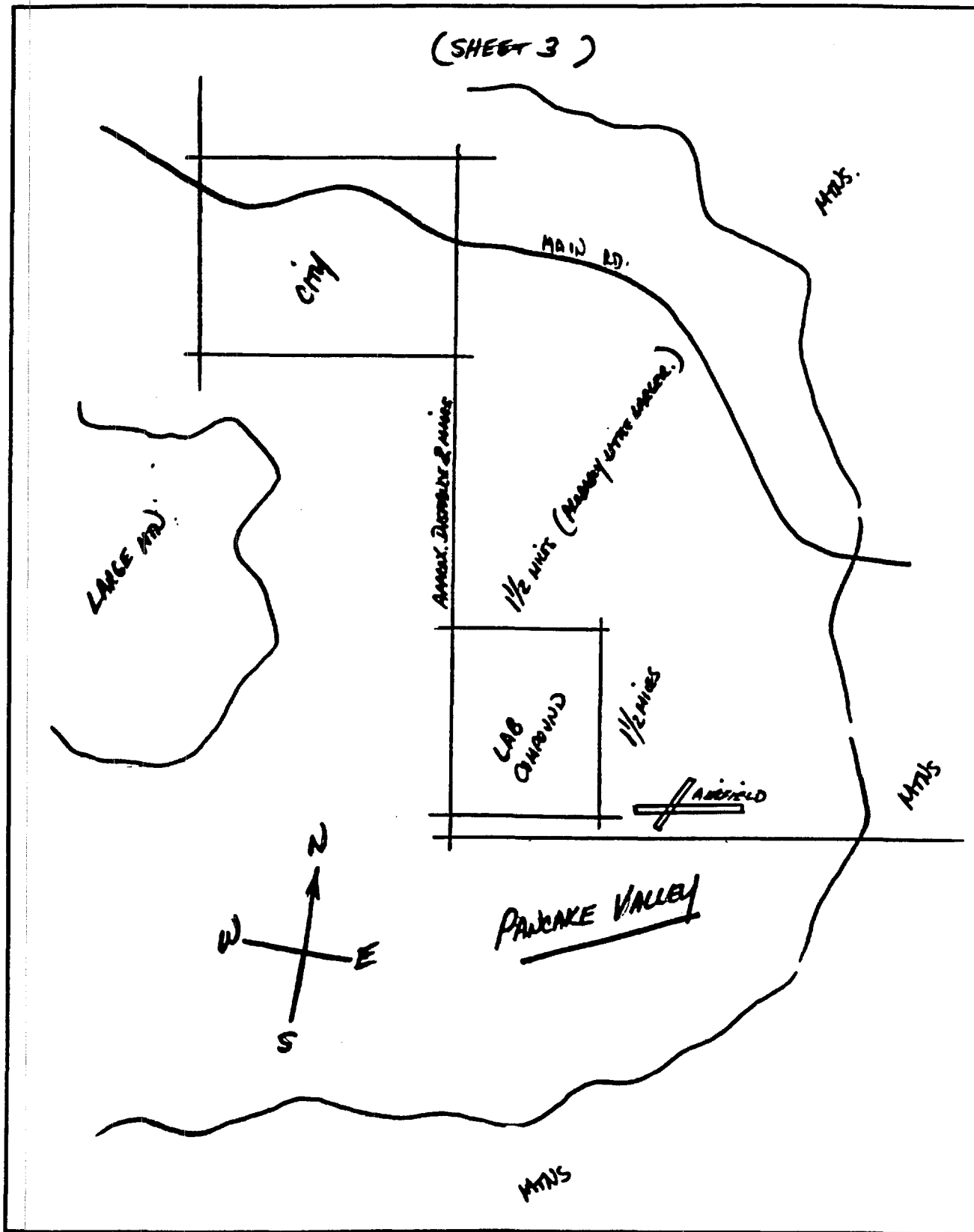
This sentence appears in a general discussion of a "Star Trek" phaser system initiated by controlled nuclear explosions, and represents a significant cognitive surprise. It is important to determine whether or not this type of linguistic surprise might serve as a reliability indicator.

Long-standing difficulties in applying the RV phenomena to applications are at least twofold. In a lengthy response, those elements of genuine   significance must be identified *a priori*. Second, even excellent examples of remote viewing do not necessarily imply   usefulness. As an example of the latter, consider the response to the Altamont pass wind-power generation farm. It is an excellent example of remote viewing, but it is not of value.

In summary, V372's response to the ATA experiment has mixed results. Even though there are excellent examples of remote viewing, the   value is mixed. It does not appear to be the case that V372 simply responded with everything he/she knows about technical material. This viewer has been involved with all kinds of technical activity in past careers. Yet, hidden among a significant amount of incorrect data, lies a nearly complete description of the external electron beam and details of the ATA experiment of May 7, 1987.

17

(SHEET 3)

MTNS.

MAIN RD.

CITY

LARGE MTN.

Approx. Distance 2 Miles

1½ Units (Mainly Under Ground.)

LAB COMPOUND

1½ Miles

AIRFIELD

MTNS

N

W ─── E

S

PANCAKE VALLEY

MTNS

(SHEET 4.)

BLDG A.

6 possibly 7 stories
Horizontal lines at each floor
Row of circles somewhere.
Administrative
Heads of departments.
Temporary — exploratory lab theory done there.
"T" Shape = top of "T" is 160FT long / sides of "T" are 80FT."

BLDG B.

Mostly 3 stories
Center section above 3 stories.
330FT long x 60FT wide
Center section (may not be drawn right) 45' x 95'
Its hollow = whole bldg all open inside, except for (floor?) of
center of bldg — possibly raised.
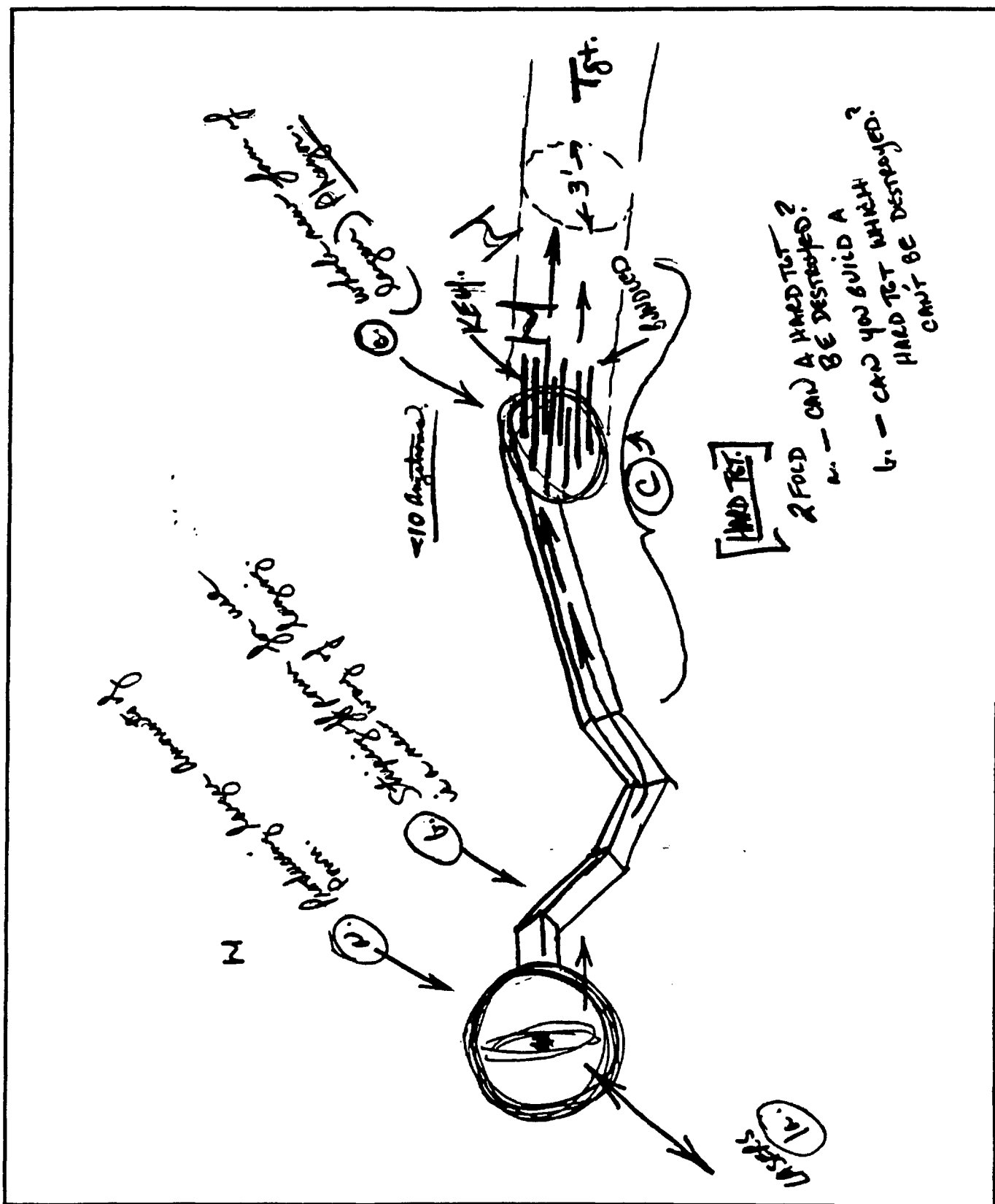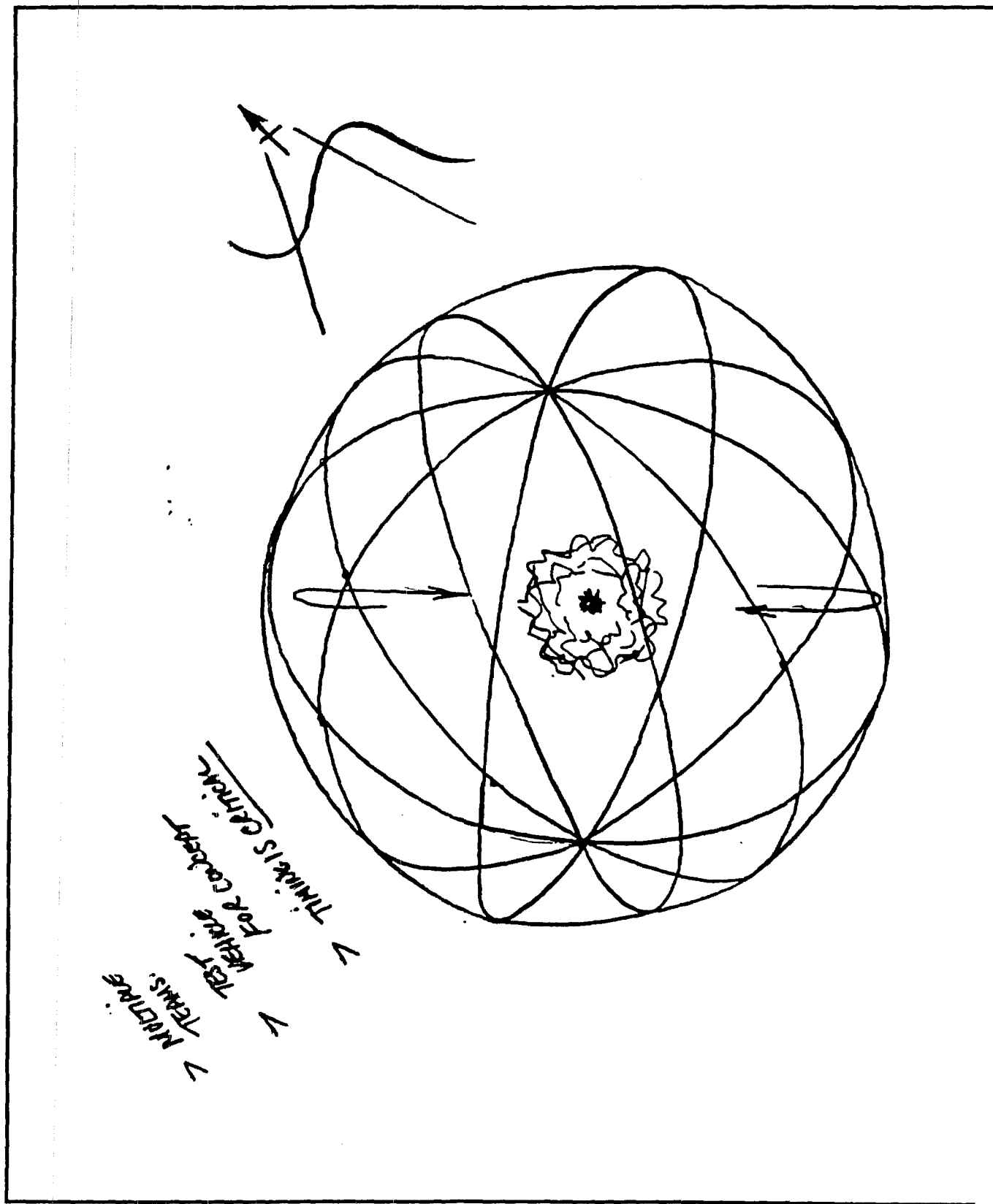Direct connection to "C" bldg. — thats (off?) ground.

BLDG C.

Very large / heavy / block house feeling.
Also many terminus of event location.
Also very brand new compared to B or A bldg.
Feeling that event is not as "fixed" "absolute" "real" (short lived) but of
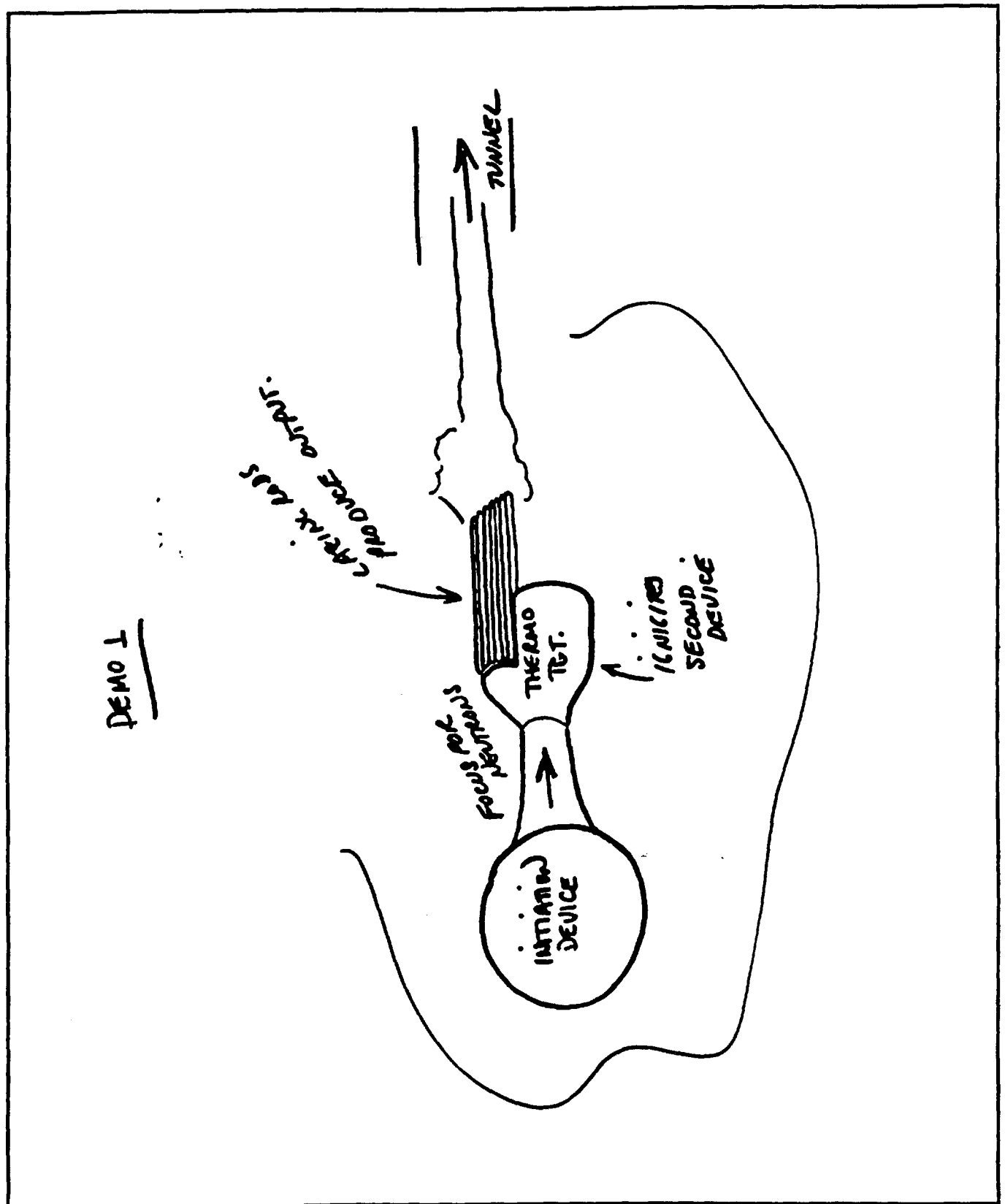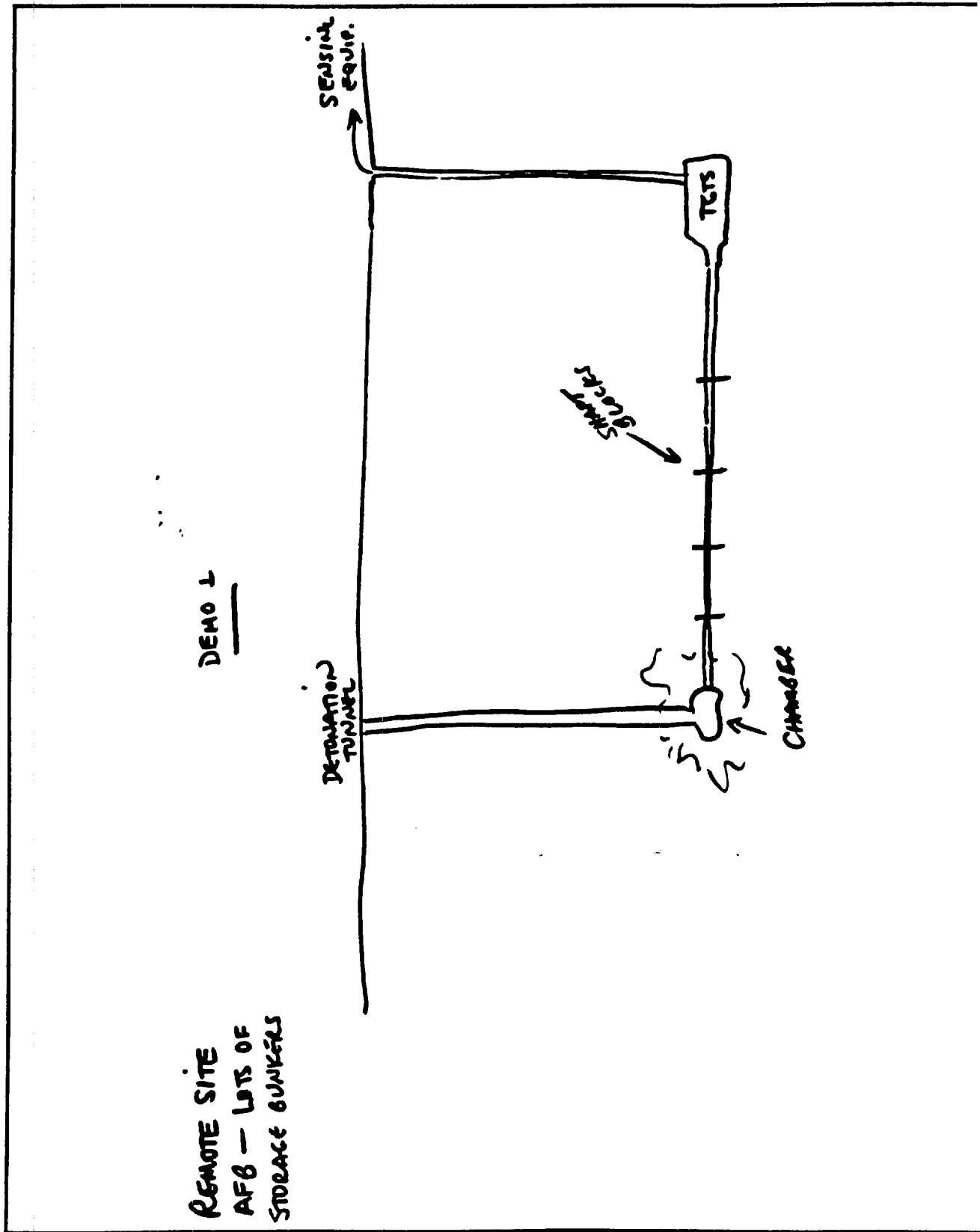great magnitude in terms of both data and output.

BUILDINGS D.

Origin of / birthplace of actual event in lab buildings.
Have feelings — somehow linked to a vast computer complex.
Large # cruncher (not specific part of event — but vastly interesting of
its own accord.)

A. — DISPENSER
B. — LASERS (1D + 1)
C. — DONUT HELIX
    (SPANS CONTROLLED EXPLOSION)
D. — COLLECTOR & FOCUSER
    TOWARD "D" BLDG.
E. — OTHER COLLECTORS.

APPROX. 15' DIAMETER.

A-6

DEMO ⊥

REMOTE SITE
AFB — LOTS OF
STORAGE BUNKERS

DETONATION TUNNEL

SEISMIC EQUIP.

TCTS

SENSORS

CHAMBER

APPENDIX B (U)

Remote Viewing Response (Transcript)

May 1987

(This Appendix is |

SESSION 1, 8:35 a.m. (U)

May, 1987 (U)

M: [   ] Just to reiterate what was said earlier, we do have extensive photos and information about the site currently locked up in the COTR's safe. The name of the person who is acting as a beacon at this point in time is XXXXXX. He is a Physicist. He is on the site and he has been there since 8:00 this morning and will be there for a period of time. This first session is a real time session. We are going to be doing 4 total sessions. We will be doing one at 4:00 this afternoon and one at midnight. Between now and 4:00 this afternoon there will be another one that will be a retrocognitive one to midnight of last night.

(S/NF) Now, to start off, we are first of all interested in the geographical area, we are interested in the gestalt of the area, what is the area like. We are interested in the manmade sorts of things in the area. And then we are going to focus in on items of interest in as much detail as possible. What's the function of the place and what's happening. And, what is the difference between what's happening now and what's happening later. That will be kind of a summary thing we'll do at midnight tonight. But generally anything of specific interest at this particular point in time in terms of the activity

V: This time?

M: Right now. Yep.

V: OK, what

M: So anytime you're ready to start, why...are there any other questions?

V: No. What I'm gonna do is

M: Just prepare yourself, cause I know you had a rough night.

V: So, what I'm gonna do is, I'm gonna probably sketch everything lightly in pencil.

M: OK.

V: An then I will ink it in afterwords.

B-2

M: OK.

V: Because I do more accurate drawing in pencil than I do in ink.

M: OK, let me get you a pencil then.

V: I have one.

M: Oh, OK. (They both speak at once here and it is garbled.) We gotta be precise in our detail here. So we can take as long as we want, there is no time limit on what we're doing. But we will try to bring some closure to each one of the four sessions.

V: OK. Some kind of a general layout here, I guess. This is a very light pencil. I brought a Stephen King book if you get bored. We'll start with something real dynamic like a line that we'll call a road. Uh, that doesn't feel right. You got an eraser somewhere? (M get eraser.) Thanks. A road, parking area, building. There seems to be, uh, there seems to be, is that running?

M: Um, hum.

V: There seems to be, um, a whole lot more buildings than I'm drawing. But what I'm trying to do, is I'm trying to draw buildings that are meaningful.

M: Um, hum.

V: Versus buildings that are useless. By useless I mean that there is probably a million buildings here which have a desk and typical...this office, that office type of arrangement. (Could not make out what he said after this.)

M: So, do you mean that what you're drawing here are buildings that are important to the function that we're after here?

V: Exactly.

M: OK.

V: And, uh, in trying to do this, I'm trying to put it in...(tape cuts out - it's about 99 on the counter)

SESSION 2, 10:10 a.m. (U)

May, 1987 (U)

M: ( ) , OK, it's about 10 minutes after, 12 minutes after 10.

V: ( ) Right.

M: ( ) May 7. And what we're about to do now is the retrocog...retrocognition part of the outbound experiment that we're working on, and that involves going back to 12:00 last night, midnight, May 6 and giving a description of what was happening at this site at that time that is of special interest to us during this targeting period.

V: ( ) OK. There's a really distinct different feeling, uh, in the initial session we were targeting the general layout onto the (tape cuts out here, in 30's on counter)

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SESSION 3, 4:00 p.m. (U)

May 7, 1987 (U)

M: [   ] So, disregard what you did this morning, in terms of trying to add to it

V:) OK.

M: } And focus on the activity and what expands out from that.

V:) OK.

M: } Allright.

V:) (Lots of silence) Hmmmmm. Getting an impression of, uh, really loud, loud noise like a like a bull-horn on a intercom-type of speaker system. Somebody's talking through it. There's an and that uh, there's an echo like its in a large day type of area. There is uh...uh...I'm trying to think of a way of describing this perception. I'm looking at a very long box. Uh, square tube box, uh, it's uh, let me think about this a minute It's really an interesting thing - I can't, uh, I can't quite fasten it to anything. It's kind of like a. It doesn't start out straight - it starts out funny, ah, weird, it starts out - it's got a joint system and then it goes straight...it does something like this. But this, there's something wrong with this. I feel like I'm trying to describe in detail something that's very esoteric. It's, uh, it's, this thing's squared - it has squared corners and edges and what not.

M: [   ] Um-hum.

V:) Uh, very much like a wave guide-type of thing.

M:) Um-hum.

V: } And, it has something flowing through it.

M:) I see.

V: } That's something flowing through it that's, uh, not a very lengthy wave form. It's like a very short wave form. It's guided through this thing and it, and it, comes down at the end of this thing and washes across like a row of, like, uh, I want to say that there's a spiral at the end like. And there's like a row of, of things sticking out at the end of this spiral. They, they're densely packed.

And they're like thick wire - real thick wire - only they're not wire. It's, it's some kind of like special alloy or special metal or special something. They're fixed but they're bunched. And they're all generally pointing in the same direction and, uh, this stuff comes down and washes around or over and through this. And when it hits the tips of these things, it, uh, it does the same thing that a laser does. It excites, it excites these, these metal rods. But they don't, uh, it's not like glass tubes in a laser - these are not like gas-filled tubes or have the big thing that blows stuff in and sucks things out, you know, the gas exchange where you're exciting a whole bunch of, uh, electrons or something like that...

M: Yeah.

V: But these are like electrons coming down this, this tube and they they're washing across this little batch of wire.

M: It's a particle beam in other words of some sort.

V: Yeah. But that's not correct - it's more I wouldn't call it a particle beam - it's, it's, these rods are then emitting a really short wave-type of output. A really short wave thing. A we're talking a wave form that, that it is super, super short.

M: Um-hum.

V: Uh, it's a ray, OK, some kind of a ray. But it's a real short wave. Shorter wave than a microwave. A microwave is pretty short short wave. This is shorter. I don't even know what microwave is. Microwave is (couldn't get word here). I can't remember - this is even shorter, this is real short wave stuff. We're talking about, I don't know in angstroms, we're talking something less than 10 angstroms. Which is real short. That would be less than, less than 10 angstroms probably. Anyway, it bunches together and what happens is you get this, this coherency coming out the end, this coherent wave front, if you will, and it actually, it actually, uh, I get the feeling like this is a inside of a tube.

M: OK.

V: This whole thing is compressed inside of a tube. And the tube is a vacuum or as near a vacuum as you can get. And it extends outward to, uh, to a target place.

M: Do you have any feeling for scale on that?

V: Large.

M: Room size, or bigger?

V: No, but the tube is probably something on the order of, uh, uh, I'll say 3 feet in diameter. It's really interesting because I, I see the tube there but then sometimes I don't see the tube. I see it operating in an aeroplace space and then I sometimes see it operating in air which is real interesting. What happens when it operates in air is the air molecules actually burn up. It super heats the air molecules, they actually self-destruct or excite themselves out of the way or something.

M: Um-hum.

V: And, and I get the feeling that I, you can actually see it with your eyes. This ray, when this thing comes out in air molecules. It's like it doesn't shoot out of the end in a race along to the target it's like the whole thing past the ray slowly comes in the beam. It's like it appears, you know, this entire length of it here appears like its super heating the air molecules that it's going through to the point that they actually white-out in some way.

M: Um-hum.

V: And down on the other end is the target and, uh, I'm trying to determine what that target thing is. I'm gonna do a better picture on page two.

M: OK.

V: I see this in a vacuum sometimes, and I see it also going through specialized gases like, like they're testing to see its penetration power through different gaseous mixtures ah different mixtures of oxygen or atmosphere or something. And, uh, I also get, I get the feeling like the target's hard – it, it's like of a hard target. And, and, by that I mean like metal – it's a metallic target, uh, varying degrees of thickness, shielding, and, uh, parts of the target being tested are covered with solid state electronics, chip electronics, uh, it's like pointing it at your home computers to see if you could burn your home computer up and then putting your home computer at a varying or differing modalities of shielding to see what effect it has on its capacity to operate. Um, I, I get the feeling like this is really, this thing is really hazardous to human life.

M: Um.

V: I mean I wouldn't stand in front of this sucker. This is, this is really I mean, it will really damage a hard target, but it ain't nothing like it will do to the human body, I mean, it will just cook, it will just vaporize the human body so to speak. Soft targets wouldn't be instant inferno in front of it. It actually boils the air molecules in front of it. Uh, but that's not exactly right, it's like they all boil simultaneously, all the way down the line.

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M:) Um-hum.

V: It's like these, it's such, this 10 or less Angstroms of wave
front are so - the wave and frequency is so small that, uh, the, uh,
air molecules get in the way simply because they are getting sighted
by it. So it turns the air molecules into a frothing mass. And it
has to do with, uh, the real main function we're talking about here is
these, these metallic - I keep wanting to say metallic - I guess maybe
because they've got so much oxide in them. They're like, they're like
meant to be destroyed by this thing. When electrons hit these, these
thick wires, this mass of material, what happens is this mass of
material, uh, lases out or puts out this coherent wave front, and, it
only does it for just so long and then it, it burns up - it's no good
anymore - or it's, uh, it, it does something to it, um, its like a
cluster of wires. This mass of oxide material all held together but
they're, but they're drawn out and in straighter fibers like. I think
that's to give direction to the wave, the coherent wave fronts or
something - it's a huge mass of electrons that's forced across the,
this - I wanta say electrons, anyway I don't what the hell is. And I
go back up this line and I, I can't help but go back to that, you
know, that circular sphere which is...

M: ⌐ ⌐ Yeah.

V: ⌊ ⌡ ...in the other building. But, I'm getting a real interesting
picture of this other sphere, uh,

M: ⌡ I know. This is, this is another building...somehow....

V: Yeah. This is in, we're now in C building...

M: Oh, that's in C building.

V: This is in C building here. This, if I remember
right...somewhere between here and here is the wall of C building,
right, I'm not sure if that's not in B building and the tube extends
through that connector piece in the C building and C building is
predominantly the target building - where the target's contained or
held.

M: / Uh-huh.

V: But you know all the test equipment is set up on both sides of
the target building. This is, I'm getting a real interesting
perception of this now. It's one I didn't have earlier.

M: OK. Let's do something that's changed, or, or...

V: Essentially what it amounts to is I'm seeing a circle, you
know, and inside the circle - I wish I could draw this, ha, uh, inside
the circle the circle's split like, uh, into all these different

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V: Yes.

M: So this is kind of a production phase and its routed through here and here...

V: Generates this ray, this, uh, yeah, yeah.

M: I see, OK.

V: And, uh, uh, this, it takes these megalithic lasers to light this.

M: Um-hum.

V: For this to cause this.

M: Um-hum.

V: And the output of this sucker right here is quite destructive in terms of its wave front, uh, but this thing rapidly loses, uh, strength over distance because of the air molecules and but for test purposes, uh, that's it, I just said a key thing. This is a testing apparatus for the concept perhaps.

M: Um-hum.

V: In other words, somehow, uh, this is emulating the process that would be done in a, in a more large way. In a huge way, uh, this is like a little example of something, uh, I'm trying, I'm trying to figure out what the - as best I can figure on a hard target what they're trying to do is they're to effect, actually physically destroy this hard target. And what we're talking in hardened that it's heavily shielded, the solid state electronics of this target are heavily shielded, protected, uh, what's interesting there's, god, this is really neat because this unfolding - there's a twofold, there's a twofold thing about - I wanta write something else down before I forget it - this is uh, test vehicle for concept. In the hard target there's a twofold fall out from this, one is, you find out can a hard target be destroyed, or at least made dysfunctional, but b, you find out can you build a hard target that can't be dysfunctional, made dysfunctional. So it's like you get a twofold benefit out of this - testing this thing.

M: Sounds like it could be a competitive process - one team working on trying to make it invincible and one working on attempting to penetrate it.

V: It's like exactly right, you've got, you've got, well, you've got a whole number of different things here. You've got this machine which we'll call A machine, uh, producing larger amounts of power. Then you've got a B problem which is stripping off the power for use

in a new way of lasing we'll call it. Then you've got this machine which is a whole new form of luminous laser. I'm not sure laser's right. There's a different word. Phaser, phaser. That's what they use on Star Trek.

M: Ha! Then it was something more advanced than a laser.

V: Yeah, it's like next generation. It's a phaser beam. And it's very possible that it might be in a microwave region because microwave keeps popping in my mind, but I don't think so.

M: Um-hum.

V: Uh, I think we don't need all of this to do the kinds of outputs in the microwave region that we could do to create this effect. Uh, I think microwave is, uh, the problem with microwave is there is no way to generate a coherent microwave front but then I might be wrong about that. But I think this is a different kind of wave. This is really a coherent wave. And the key here in part C of the problem is these little metallic rods or wires or whatever use this bundle of stuff is - that's the key to it. And, uh, I look at this and I, this concept down here and I get an impression of, I just want to put a big thing like this that says "Focus here." Which is real interesting like this is deliberately controlled nuclear explosion and you focus it all right here. That's a wave front I keep wanting to draw esoterically - I don't know how to draw it mechanically.

M: OK.

V: I say to myself it's impossible to do that but then...

M: Well, when you say esoterically what do you mean by that?

V: Meaning that, uh, I think, I think the concept's really down, I think in terms of, of what's going on here in the event. The concept's really ironed out. I think where there's a problem is - the timing. Let me write that down.

M: Yeah.

V: Timing is, uh, is critical. And in the time that they're having a real problem with the timing because element A, well subsequent to that - there is some other thing back here called lasers which we'll call 1-A. The 1-A ignites A. A is actually destroying C in some way - eating it up. This - outside this bottle or this control mechanism this mirrored sphere, uh, A couldn't happen. It couldn't happen and if it did it would be out of control. And in the event when it does happen inside this control sphere, it's, uh,

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providing sufficient excitation to see, to test the concept. But it isn't full blown. As much as, I mean, we're talking a really complex thing that probably took years and years and years and years to build, but it's only a test vehicle for the reality of the concept. The real concept is ten fold removed in terms of complexity or difficulty from this. It all has to do with timing. Because in the real concept what's happening in A, this little bitty fire here, we're talking about increasing that on a magnitude of $10-12$ which is really up there, which means that there isn't a container that's gonna hold it, and I don't know how they're gonna do that which is real interesting. But you can see the megalithic increase in the output...

M: ( ) Sure.

V: ...up here through this, this, these key elements. If they were increased, if this is, we're talking billions and billions of lots of power going to this test vehicle, and you can imagine what a ten fold increase in power to the output of this thing would be, I mean, just...unbelievably destructive. That essentially what I'm getting.

M: OK.

V: What's interesting is I - I think all the elements of this are being tested, that's what's going on right now. They're not firing it up, they're testing all the elements.

M: I see.

V: Everything's being fine tuned and calibrated. The test is yet to come. It's all being fine tuned and calibrated.

M: It would be analogous to preparation for a launch or something like that where there's lots of activity and...

V: Yeah.

M: ...and things being done to test the component parts of it - to make sure they're in working order.

V: Uh, this, this would be amazing to watch - I mean talk about feedback. I mean, when they fire this sucker up the, the, the, uh, the atmosphere will glow around it.

M: I see, so there is something, there really is something to see.

V: Oh, sure.

M: It's not just uh...watch the dials kind of thing...

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V: [   ] Oh, no, no. I think there's an awful lot of dial watching involved in it in terms of the time and sequences and everything and trying to perfect the, the actual outcome, but in terms of, uh, watching the business end of this sucker, uh, I'll bet ya it boils the, uh, it boils the atmosphere around it.

M: [   )] Hmmm.

V: [   )] I'll bet you actually see this, this, phaser type wave come out of there - it's just, or just appear between between that and the target - it actually looks like it's boiling and the atmosphere around it, which would create a white haze or something, uh, I'll bet ya that's visible. I'll bet ya there isn't very much of a hard target to stand against it. It wouldn't explode itself. It's molecules would just become so excited by it that it would literally implode or explode.

M: [   ] Hmmm, I'd be curious as to whether something like that would be detected outside of this environment?

V: [   ] Uh; I think the problem, the problem is, and it has something to do with the vacuum, using a vacuum tube...

M: [   )] Um, hum.

V: [   )] ...or testing it in molecular air, uh, the problem I think is the wave format is so short that the distance is critical...yeah.

V: [   ] I mean it's OK to test it on the surface of the earth like in an atmosphere but in deep space, for instance, it would be really effective because there would be no air molecules to block it. But on the surface of the earth if you tested it the wave components, the components of the wave are too short so they're sucked up by the air molecules.

M: [   ] Oh, I see.

V: [   ] So, when you get such a cushioning effect from the surrounding atmosphere that if you were to back off say 30 miles from this it would be totally undetected, undetectable, it just wouldn't be putting anything out, uh, it wouldn't be giving anything out that you could detect. So, in terms of detecting at a distance, say if you were to, run a satellite over this area to try and detect what was going on it would be damn near impossible to do that.

M: [   ] Um, hmm.

V: [   ] You can certainly detect it in space, though. If you had your detector in space and this was operating in space that would be the last thing saw...that would be the last thing you would detect before it ate you, uh, it's really interesting. I also think one of the

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other problems possibly with this, I get a feeling like, uh, the wave
front on this is also highly effected by gravitational pull, things
like that. Things that you don't normally have to worry about with
light, photon-type activity. You know on a standard a laser outside
the fact that the laser gets really weak over distance. Well, this
will get weak over distance unless it's in a vacuum. If you're in a
vacuum like in space or near vacuum, like space, then the distance on
this is really great in terms of power. I was just seeing these hard
targets being literally shaking inside out, it's like the molecules
inside the hard targets were just vibrating instantly into, into, uh,
such a hypervolic action that don't even stay glued together. They
just vaporized - the hard target, uh, of course, the harder the target
the less it's damaged, but there's still an awful lot of damage, uh,
plus there's another thing. The, the real, it's all, the whole
thing's got experimental problems, but the real problems, the real
crux, the state-of-the-art stuff is right here in C which is these,
these components right here. They get bathed by the output of the,
the control exposure chamber, but these little rods or wires or bundle
of whatever they are, sticks, metallic oxide, sticks or whatever,
these anodes...

M: Um, hmm.

V: I don't know if anodes is the proper word. I'm reminded of,
this is really crazy - the association, but on the bottom of a boat,
to keep the metal on your boat from being eaten away through corrosion
and what not you put these little nodes so that, you know, the salt
water, they're soft metals, the salt water attacks those first, you
see, and eats those away, and so you use the rest of the metal on your
boat - I'm not even explaining that right, but that's what I get a
feeling about these, is that these actually attract the electron
stream or whatever it is and, and, the collision of the electrons or
whatever with the molecular components of these oxide tubes or
whatever...

M: Um, hmm.

V: ...produces this really intense ten fold increase or ten
thousand fold increase wave front output. They get real excited and
they put these waves out. So it operates very much like a laser, but
it ain't a laser. It's, it's more like a phaser, you know. I don't
know how to explain that. It's a different kind of wave than coherent
light waves.

M: Yeah.

V: It's in a different frequency spectrum altogether.

M: It sounds like, it sounds almost like instead of, uh,
transmitting light, you're transmitting energy.

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V: ⌐ ⌐ Yeah, right, exactly, absolutely, that's exactly what we're talking about here is an energy laser instead of a light laser. But it takes, it takes, this huge complex system of light wave lasers to ignite this controlled explosion in this sphere of mirrors and then that is absolutely forced to fold down upon itself to produce even larger amounts of energy and then energy which is really seeking to expand outwards produces these orbits of electron matter or whatever that are stripped of them to bathe these rods to produce some other form of laser. (M speaks but can't understand.) Yeah, but this, this part can't get, I don't if it's because it's so short and looks real complex...

M: ⌐ ⌐ Um, hmm.

V: ⌐ ...or if it's because it's like a segmented tube.

M: ⌐ It's funny because that's where you started.

V: ⌐ Yeah, and it's a real complex segmented tube of some kind.

M: ⌐ Um, OK.

V: ⌐ But it necks down there, it becomes very focused.

M: ⌐ Oh, I see.

V: ⌐ But I think it's strictly a vehicle to get these, these electrons out of here over to here. Some electron wave guide for lack of a better word.

M: ⌐ ⌐ Hmmm. Is it, but, it's a transportation medium, you would say, it's not something that, that modifies the...

V: ⌐ ⌐ No, it, doesn't, I don't think it modifies it in any way. As a matter of fact, there may be a huge electromagnetic field wrapped around it...

M: ⌐ ⌐ Oh, I see.

V: ⌐ ⌐ ...in order to get the electrons to travel down it, or stay within it. You know, it compacts them maybe and transports them. As a matter of fact, it, the reason why it's segmented may be because it coils around this sphere. Actually, it comes out of this sphere in a coil and then dumps straight into that one. But I feel like they're separate places. They may, ah, shoot. Uh, I know when this stuff's fired there's nobody in the room. At least this kid wouldn't be around. No, I wouldn't mind being on the opposite end observing, you know, not on the end of it but to the side observing the impact area or the target area, that would be really interesting because I think it's very coherent, very directed. I don't think there's anybody down there at all. I think it's probably all watched with TV's, uh, I

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can't imagine like if element C loses it's coherent wave front it's no longer putting waves out in front of it and just starts putting it out sporadically in all different directions, it would kill everything within so many feet. I suspect that this element is packed in, uh, built inside a block house concrete-type of place, and that's why I think this wave guide is used to get the electrons over there. I keep wanting to say electrons but I don't think that's what they are - highly excited matter, let's put it that way.

M: So now if you were to step back from this perspective a little bit, how is this all taking place or does it have any relationship to what we did this morning in any way or is this a process that's going on in totally different part of the compound or a totally different place, or where, where are we now if we expand out from this a little bit?

V: OK, A would be in the B building. C is in C building.

M: OK, so then,.

V: Or, or, maybe C is in a connector part and the target's in C building.

M: I see.

V: Test equipment's on both sides of the hard target area, uh, I get the feeling that C building is basically a block house type, uh, type of place. But, but, then I also have to say and I go back to multiple teams which I should put down here, uh, multiple teams, uh, there's just a whole lot going on here, you know like A it's a whole different team of folks, and there goal has nothing to do with C, uh, A folks over here, their primary goal as a team is to fire up this controlled explosive device and maintain it put out ever larger increasing amounts of energy from it. Uh, then there's a whole different team that's playing with this, this phaser thing down here. And within the phaser team there's a whole different team that's concerned with trying to find a more stable, stable bundle of wires. A more stabilized bundle. A more focused output device. Then there's 2 teams an A and B team at the hard target site. One is trying to destroy the hard target no matter how it's shielded and the other's trying to shield it no matter how hard they try to destroy it. And, so there's 2 sub-teams there. Uh, simply by changing, I keep saying these are the key, this bundle, this bundle of wires, this bundle of rods or whatever, by simply changing those, you change the entire output wave front, in other words whatever is in inserted here is what determines the wave, uh, how many angstroms it is, uh, how much energy output there is, its coherency, all these different things, uh, and I keep, uh, one of the other things I keep finding very interesting is the fact that uh, in terms of controlled explosion, the enormous

amount of power this puts out in relationship to how it excites this
is nothing compared to what the real machine will do. I feel like
this is all just a mock up. A test mock up. This is what we can do
within bounds of, uh, within bounds of control, or within bounds of
experimentation. If you were to build the real machine, uh, and put
it in orbit or something it would be far less complicated on one hand
and on the other hand it would be even more complicated, uh, but its
power would be equivalent to this - it would be 10 times 10 more
powerful output. You could literally put a wall up - a big glass wall
that nothing could fly through it. An umbrella type of front. You
can imagine a huge bundle of key rods or whatever each one putting
out, each one putting out a very tiny beam that 2,000 miles away would
be much wider and broader...

M: (   ] I see.

V: (_   ] And, uh, very intense all side by side you know its putting up
this front, like an arc so many miles high and so many miles wide,
and, uh,

M:] A shield type thing.

V:] Yeah, but it wouldn't last long.

M:] Oh, I see.

V:] It wouldn't be, you'd wait until the last second type thing,
and it would present this wall and it would last maybe seconds. But
anything in a depth of say 300 miles would be just vaporized, it would
be like a curtain that would appear and disappear, uh, really, really
Star Trek stuff, man, this is really exciting Star Trek stuff. I wish
I could figure 2 things out in more detail. And maybe I well, maybe
that will be something...

M:] Yeah, maybe that will come tonight.

V:] It will come tonight, yeah.

M:] Yeah.

V:] But, uh, that's basically it, I guess.

M:] OK.

V:] So, I'm gonna try to render something more - maybe I'll leave
this alone. I'm afraid to mess with this.

M:) OK.

V: (   ] I'll just darken it in.

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M: [   ] OK, allright, we will stop the tape for this one, that's fine. Tonight we're gonna have XXXX and the SRI folks all there.

V: [   ] All, watching this sucker go off.

M: [Seeing whatever is going on.

V: (' Maybe they'll all be standing around with their thumbs in their ears saying well it should have.

M:] That's true.

V: (__] We'll wait and be surprised. I know want their electric bill at this place, I'll tell you that.

M:] Makes your electric bill look kind of piddly, does it?

V:] It sure does.

M:] By comparison.

SESSION 4, 12:00 p.m. (U)

May 7, 1987 (U)

M: So, here we are. It's a minute or so till 12. Take a minute or so get yourself situated. XXXXX is on site again as are the SRI staff members. They'll be acting as beacons in this, uh, during this pass and they'll be observing, watching the event that or an event that is taking place at this time and your job is to give a description of that, of what's happening there, what's of interest to them right now as they're at the site.

V: Hmm. OK, let's see. Um. I'm trying to, it, uh, getting a real interesting imprints here. I, uh, I get sort of uh kind of interesting, uh, I want to say that I'm, you know, that I'm envisioning this, this, uh phaser-type of thing, but that's, I'm, I'm seeing something a little different...

M: Um-hum.

V: Um, um, uh, hum. I feel like I'm stuck between an overlay, an analytic overlay and an actual event..

M: Um-hum.

V: And, I don't know how to rectify that.

M: Can't quite sort it out?

V: No. It's kind of like, an event but it's a, kind of like it's on film too.

M: Hum.

V: Which is kind of interesting.

M: Um-hum.

V: Uh, I'm kinda torn between whether I'm seeing like a remote, an event remote to that actual place being observed there or one that's on film, or one that's on film combined with an actual event going on there. I don't know how to explain that. Uh, sort of a package deal, it's kind of like, uh, uh, I keep getting, uh, like combination of two things – one's local and one isn't.

M: Hum.

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V: Uh, one's observing something going on there and the other's observing something going on somewhere else that's related.

M: So it's like maybe two sides that are involved.

V: Yeah, it's kind of like there's two sides involved. The, uh, except they both mean the same thing, uh, I can't tell if one's real time or not.

M: Are they both participating in, in a common event, or...

V: It's sort of a common event.

M: Uh-huh.

V: I'll think about it for a couple of minutes. You can, rather than waste the tape - shut that off for a second.

M: All right.

V: Give me about a minute and I'll tell you when to start up.

M: OK.

V: I'm getting two things. First off I'm getting a presentation of a film showing a device being tested somewhere else and then that's followed up with demonstration of this, this capacity, this, uh, uh, phaser-type of radiation machine showing it's effect on a specific kind of target. So it's like a two-part thing. Only one part is done somewhere else. And, and, I keep getting an impression of a place even further in the desert, OK, and what's interesting about it is is surrounded with, uh, hundreds of like individual, uh, storage bunkers, like everywhere. I think, I think what we're talking about here is, uh, uh, let's see, I'm having trouble defining between demonstration of this device and, and a real, well they're both real, but one was done beforehand, and one is being done now. And the one that was done beforehand was actually a device. It was really a, a, and I keep saying device, I'm talking what I'm talking about is a bomb. It was actually used in a demonstration type of effect and, uh, it was like two ended, it was double ended. It had one end was, was an actual bomb that produced, that produces or produced an output that initiated a second bomb. It produced an output that initiated this ray, if you will, but it was all done, uh, like in an underground test. And then they had films of this and they showed the outputs of this and they're going into a live demonstration using this laser to initiate very much the same kind of outputs only on a much smaller scale, so, uh, we're essentially talking about two kinds of devices doing the same thing, one on a large order of magnitude, one on a small order of magnitude.

M: Um-hum.

V: [   ] And, uh. I'm getting a picture of, I'm getting a mental image of this device. thing that they use, uh, for like the canned demonstration, film demonstration. And it's, uh, it's uh, that's not right. Do we have an eraser? Let's do it this way, uh, um, something's not right about that. It's more like, uh, it's like an underground thing that's, uh, demonstrated there's like a-uh, we'll call this an initiation device. And what happens is this thing goes off and its fastened to a little short piece of tubing that is very much like a wave guide and what it does is it focuses, um, this is, uh, focus for, focus for, it's the first thing I'm trying, what's the first thing that happens from like a thermonuclear device like a thermonuclear device, it's not even a thermonuclear it's a nuclear device. The first thing that happens is there's a huge output of neutrons and it goes into a second device and the second device is a, uh, thermo target. And then this ignites, OK. And that becomes like a thermonuclear type of device and that goes off and then fastened to the end of this is this cluster of these, those rods, whatever you want to call them. Little lasing type things.

M: [   ]. Um-hum.

V: [   ] And they produce a massive output as they're enveloped. Lasing rods produce like that. This output. And this goes down a, uh, this whole thing takes place in a chamber under ground and this goes down a tunnel and at the other end of this tunnel you're down let's say it's a, this is ground level. And you get down here in this chamber where they do this and it shoots down this tunnel a few thousand feet. Meanwhile, this thing's expanding over here – it's actually exploding, but it happens so fast, uh, this explodes but before this destroys this, it ignites it, with this massive focus of neutrons. When this ignites it lases these which produces the output of, uh, gamma rays or whatever they are. As that's being enveloped these rays are racing down this tunnel which has blocks in it. And right behind these rays going down the tunnel, these blocks are closing. And down here at the end is a chamber of targets so also there's sensing equipment down here so there's a secondary tunnel down here. And, uh, sensing equipment we'll say sensing. This is the actual, uh, this is the actual detonation place. So this is all destroyed here, but it sends radiation down this tunnel and behind this radiation which is all very, I mean, everything's all instantaneous almost speed of light and this always happens, these shafts close down behind it to minimize damage to the target area. So the only thing arrives down at the target area are the rays from this thing which then shadow the target, and, and, this is, this is, uh, essentially we'll call this Demo One. That's, uh, done at a remote site, of the site, Air [   ] Base, uh, lots of large bunkers. Some are out in the desert. That's Demo One.

[   ] Then you get Demo Two. Demo One shows this is what it looks like on a full scale. Demo Two shows a more controlled thing going on

at the lab. And essentially what you got is, uh, this thing all hooked up to all these input, all these different things, lasers, are hooked into this sphere as I, as I drew before.

M: Um-hum.

V: (S/NF) And it in turn produces, uh, produces that giant electron output to, uh, to sort of cluster this thing which puts out this ray. This, this I don't even want to use this picture cause it's not very good. The problem I'm having with this is I'm, there's a big element that's missing and it's where it's missing is connecting this machine to this machine. There's something in here that I'm not getting and I can't...

M: Is it the same one you were having trouble with this afternoon...

V: Yeah, um-hum.

M: ...same, same connection there?

V: What I keep wanting to do, is I keep wanting to put the whole thing into an apparatus that captures electrons and accelerates them.

M: Um-hum.

V: But, then I don't know how to do, I don't know I'm gonna do that, it's, it's almost as if, it's almost as if there's a, like a, this thing wrapped around like this, uh, this being. I'm really having a problem with this - I keep wanting to wrap something around this sphere right here.

M: Um-hum.

V: And, and, the essential step is that it strips, as electrons are forced outwards in this sphere, they are collected in this trough that accelerates them in a circle and what it essentially does it forces them around, uh, in a, in a magnetic, electromagnetic field. And the electromagnetic field, uh, because it, it kicks them into a tighter concentric circle, accelerates them. So when they exit the end, these electrons are not only, uh, at a very high energy anyway because of the amount of that, they, they're really moving, uh, and then coming out of the end of this thing they strike these tubes in some way. It really fires these tubes up. They're like pumped across these tubes, uh, I'm having a lot of trouble drawing how that's done.

M: Um-hum, um-hum.

V: Uh, and these, these tubes are bundled, but they're bundled in kind of a crazy way. They're bundled so that one assists the other

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and so that it's a cascading effect. So that there's a, there's, instead of a, a sporadic output there's a very coherent cascaded built up, uh, driven kind of output coming from these tubes and, uh, it doesn't last long, it lasts for a few seconds. And I was thinking about the, uh, the wave front and I've pretty much come to the conclusion that, uh, that these things are absolutely in a very short wave area. They are either gamma rays or they're X-rays, like an X-ray laser or something like that. Really potent stuff.

M: [   ] Um-hum.

V: Uh, operating in the, uh, in a real short wave front area. And, and when it strikes the target, the target's are, uh, missile components,that's what I think the targets are, they're components of missiles, not so much warheads, but as they are the guidance systems for missiles.

M: [   ] Hum.

V: You know, like the solid state electrons, the chip electrons, and the guidance system for the missiles. Plus, I get another real interesting thing – side thing – here's, uh, here's a side effort going on with this that has to do with, uh, it takes a large computer to operate this, so what we're looking at also is we're looking at a condensed version of a very fast computer that operates this. Remember we talked about sequencing and that timing was everything...

M: [   ] Um-hum.

V: [   ] ...and, that one of the problems is that the thing that does the timing, corrects the timing and everything is, uh, a real number cruncher...

M: [   ] Um-hum.

V: [   ] ...monster of a computer...

M: [   ] Um-hum.

V: [   ] ...and the problem is that this thing is not going to be effective unless it's in space. It's, um, to fit the thing in space, this thing won't be in space floating around up here, because (a.) that violates agreements, (b.) it's a sitting duck circling the earth in a fixed orbit or just sitting in a fixed orbit. So what we're essentially looking at is we're looking at a device that's launchable. In other words, when, when we determine that the Soviets have launched say a group of ICBM's, then we would fire this sucker into space it would seek out the ICBM wall and eliminate it. So we're looking, we're looking at a, a device that's really smart, that can handle big,

big time timing sequential problems in a very short period. So we're
looking at a whole new animal in terms of how smart it is. And I was
thinking of that, and it's really interesting - I'm getting the
impression of a bottle, a bright blue bottle that is literally a
computer operated by light. Uh, I don't know how to explain that but
I think that's the extra laser that I'm seeing. It's actually a
computer that's light operated. In other words, it operates on
photons instead of hard circuits, electromagnetic circuits, so it's
literally impervious to the EMP or EPI or whatever they call
it...electromagnetic interference from atomic blasts. And, that's a
very, uh, a really powerful computer but it's crunched down into a
really tiny size...

M: Um-hum.

V: ...so this, and, and because of its size this thing actually
glows blue white when it operates.

M: ·Hum.

V: ;You know, it creates so much heat itself, the computer does,
this is real interesting, we're right on, this device is so far out on
the edge of stability that, uh, quite literally, I mean it's
self-destructive. In order for it to work in its final state, it
destroys itself. It generates such intense power...

M: Um-hum.

V: ...that it lasts for a microseconds, but the wall it puts up
destroys everything in its way, in its path, uh, we're talking a
really neat concept, and all the dynamics that are going into it are
really complex and really state-of-the-art stuff.

M: Um-hum.

V: Uh, I, I essentially see what I was seeing this afternoon only
I see it operating and it's, it's, uh, this volatile beam coming out
of this thing. I just wish I could - the key to this whole thing
really, the key to the whole thing and the metal alloy or oxide alloy
rods that are bundled - that's the key, and how they're bathed with
the output from this, uh, laser initiated controlled explosion and,
and the elements from that - the, uh, neutrons that are stripped from
this are done in a very, are stripped in and a very special way. It's
like, uh, it's something different from electromagnetics and I can't,
damn, I can't put it together.

M: It's not in our vocabulary.

V: No, that's probably the problem is that I have nothing to
describe it with and I can see it, you know, I can, I can taste, I

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can, I know it's, uh, uh, if I was gonna draw it, uh, I wanta do this really fancy scribble and, uh, and, and, what's interesting about this is and again we're going back to the timing sequence and all that kind of stuff, what we're really talking about is we're talking about an expected occurrence of the neutrons coming off this thing. In other words, the way they orbit and everything it's all predictable. It's all been predicted. So they strip off the maximum number of neutrons and accelerate them down to these lasing metallic alloy rods or whatever they are and there's, it's not a donut wrapped around this thing but it's a special shape. It's like, uh, it's designed to capture where the neutrons will be which is really interesting. It's, it's like there's, you would look at it and say "that's really weird the way they did that." But it's taken months of, you know, using the computer to map how that will be done without interfering with the process itself.

M: Um-hum.

V: You know, it's like being in the right place at the right time. And, I don't know how to do that. It's like a

M: Sounds like it's hard to capture in a drawing, it's hard to capture in language.

V: Yeah, and what I'm trying to do is I'm trying to capture the right kind of words to describe it. It's not like a double helix, it's not like a donut, uh, it's like a, uh, it's a specially configured - it's not electromagnetic either, it's something - it like traps the higher orbits of a neutron that come off or electrons that create neutrons or whatever. I don't even know what the hell I'm talking about here. You know, I think physicists would have troubles sitting down and conversing on this.

M: Um-huh.

V: It's beyond, it's beyond the come, it's, uh, they could theorize it but, when it comes to actually doing it, it takes literally sitting down with a super computer for months to come up with come conclusions, or arrive at some conclusions, so Demo One is a film of what happens in the desert. Demo Two is actually seeing this thing done in a lab scenario on a smaller scale using this massive laser device to initiate a controlled nuclear detonation which produces huge outputs of neutrons which are stripped using this double helix donut device which is then pumped or pulsed across a very special alloy type of rod, and it's real short, I mean it's not a major thing. It's just a little bunch of rods that are set up in a certain way and neutrons are pumped across it. And its acts like a directional anode and it puts out huge massive like 10^{12} outputs of X-rays in a coherent wave front. And these things come boiling out at

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the end and literally heat the air molecules uh, that travel they travel through. Burn them up – just, they burn up the air molecules, create a vacuum around the and hit these targets which are parts of pieces of guidance systems to rockets and molecularly it shakes them to pieces – vaporizes, vaporizes them. And when I say the, the output of the output of, the demo device in the lab is like 1 1/10th and not even that, like 1/50th the power of the one that's, that's done with the detonation in the desert.

M: Hum.

V: The one in the desert is just unreal, it's literally powered with a thermonuclear device, I mean it's output is outrageous. On a, on a scale of 1 to 10 the lab demo is a 1 and the one in the desert's is 10 to the minus 10, I mean it's just got an outrageous output – it would melt anything. And, and in space the near vacuum of space it would put a small wall up of X-ray or gamma ray output that you couldn't fly a gnat through you know without cooking it. It would shake everything molecularly apart and, and it wouldn't last that long, you know, seconds. And what's neat about it is the only side effect is the thermonuclear device going off in the atmosphere, you know, above the atmosphere in space, so you would have a probably a real severe EPI problem or EMP problem or whatever you call it that would last for a few minutes actually a little more than a few minutes, but the result is that everything manmade above the atmosphere would cease to function. It would literally be blown to pieces. Real overkill for eliminating just a few hundred ICBMs or whatever. Probably 15 of these would launch one right after the other for a 20-minute period would eliminate any ICBM's the Russians ever launch.

M: Hum.

V: That's essentially it. That's, that's all I'm getting for this event stuff. Now I'm getting some other real interesting things on the side I'm getting specially designed computer stuff to operate these things, to aim, them, to handle whether or not they should go off, or how they go off, uh, super high speed very powerful miniaturized computers that run very hot. I see them literally glowing bottles of coolant. I also see, uh, a second remote site in the desert somewhere that's definitely an air base where the devices are put together and tested. I see, uh, uh, hum, got kind of a flash and input of guys running around with guns which is real interesting, uh, some kind of heavy security force, this is really over protected stuff, uh, I see variations of this, theoretic variations of this that operate not only in the gamma X-ray area but are – you see this is capable of generating a whole lot of different kinds of wave fronts. And you can generate microwave, you can generate gamma wave, you can generate X-ray, the key is the rods. It really has to do with the

lasing components and I think the problem what they've really ironed out is how to, how to time the thermonuclear device to capture its output in terms of neutrons and focusing. They've learned to do that and now they learned about the lasing rods and how to develop a coherent wave fronts. And its combining the two and putting that into a vehicle that's launchable - it's really interesting. Making it small enough but violent enough to do what it's gotta do, so we're looking at some really advanced state-of-the-art stuff. And I think one of the real surprises that they've got in just the past couple of years is the ability to theoretically test it by using both the high energy laser at this lab. They were unable to generate enough output power with this laser before it really use it to any extent in testing this. And now they've been able to do that, really, really produce the kind of output that's necessary and control the scenario to at least generate some minor tests they're major tests but I mean an a way that's...

M: Um-hum. Sure.

V: ...observable in a lab situation, uh, which, again, I think the breakthrough on that which is it's really interesting has to do with something as simple as polishing the inside of that sphere.

M: Hum.

V: So that they're not only initiating the, the miniature sun to burn, but it's actually reflected back in on itself. It actually collapses back in on it, so it's almost like building a miniature black hole, in a bottle which is really neat. And, and again that in comes the theory to this enormous amount of resource in terms of computer work and theoretics and stuff, and, and that's it. And the most fun out of the whole thing is that they really do initiate this thing using this high energy laser. You get to see the air molecules boil. Maybe via, I wouldn't watch it except via maybe a remote camera, uh, I get a feeling if this thing ever went haywire, you know, I mean there'd be X-rays everywhere, so it's probably a very, uh, heavily built shielded room that they use as a target.

M: Um-hum.

V: That's it, that's it, that's go for broke stuff.

M: OK.

V: OK. I hope so.

M: Thank you,

V: It seems to be awfully fantastic stuff.

Final Report
Covering the Period 15 November 1983 to 15 December 1984

December 1984

GEOPHYSICAL EFFECTS STUDY (U)

SRI Project 6600

Copy No. 11

This document consists of 58 pages.

I OBJECTIVE (U)

(U)

The objective of this effort is to investigate the possible effects of ambient geophysical/extremely low-frequency electro-magnetic factors on remote viewing (RV)[*] performance

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[*](U) RV (remote viewing) is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding.

1

II EXECUTIVE SUMMARY (U)

SRI International was tasked to investigate a potential correlation between remote viewing (RV) performance and ambient geophysical/extremely-low-frequency electromagnetic (ELF) activity. The possibility of such correlation is indicated, for example, by studies showing psychophysiological effects[1,2]* and behavioral changes[3,4] associated with ELF electromagnetic fields. The geophysical variables of interest include such factors as ELF intensity/fluctuations, ionospheric conditions, geomagnetic indices, sunspot number, and solar-flare characteristics. The questions addressed in this program are

- Do geophysical/performance correlations exist such that measurement of the ambient geophysical variables could be used as an indicator of expected performance?

- If so, can optimum performance windows be identified?

(U) The structure of the program to investigate the above issues consists of

- A literature search

- Real-time ELF measurements

  -- SRI International (Menlo Park, California location)

  -- Time Research Institute (Los Altos, California field station).

- Real-time geophysical data acquisition via the National Oceanic and Atmospheric Administration (NOAA) Westar IV satellite downlink.

- Computer correlation studies of RV performance versus variables of interest.

(U) In this report, we present findings from our over-six-year analysis of scored RV sessions--as they relate to geophysical environmental

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*(U) References are listed at the end of this report.

3

(U)

spectrum is unknown, it could provide a promising link between the solar-
terrestrial environment and known electromagnetic effects on biological
processes. With regard to ELF itself, preliminary evaluation of the ELF
environment in half-hourly time intervals has shown a possible relation-
ship to frequencies between 10 and 30 Hz, particularly as ELF intensities
change from below average to above average values.

Considering the modest level-of-effort for the survey
of geophysical/ELF factors, and their possible relationship to RV per-
formance, a considerable amount of progress has been made in delineating
potential correlations of value. What can be said at this point is that
this pilot study provides evidence that the quality of RV functioning may
be intimately related to the geophysical environment. What remains to be
done is (1). an in-depth statistical evaluation of those findings of this
study that were strongly intercorroborated by the various data sets used,
and (2) a structured attempt at blind RV performance forecasting. As a
result, continued collection and analysis of such data will be pursued
to determine whether the correlations found are stable over time, and
will thus provide a solid continuing basis for RV performance prediction.
From both scientific and practical viewpoints, knowledge of this kind makes
it possible   to consider methods for
enhancing the overall RV product.

Interim Report
Covering the Period 15 November 1983 to 15 July 1984

July 1984

GEOPHYSICAL EFFECTS STUDY (U)

SRI Project 6600
ESU 83-147

Copy No. ....

This document consists of 54 pages.

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I OBJECTIVE (U)

The objective of this effort is to investigate the possible effects of ambient geophysical/low-frequency electromagnetic factors on remote viewing (RV)* performance

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*(U) RV (remote viewing) is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding.

1

II INTRODUCTION (U)

SRI International is tasked

to investigate a potential correlation between remote viewing
(RV) performance and ambient geophysical/extremely-low-frequency electro-
magnetic (ELF) activity. The possibility of such correlation is indicated,
for example, by studies showing psychophysiological effects[1,2]* and
behavioral changes[3,4] associated with ELF electro-magnetic fields. The
geophysical variables of interest include such factors as ELF intensity/
fluctuations, ionospheric conditions, geomagnetic indices, sunspot number,
and solar emissions (e.g., X rays and solar flares). The questions to be
answered in this program are

- Do geophysical/performance correlations exist such that
  measurement of the ambient geophysical variables could
  be used as an indicator of expected performance?

- If so, can optimum performance windows be identified?

(U) The structure of the program that will address the above issues
consists of

- A literature search.

- Real-time ELF measurements

  — SRI (Menlo Park, California location)
  — Time Research Institute (Los Altos, California
    field station).

- Real-time geophysical data acquisition via NOAA
  (National Oceanic and Atmospheric Administration)
  Westar IV satellite downlink.

- Computer correlation studies of RV performance versus
  variables of interest.

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*(U) References are listed at the end of this report.

Final Report   *December 1*
Covering the Period 15 November 1983 to 15 December 1984

PERSONNEL IDENTIFICATION AND SELECTION (U)

SRI Project 6

Copy No. **12**

This document consists of 54 pa

TABLES (U)

IV METHOD OF APPROACH (U)

A. (U) Overview

(U) To accomplish the object of this effort, we used a group of 19 "calibrated" remote viewers as "baseline" indications of personality types for individuals who are likely to be good remote viewers. All 19 viewers were scored on a self–report inventory and on a performance measure. (Details of both are described below.) Item analysis was conducted to determine if there were any above–chance groupings of individuals in accordance with their RV abilities. By comparing the results of the performance measures with those of the self–report inventories, we considered the possibility of correlations between the two techniques.

(U): The next stage was to administer the same tests to all SRI, and Mobius Society personnel currently involved in RV. On the basis of the test results, predictions were made as to the individuals' RV abilities.

(U) As a test of correlations between self–report inventories and RV abilities in the "general" population, we conducted item analysis upon 3081 responses collected by the Mobius Society.

(U) To determine if Neurolinguistic Programming (NLP) could assist in the search for personality correlates to RV, we asked Dr. Nevin Lantz to provide us with a detailed analysis with particular focus upon applications for psychoenergetic research.

7

I INTRODUCTION (U)

A. (U) Overview

It.has been claimed by the parapsychological community that certain people can search for and locate water, oil, minerals, objects, individuals, sites of archaeological significance, and so forth. This purported ability is most often referred to as "dowsing" in the Western literature.

*In this report,† we shall refer to such techniques simply as "search." If "search" can be demonstrated to be a genuine ability, and if it can be applied   , then we may have a potential contribution

(U) This ability can be contrasted to the related remote viewing ability in the following manner. In remote viewing, the viewer is given location information (e.g., coordinates, a beacon agent, or a picture), then asked to provide data on target content. In "search," the viewer is given information on target content, then asked to provide location data (e.g., position on a map). The two functions thus complement each other.

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*(U) For a comprehensive survey of the claims for dowsing, see Christopher Bird, *The Divining Hand*, E. P. Dutton, New York, New York (1979).

†(U) This report constitutes the deliverable for Objective D, Task 1 and Objective G, Task 1.

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(U) To see whether or not this purported "search" ability could be brought under laboratory control, a computer–assisted search (CAS) routine was developed. This routine consists of the following elements:

(1) A finite matrix of possible target locations (e.g., a 20 x 20 graphics matrix grid) from which one cell is randomly selected by the computer as the target.

(2) An individual whose task is to "scan" the graphics display area with a computer mouse, and indicate, by pressing the button on the mouse, his/her choice as to the target location.

(3) A feedback mechanism that displays the response and actual target location.

(4) An *a priori* defined analysis procedure to compare the targets with the responses.

B.   (U) Background

(U) Using this general procedure, an experiment was conducted during FY 1984 in which two conditions were tested simultaneously:[1]*

- The target remains fixed in space for the duration of the trial (space condition).

- The target is rapidly moving to various locations, so that the subject must push the button at exactly the right time (time condition).

Seven subjects, who were blind to the space/time condition, were each asked to contribute 50 trials (25 space, 25 time). Five of them produced independently significant results: three in time only and two in space only. No participant was successful at both space and time conditions.

(U) A larger pool of subjects was used to try to replicate this finding in FY 1986. Participants were chosen on the basis of interest and availability, and included both experienced and novice subjects. As in the FY 1984 experiment, each subject contributed 25 trials under each of the two conditions, space and time, and were blind to the condition in force for each trial. Most subjects were unaware that there were two conditions.

Thirty-six subjects participated in the FY 1986 experiment. Results were analyzed by separating the trials collected under the two conditions, as before. Six subjects attained significant results ($p < 0.05$) in the time condition, and two in the space condition. The smallest

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* (U) References are listed at the end of this report.

attained p-value was 0.0001. The probability of obtaining such an extreme result, with 72 separate tests (36 in each condition), is 0.007. (The appropriate formula for this is $[1 - (1 - 0.0001)^{72}]$, where in general the smallest p-value in an experiment with n separate tests is used instead of 0.0001, and n is used in place of 72.)[2]

In both years of testing, no participant scored significant hits in both the time and space conditions. (There were two subjects in FY 1986 who scored significantly in the direction of missing the target under both conditions.) This observation led to the question of whether or not talented subjects bifurcated into two groups: those who could search over a spatial area, and those who could push the button at just the right time. A follow-up experiment was proposed in FY 1986 to test this.

Eleven subjects who had done well in the original FY 1986 experiment were asked to participate in a "single condition" experiment in which they would search under only the condition for which they had scored well. Thus, those who scored better in time were told of this fact, and were told that the target was constantly moving. Similarly, those who had done well with a fixed target were tested only under this condition, and were explicitly told that the target was stationary. Eight subjects completed this experiment. Results from this single condition experiment proved to be nonsignificant for all subjects.

C. (U) Experiments for FY 1987

(U) Since the FY 1984 and the original FY 1986 experiments had shown evidence of "search" ability, and since the only change in the follow-up FY 1986 experiment had been to remove the random assignment of the space and time condition, it was decided that an experiment should be conducted in FY 1987 in which the random space and time conditions were again used. This will be further discussed in this report, under the title of "Computer-Assisted Search Experiment."

(U) As another test of "search" ability, an experiment was conducted during FY 1987 with a group of five self-proclaimed dowsers. The purpose of this experiment was to see if any of these individuals could come closer than expected by chance to locating a shipwreck, by

3

(U) In our experiment, a bounded area representing the perimeter of a 20 x 20 cell matrix was shown to the participant, with the additional option of having the 400 individual squares of the grid displayed. Figure 1 shows the display with the grid option. The participant was told that the target could be anywhere within the square, and that he/she should move the cursor around, and push the button on the mouse when the moment "seemed right." The computer was programmed to give immediate feedback to the participant following each trial by automatically displaying the target cell as a filled square and the participant's choice as a shaded square, with a line connecting the two (see Figure 1). After several seconds of the feedback display, the computer recycled to the next trial. Coordinates of the target and response were stored for future analysis.
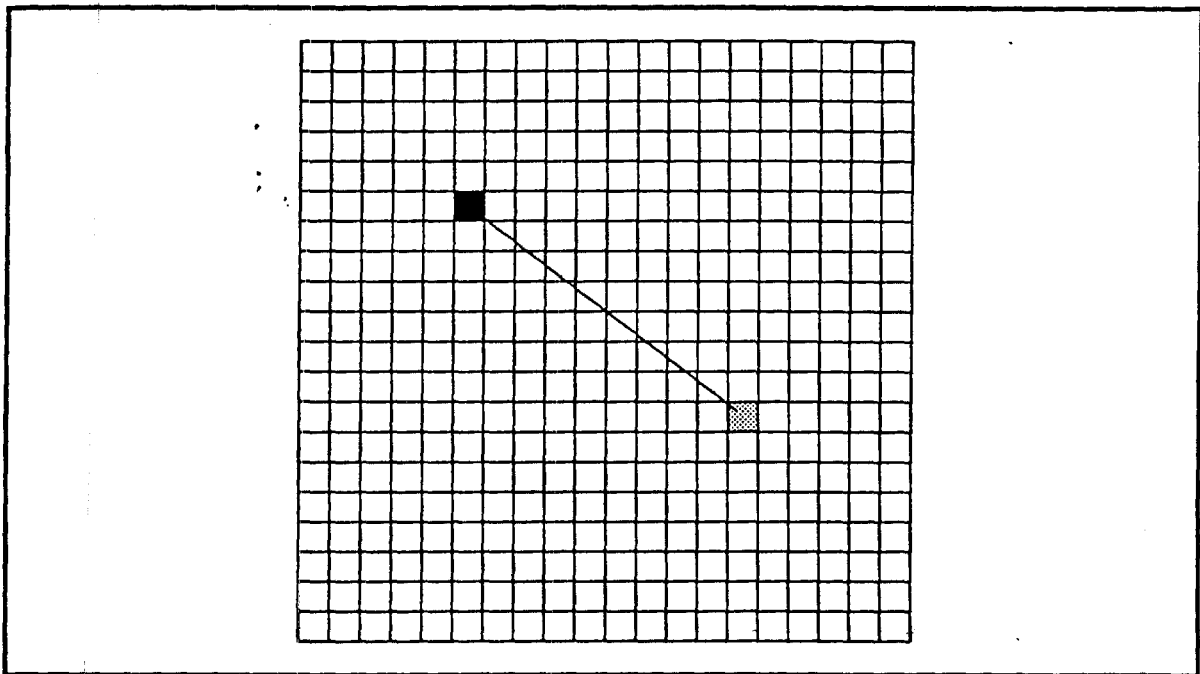
UNCLASSIFIED

FIGURE 1   (U) SEARCH MATRIX COMPUTER DISPLAY WITH FEEDBACK

B.   (U) The Atocha Experiment

     (   ) To take the search task out of the laboratory, five self-proclaimed dowsers were asked to participate in an experiment to see if any of them could find an object by searching a map. (One of them, Viewer 198, has been part of the SRI Psychoenergetics Project since 1984. At times he/she has performed excellently in real-world laboratory search tasks. However, his/her overall performance

has been mixed.) The object used for the experiment was the wreck of a Spanish galleon, *Nuestra Senora de Atocha,* which sank during a hurricane in 1622. The wreckage was found off the coast of Key West, Florida, on 20 July, 1985. It was selected as the target for this experiment because, although its location was already known, the considerable wealth it contained and its fascinating historical background made it something that would have been worth searching for. The purpose of this task was to simulate a situation in which the searchers would be excited about finding the target because of its value. Of course the experiment was designed in such a way that knowing the actual location of the wreckage would not help the searchers succeed in the experiment.

1. (U) Preliminary Activities

(U) To create a high level of interest in the experiment, SRI personnel visited Florida and conducted two preliminary activities. First, they accompanied Viewer 198 to the *Atocha* museum and discussed the experiment and the *Atocha* history in detail with him/her. Later, before beginning the experimental trials, Viewer 198 showed a *National Geographic* videotape of the search for the *Atocha* to the other four participants.

(U) The second preliminary activity was to conduct a few real–world search trials with Viewer 198, for a less important, but known, Spanish galleon wreck, the *San Pedro.* For these trials the location of the *San Pedro* wreck was marked on a map. Three white paper disks, scaled to correspond to 5,000 yards in diameter (6.34 square miles), were randomly keyed to the map and marked with a secret orientation code so that the experimenter could later rematch them to the map. The actual map location of the *San Pedro* was constrained to be somewhere on each of the three disks.

(U) To add to the excitement of the task, the data were collected while Viewer 198 and the SRI personnel were in a vessel anchored directly above the wreck. Viewer 198 was given the three disks and asked to mark on each of them the spot where he/she felt the wreck and thus his/her current location were. We had hoped that "searching" for yourself as a beacon would contribute to the success of the trial.

(U) Each disk was rematched to the map and the center of gravity (CG) for the three responses was calculated. Viewer 198's CG corresponded to a spot 500 yards from the wreck. If

(U)

a "real search" had been initiated at Viewer 198's spot, a 96% reduction in search area would have been realized over starting at a random location.

(U) Encouraged by this demonstration trial, we proceeded with the search for the *Atocha*.

2. (U) Experimental Details

(U) The five participants in the *Atocha* experiment conducted their searches in group meetings at one participant's home. During each weekly meeting, each subject attempted five guesses. These were recorded by filling in a square on a piece of paper containing a 20 x 20 grid similar to that shown in Figure 1. These responses were then mailed to SRI International for evaluation. Previous to the time of the meeting, an experimenter at SRI had generated a target square for each participant, for each of the trials. This was done using a computer randomization scheme to select one of the 400 squares in the grid. To simulate real conditions as much as possible, the grid was placed on a map of the Key West area with the target square centered on the spot where the *Atocha* had been found. Thus, each week there were five such grids, ordered numerically by trial number, for each participant. If the participant filled in the correct square on a given response grid, then when the grid used for that trial was placed on the map, the response would be directly over the spot where the *Atocha* was found.

(U) The experiment was initially scheduled to run for five weeks, with each participant contributing a total of 25 trials. However, at the end of that period the participants submitted and were granted a request to repeat the experiment, so the entire experiment consists of two sets of 25 trials for each subject.

C. (U) Analysis

(U) In both the CAS and the *Atocha* experiments, the basic unit of data for analysis consisted of sets of 25 target/response pairs. Within each pair, the data recorded were the coordinates of the target and the response from their locations on the 20 x 20 grid. In the CAS experiment, each of the eight subjects contributed one such set in the time condition and one in the space condition. For the *Atocha* experiment, each of the five subjects contributed two sets, one during each of the two five-week periods in the experiment.

the question of interest is whether or not the information provided by the participant

(S-NF)

Table 6 (concluded)

Major Keyword	Subtopic Keyword
<u>Miscellaneous</u>--Encompasses all publications that were determined to possess little or no immediate interest (e.g., "hauntings," detection of the human aura, and so forth)	No subtopics as yet implemented

would help reduce the time needed to find the target. This is equivalent to reducing the area over which it is necessary to search before the target is located.

(U) Assume that in the absence of any information, a search would proceed by randomly selecting a square on the grid and searching that square. If the target is not found, then the squares closest to the original one are searched, in random order. This continues, by progressively moving away from the original square, until the target is found. At each stage, the set of squares equidistant from the original one, which have not yet been searched, are selected in random order and searched.

(U) To analyze the success of these experiments, the average time required to find the target using this procedure with the subject's guess as the starting point should be compared to the average time required using a random starting point.

(U) The number of squares that must be searched could range anywhere from one (if the target is in the original starting square), to the total number of squares, which is 400 for our experiments. In the absence of any information, and assuming that the target is equally likely to be anywhere in the grid, the probability that exactly s squares must be searched is 1/400, for any integer value of s from one to 400. In other words, s follows what is called a "discrete uniform distribution." It is as likely that all 400 squares will have to be searched as it is that the target will be found in the first square. This result is independent of the starting square.

(U) The item of interest from each trial is the number of squares that would have to be searched to find the target. To compute this, we first find the straight line distance from the response to the target using the formula:

$$d = \sqrt{(Y_1 - Y_2)^2 + (X_1 - X_2)^2},$$

where (X_1, Y_1) and (X_2, Y_2) are the coordinates of the target and the response, respectively.

(U) Next, we count the number of squares that are closer to the response than is the actual target, since all of those would have to be searched before the target would be found. Finally, we add to the count half of the number of squares that are exactly d units from the response, since on the average half of the squares at that distance would have to be searched

III RESULTS (U)

A. (U) The Computer-Assisted Search Experiment

Table 1 shows the average proportion of squares that would have to be searched to find the target, and the corresponding p-values for each participant in each condition. One individual achieved a significant p-value in the space condition, and none did in the time condition. The subject who achieved significant results (Subject 837) had done so in the space condition in the FY 1986 experiment also (with p = 0.04), but did not participate in the FY 1984 experiment. Subject 164, who showed a p-value of 0.066 in the space condition in this experiment, had a significant result (p = 0.031) in the space condition in FY 1984, and significantly missed the target (p = 0.98) in the FY 1986 space condition. Neither of these subjects scored anything other than chance in the time condition in any of the experiments. The third-ranked subject (Subject 150, p = 0.109) was a novice.

Table 1

(U) RESULTS FOR COMPUTER –ASSISTED SEARCH EXPERIMENT

Subject I.D.	SPACE CONDITION		TIME CONDITION	
	Average proportion of squares searched	p-value	Average proportion of squares searched	p-value
837 *	0.3353	0.002	0.5008	0.497
164 *	0.4143	0.066	0.4396	0.143
150 ‡	0.4302	0.109	0.4715	0.303
463 †	0.4771	0.338	0.5837	0.923
235 ‡	0.4801	0.357	0.5224	0.643
300 †	0.5023	0.507	0.4337	0.121
428 †	0.5454	0.778	0.5740	0.896
432 *	0.5649	0.865	0.5089	0.552

* Previously significant in space.   † Previously significant in time.   ‡ Novice

Based on the minimum p-value of 0.002, the overall level of significance for the experiment with the space condition is 0.016. For

the time condition, it is 0.644 (minimum p = 0.121). For the entire experiment, the minimum p-value is still 0.002, but it is based on 16 replications, so the overall significance level is 0.032.

A more interesting result with regard to potential applications is an estimate of the reduction in the area that would have to be searched if the responses given by these subjects were used instead of randomly choosing a starting point. This can be computed by comparing the average proportions given in Table 1 with the chance average of 0.50125.

For Subject 837, under the space condition, the average reduction would be 33%. For example, if a search was undertaken for a kidnap victim, and this subject achieved the personal average level of functioning demonstrated in this experiment, 33% less area would have to be searched before the victim was found than if a random starting point was used. Even though only one subject had a significant result, combining all subjects' guesses in the space condition would still give an average reduction of 6.5% in the area searched. Depending upon the application, this reduction could still represent a substantial savings in expenditure of resources. In the time condition however, the results indicate that there would be no change in search time over chance.

In addition to looking at the average reduction in search area, it is of interest for applications to know what percent of the trials would have resulted in a smaller search area than expected by chance. For Subject 837 in the space condition, 18 out of 25, or 72% of all trials resulted in a savings. This means that if this subject were used repeatedly to suggest a starting point for searches, approximately 72% of all targets would be found in less time than average, and 28% would require more than the average. In contrast, a random starting place should result in about 50% above and 50% below average search times. For all subjects combined in the space condition, 104 out of 200, or 52% of all trials resulted in a savings in search area. For the time condition only, 102, or 51% resulted in a smaller search area than would be expected by chance.

IV DISCUSSION AND CONCLUSIONS (U)

(___) The experiments discussed in this report were designed to replicate and extend earlier findings which indicated that selected participants could use psychic means to help search for a hidden target. The computer-assisted search experiment, which served as a direct replication of the experiments conducted in FY 1984 and FY 1986, once again showed promising results. As in the earlier experiments, no subject was able to produce significant results independently in both the time and the space conditions. Further, the two subjects who produced the best results did so in the space condition, which replicated their performance in the earlier experiments. The best subject in the time condition had scored significantly in the time condition in FY 1986, but not in space. In general, those who did well in this experiment (excluding one novice) did so in the same condition for which they had previously scored significantly.

(___) Even though n is small, we were able to speculate that subjects bifurcate into those who can search for fixed targets (space) and those who can identify when to register a guess (time). It would appear that each subject would do best in an experiment which contained only the preferred condition. A study done this year to test that notion produced completely chance results. Thus, it appears that even if this bifurcation does exist, it is best to present subjects with randomly scrambled conditions. Perhaps the knowledge of exactly what the task requires adds an analytical component which is hard to overcome. This has been observed in other psychic functioning, such as forced choice guessing of targets in remote viewing.

(___) This is the third year in which a computer-assisted search experiment has provided evidence that psychic functioning may be of some use in ___ searching for hidden or lost targets. Although such functioning is not completely predictable, it appears to be robust enough, when selected subjects are used, to

significantly reduce the average search time from what it would be if randomly located starting points were used.

(U) The *Atocha* experiment, which was designed to see if self-proclaimed "dowsers" would be able to locate a lost object using a grid overlaid on a map, did not produce a significant finding, although a preliminary experiment showed very promising results. It is difficult to base conclusions on one experiment with a small sample size. However, it appears that whatever produced the functioning with selected subjects in the computer-assisted search in the laboratory did not carry over to the conditions of the *Atocha* experiment.

Final Report--Objective F, Tasks 1a and 1b
Covering the Period 1 October 1986 to 30 September 1987

December 1987

FEEDBACK AND PRECOGNITION DEPENDENT REMOTE VIEWING EXPERIMENTS (U)

SRI Project 1291

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ABSTRACT (U)

Two different precognition experiments were conducted during FY 1987. The first of these involved a well-calibrated viewer (Subject 372) and used natural Bay Area sites as targets. Ten real-time and ten precognitive trials (counterbalanced) yielded no statistical evidence for remote viewing. In the second experiment, four viewers contributed approximately 30 trials each in a similar counterbalanced real-time vs. precognition protocol. In this experiment, however, the target material were photographs from a national magazine. No statistical evidence for remote viewing was observed in this experiment. In a third experiment designed to explore the role of feedback upon remote viewing quality, two of four viewers produced independently significant evidence for remote viewing. A number of speculations are offered as to possible mechanisms including real-time data acquisition and global precognition with noise reduction.

I INTRODUCTION (U)

Since 1973, remote viewing (RV) has been observed under a wide variety of different conditions. A few of many possible examples are coordinate RV* (targeting by geographical coordinates),[1] beacon RV (known person at the remote site),[2] abstract targeting (targeting by the word "target" or by a random number or binary number),[3] and targeting by remote tasking, in which the task is sealed in an envelope which is geographically isolated from the viewer. To first order, all of these (and more) have been demonstrated successfully in laboratory conditions.

The main difficulty in trying to understand the various successes of RV from a fundamental point of view is that RV appears to require a large number of basic theories to explain the variety of observables. How is it possible to describe access to remote information with a single unifying concept when the target has been specified by a complex series of random events, separated in time and space, and these events are completely unknown to the viewer? This problem has been one of the main sources of criticism about the existence of RV, in that nothing else in nature appears to have such properties. (It is beyond the scope of this report to argue this point. It suffices to say that most of the great advances in science contributed to the organization and understanding of seemingly unrelated data. The ultraviolet catastrophe and early atomic spectra are but two examples of the confusion prior to the understanding provided by early quantum theory.)

(U) SRI has been developing a heuristic model of psychoenergetic functioning[4] that has the potential of providing some understanding of the RV confusion described above. It is based upon a concept called precognition. Since the 1930s, the parapsychology literature has been reporting experiments that claim to demonstrate the existence of precognition---remote viewing of target material that had not been specified at the time of the viewing. As yet, there is not a meta-analysis of this literature, but there is a review of the experimental support for

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* (U) References may be found at the end of this report.

1

II METHOD OF APPROACH (U)

A.   (U) Real–Time vs. Precognition Experiment

(U) During FY 1987, SRI conducted two experiments to examine the effects of target generation time in RV data acquisition. The first of these was with a selected viewer using natural locations within 30 minutes driving time from SRI as target material. In the other experiment, four experienced viewers used photographs from the *National Geographic* Magazine as target material. In both experiments the time of target generation (before or after the RV session) was unknown to either viewers or monitors.

1.   (U) The Beacon RV Series

(U) To examine the role of target generation upon out–bound RV experiments, SRI asked an experienced viewer (Viewer 372) to participate in a 20–trial series. Viewer 372 has been calibrated in this particular task in that he/she has demonstrated significant RV performance in all (2) of the beacon experiments conducted at SRI.[11, 12] Furthermore, Viewer 372 has expressed strong preference for this type of experiment rather than those that use photographs as targets.

The target material consisted of 66 natural outdoor locations within a half-hour's drive of SRI. The sites were selected on the basis of the past performance of Viewer 372. Thus, the target selection criteria allowed sites that would be more difficult for novice viewers. The intent was to produce a target pool with a variety of different material. For Viewer 372, the variety could be architectural (and other details) as well as general gestalt features.

a.   (U) Protocol

(U) The viewer and the monitor were blind to both the target pool and the individual target selections. At the beginning of each trial, the viewer and monitor were sequestered in the RV laboratory. The assistant then selected the target generation time and, if appropriate, the target site. The target selection time for each trial was determined according to

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III RESULTS AND DISCUSSION (U)

A.   (U) Real-Time vs. Precognition Experiments

1.   (U) The Beacon RV Series

(U) Table 1 shows the results of the 20-session beacon RV series.

Table 1

(U)   RESULTS FOR VIEWER 372

Condition	Trace	p-value
Real-time	45.5	0.154
Precognition	51.5	0.638

Overall, no condition met the criteria for statistical significance. For Viewer 372, this represents the first time at SRI that a series has *not* met statistical significance out of four attempts (counting each condition as a separate attempt). Given Viewer 372's track record, we allow for some speculation as to possible reasons for the results of this series.

Viewer 372 first participated in a six-trial RV experiment in FY 1980. That study produced four first place matches and two second place matches for a combined p-value of 0.003.[11] His/her second participation was in FY 1986. when twelve beacon RV trials were conducted with an overall p-value of 0.007.[12] Combined with the two efforts in FY 1987 (see Table 1) the average p-value is 0.201. Using an exact calculation,[16] the probability of observing an average p-value of 0.201 in 4 experiments is 0.017. This is consistent with a minimum p-value (0.003) technique[17] which yields 0.012.

There are at least two possible hypotheses for this experiment not reaching significance. The first (and most likely one) is given by Utts.[18] If one is willing to estimate a "hit" rate given that RV

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is real, then it is possible to calculate the probability of observing a significant study. While it is difficult to ascertain the actual "hit" rate for RV, Utts provides an estimate for a similar process--Ganzfeld. For a 10-trial study the probability of observing a significant result is only 15%. (MCE is 5%, of course.)

Secondly, a new variable was introduced by the nature of the protocol. The time between the remote viewing and the feedback was greater than two hours. This represents an order of magnitude increase over our other experiments. The influence of this increase is currently unknown.

2. **The Target Photograph Series**

Table 2 shows the results of the four-viewer real-time vs. precognition experiment. Based on the sum of ranks and their associated p-values, there was no significant evidence of RV in this series.

Table 2

(U) REAL-TIME VS. PRECOGNITION RESULTS [*]

Viewer \ Cond.	Real-time	Precognition	All	Trials rt/pc
009	57 (0.375)	62 (0.625)	119 (0.482)	15/15
105	61 (0.905)	51 (0.473)	112 (0.797)	13/13
177	32 (0.283)	46 (0.415)	78 (0.275)	9/12
454	70 (0.912)	68 (0.862)	138 (0.954)	15/15
Totals	220 (0.203)	227 (0.472)	447 (0.179)	52/55

[*](U) Sum-of-ranks (p-value)

Based on the past performance (in real-time RV) of these particular viewers, the results are disappointing. Yet, because of their record, we speculate upon possible reasons why this experiment did not reach significance.

◄___▸ As described above, an estimate (provided by Utts[18]) of the probability of a significant 10-15 trail RV series is approximately 15%. Yet it remains surprising that no significant series was observed in eight attempts.

◄___▸ A possible problem is that this particular experiment was conducted after the successful tachistoscope experiment (described below). That experiment required 40 trials from each viewer. Since this experiment required 30 trails from each viewer, a given viewer had to produce 70 remote viewings in approximately 80 days.

◄___▸ In summary, then, we were unable to demonstrate a significant RV phenomenon in the real-time vs. precognition experiments. Considering the vast amount of data in the literature that claim the existence of precognition, we recommend that the study should be continued at a later date.

B.   (U) The Tachistoscope Experiment

(U) Table 3 shows the sum of ranks and associated p-values for the tachistoscope feedback experiment.

Table 3

(U)   TACHISTOSCOPE FEEDBACK EXPERIMENT[*]

Viewer	Result
009	131 (0.012)
105	182 (0.962)
137	159 (0.484)
177	104 (3.5×10^{-6})

[*] (U) Sum-of-ranks (p-value)

◄___▸ Viewers 009 and 177 produced independently significant results. There are a number of ways in which we could combine these data, but the most conservative is a binomial calculation assuming an event probability of 0.05. Two successes in four trials corresponds to an exact

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p-value of 0.014. A more realistic estimate is provided by a minimum p-value (3.5×10^{-6}) technique which yields 1.4×10^{-4}.[16] The important point, however, is that this experiment produced strong evidence for an informational anomaly.

Figures 3 and 4 show RV quality (1 is low, 7 is high) plotted against intensity of the feedback for Viewers 009 and 177, respectively. Shown also is the regression line for each viewer. These figures are to be compared to Figure 2, the idealized expectations. The result that is easiest to understand in Figure 2 is the positive correlation showing increased RV performance with increased feedback intensity. We did not observe any such correlation with either of the significant viewers. In fact, the linear correlation coefficients were not significant.

The lack of positive correlation in the light of significant evidence of RV complicates the interpretation considerably. The most obvious conclusion is that the viewers obtained their data in real time and not from the later feedback. But, if the argument posited in Section I is correct (that precognition is unfalsifiable), then the experiment was doomed to failure from the start. Another equally likely hypothesis is that the underlying assumption that cognitive awareness constitutes feedback information is incorrect. If this were true, we would expect to see no correlation with intensity even if the precognition model were correct.

Viewer 177's average sum of ranks was significantly ($p < 0.02$) greater than his/her sum of ranks in the real-time vs. precognition experiment. Viewer 009 produced a strong and similar trend that obtained a probability against chance of 0.08. Assuming these differences are meaningful, we can speculate that something in the tachistoscope experiment resulted in a significant noise reduction. Possibly, short exposures to feedback material allow the viewer to focus only upon the major items and thus reduce the noise--the precognition model is assumed here. In any event, continuing this experiment would shed light on the difficult feedback interpretation problem.
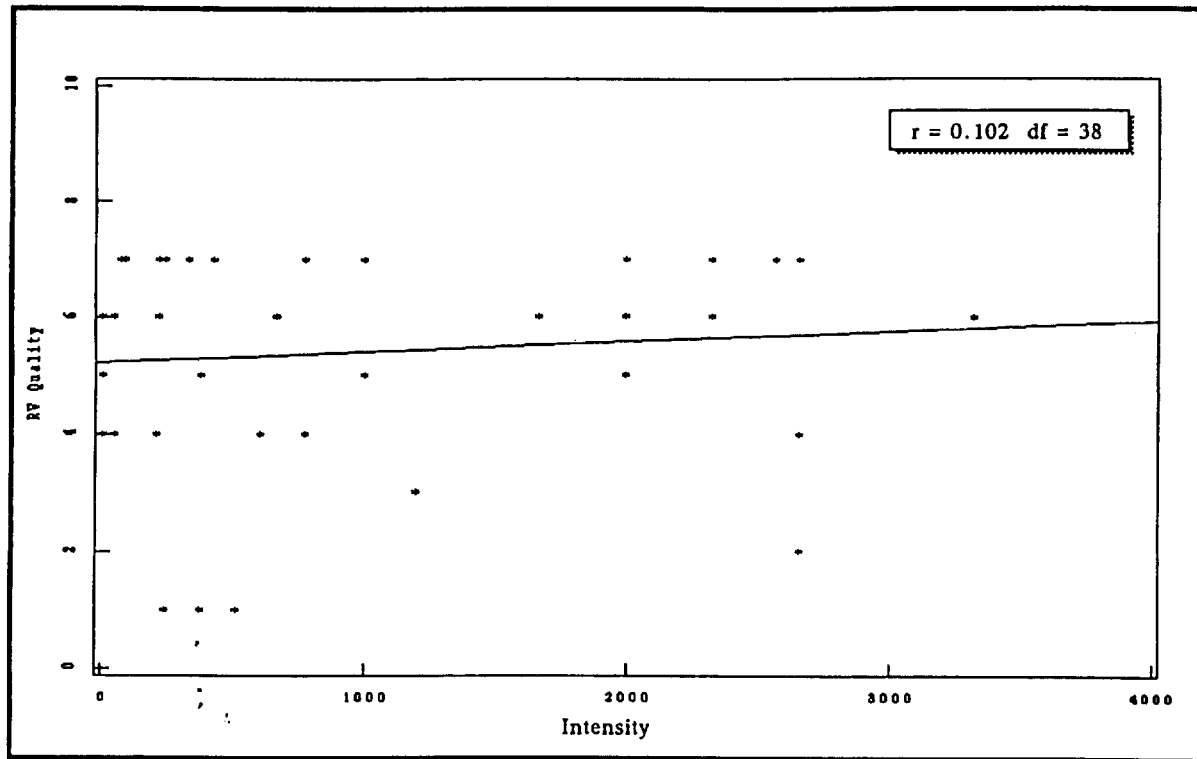
13

FIGURE 4 (U) RV QUALITY VS. FEEDBACK INTENSITY: VIEWER 177

Final Report

December 1982

REVISED JULY 1983

A REMOTE VIEWING EVALUATION PROTOCOL (U)

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(U)

the transcripts in order of the best to least match for each of the n
targets. A simple numerical counting procedure is then used to estimate
the likelihood that the judge's transcript/target matches are by chance
alone.[2] This early technique contained little systematic structure for
determining the final order of matches.

The first step toward systematizing the rank order judging
procedure was to preprocess the raw data in the transcript by "concep-
tualizing" both the verbal and the pictorial responses. Conceptualizing
a transcript requires an analyst to paraphrase the transcript into a list
of coherent statements. This concept list is then compared and scored
concept-by-concept to each of the targets in the experiment. The resulting
scores are averaged for each response, and all responses are rank-ordered
on the basis of these scores.[3] This improved analysis procedure was applied
to a number of experiments within the Technology Transfer Task ▮▮▮▮▮▮

(U) The problem with the above technique is that there are no guide-
lines as to how the analyst should paraphrase the transcript; furthermore,
the method in which the concepts are to be assessed against the targets
remains undefined. The purpose of the Evaluation Task in FY 1982 was to
identify a procedure that corrected these deficiencies.

3

IV   CONCLUSIONS (U)

A protocol has been developed to address the relative evaluation portion of the overall RV transcript assessment problem. As a demonstration of the technique, we provide in Appendix A an analysis of a series of four remote viewings that were performed as calibrations   In this series the remote viewing products were of relatively high quality, but nonetheless require a sensitive technique to differentiate because of the similarity of the targets and, hence, of the descriptions. (The series was chosen primarily for that reason.) Application of the assessment technique resulted in the correct blind matching (highest scoring in matches versus cross matches) of three of the four.

(U) Appendix B is a one page, step-by-step procedure for the application of this evaluation technique.

(U) The material in this document thus constitutes an instruction manual or protocol for application of a step-by-step procedure for quantitative assessment of the relative target/transcript correlations of a series of transcripts matched into a series of targets.

On 14 December 1981, four coordinate remote viewings were con-
ducted as calibrations during a\ _____\ remote viewing session tar-
geted \sites of interest. '

These four calibrations were
chosen as a test bed for the evaluation procedure for the following
reasons, (1) they were conducted in an *appropriate* setting, and (2) the
targets had many similar features, and would thus provide a sensitive
test of the protocol.

Figures A-1 through A-4 are the transcripts that were presented
to the analyst. They are exactly as they were when collected, except that
the coordinates have been removed. Figures A-5 through A-8 are the
National Geographic magazine targets that were used during the calibration
sessions. Finally, the task coordinator provided Tables A-1 through A-4
as target element relevance scales for the four targets in Figures A-5
through A-8. This completes the information that was given to the analyst,
and thus the analysis was carried out blind as to the matching target/
transcript pairs.

(U) Table A-5 is a compilation of the completed work sheets that
were used by the analyst in this evaluation. They are shown in groups
by session number, and alphabetized on the four targets. (The task
coordinator first randomized the transcript order then assigned the session
number used above.) For each of the transcripts, the analyst simply
included all phrases and all drawings as concepts. For example, seven
concepts were found during Session 2.

(U) All concepts were then analyzed as described in the text. The
matching target element, its relevance rating, and the computed score are
shown for all possible combinations of transcript/target pairs in Table
A-5. The score distributions and their resulting weighted averages are
also shown in Table A-5.

IV   CONCLUSIONS (U)

A protocol has been developed to address the relative evaluation portion of the overall RV transcript assessment problem. As a demonstration of the technique, we provide in the following Appendix an analysis of a series of four remote viewings that were performed as calibrations

In this series the remote viewing products were of relatively high quality, but nonetheless require a sensitive technique to differentiate because of the similarity of the targets and, hence, of the descriptions. (The series was chosen primarily for that reason.) Application of the assessment technique resulted in the correct blind matching (highest scoring in matches versus cross matches) of three of the four.

(U)   The material in this document thus constitutes an instruction manual or protocol for application of a step-by-step procedure for quantitative assessment of the relative target/transcript correlations of a series of transcripts matched into a series of targets.

(⸲On 14 December 1981, four coordinate remote viewings were conducted as calibrations.

These four calibrations were chosen as a test bed for the evaluation procedure for the following reasons, (1) they were conducted in an application setting, and (2) the targets had many similar features, and would thus provide a sensitive test of the protocol.

(Figures A-1 through A-4 are the transcripts that were presented to the analyst. They are exactly as they were when collected, except that the coordinates have been removed. Figures A-5 through A-8 are the National Geographic magazine targets that were used during the calibration sessions. Finally, the task coordinator provided Tables A-1 through A-4 as target element relevance scales for the four targets in Figures A-5 through A-8. This completes the information that was given to the analyst, and thus the analysis was carried out blind as to the matching target/ transcript pairs.

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Final Report
Covering the Period October 1982 to September 1983

November 1~

FREE WORLD PSYCHOENERGETICS
RESEARCH SURVEY (U)

SRI Project 4028-2

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I INTRODUCTION (U)

◀ ___ This study is an overview of psychoenergetics research ef-
forts in those Free-World countries that have published articles in the
open literature. The data are restricted to foreign work and are derived
from a comprehensive survey of eight major parapsychological journals,
spanning a period from 1972 until the present. Two hundred and thirty-
three articles were evaluated and computerized in a Data Base Management
System (DBMS) according to six major topics or keywords and 16 subtopics
that were chosen specifically to reflect those areas considered to be of
principal interest   The six principal
topic headings may be understood in general terms according to the fol-
lowing set of definitions:

- Remote Sensing: The acquisition and description, by mental
  means, of information blocked from ordinary perception by dis-
  tance or shielding, and generally believed to be secure against
  such access.*

- Remote Action: The production of physical effects, such as the
  perturbation of instrumentation or equipment that appears to be
  well shielded against, or otherwise inaccessible to, human
  influence.*

- Reliability/Screening: Spans a wide range of prescriptive,
  methodological experiments or experimental protocols; also in-
  cludes studies involved in the identification of correlates
  (e.g., physiological, psychological, and so forth) that may en-
  hance psychoenergetic functioning and/or facilitate the selection
  of talented subjects.

- Theoretical Models: Various paradigms and plausibility arguments,
  which have been advanced within physics and other disciplines
  that endeavor to explain observed phenomena.

- Healing: The ability of an agent to cure illness or to influence
  positively the physical state of a biological system.

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*(U) H. E. Puthoff, R. Targ, and E. C. May, "Psychoenergetic Research:
Suggested Approaches," SRI White Paper, SRI International, Menlo Park,
CA (1 May 1978), SRI Proprietary.

1

- **Miscellaneous**: Encompasses all topics that were determined to possess little or no immediate ¡   interest (e.g., "hauntings," detection of the human aura, and so forth).

(U) Table 1 provides a summary listing of the Free-World countries (and their respective research facilities) that have published articles in the open literature for a given topic. This table should be examined with the attendant caveats that (1) no evaluation of the quality of any published research was undertaken for the purposes of this study and (2) a given article may have been counted more than once if it had been determined that its principal research objectives encompassed more than one major topic.

(U) By way of summation, the following observations may be derived from a general analysis of Table 1, and by further utilizing the sub-keyword capabilities of the DBMS:

- England and The Netherlands published equivalent numbers of articles on the topic of "remote sensing," followed by West Germany. The following represents a distribution of articles according to remote sensing subtopics (Table 2).

- The Netherlands, West Germany, and Scotland, respectively, are indicated as performing the majority of the research in "remote action." The distribution of interest with regard to the sub-topics within this major category is as follows (Table 3).

- The Netherlands, England, and Scotland, respectively, represent the primary investigators of techniques both for enhancing the reliability of psychoenergetic functioning and/or for identifying talented subjects. Within the major category of reliability and screening, the published articles for these three countries may be further subdivided into the following distribution of specific subtopics (Table 4).

- West Germany and England, followed by The Netherlands and Scotland, respectively, have advanced the greatest number of published theories and models. These may be further delineated according to the following subtopics (Table 5).

- Very little work has been published on "healing" in this par-ticular selection of journals; this is not to conclude that this kind of research categorically is not occurring, but that it may be published elsewhere in a different genre of periodical.

2

(U) Second, the article had to have indicated the foreign facility at which the published research was performed, in order for the article to have been counted as "foreign." The reason for this criterion, of course, is that American parapsychologists publish in foreign journals, and foreign parapsychologists publish in American journals; an accurate assessment of foreign work, therefore, cannot be obtained by simply surveying the foreign journals. The advantage of this procedure is that, for this study, U.S. publications could be reliably excluded from the data base. The disadvantage was that valid foreign research was also rejected from the data base--if the facility at which the research was performed was not listed in the article.

B.   (U) <u>Keyword System Development</u>

The computerized article keywording system was developed specifically to address those topics deemed to be of primary interest' The keywords, themselves, were chosen to reflect the principal areas'   'in psychoenergetics, as determined from previous '   'studies. By applying this set of keywords, then, to the Free-World data base, a primary overview of Free-World facilities involved in similar or commensurate research,   , As has been mentioned previously, it was not within the scope of this document to evaluate the efficacy of all of the research efforts in the Free-World countries   but merely to highlight the principal Free-World facilities that are researching those areas in psychoenergetics that are of primary interest

C.   (U)   Keyword System Application

(U)   For the purposes of this study, the articles were sorted according to (1) the six major keyword headings, only, for the presentation of data pertaining to all countries (cf, Section 3, "Data" below); and (2) further subtopic classifications for a chosen subset of the Free-World countries (cf, Section I, "Introduction" above).   Table 6 provides the operative definitions for the major keywords and their respective subtopics.

In addition to query capability on subtopics within a given major topic, combinations of major and subtopic keywords may be utilized across topics to satisfy relatively specific query requirements.   For example, a keyword combination of "Remote Action," "Micro," "Reliability/ Screening," and "Physiological Correlates" would typically select out articles from the data base that dealt with experiments in random-number generator psychokinesis, during which aspects of the subject's physiological state (e.g., galvanic skin response) were monitored.

(U)   In conclusion, there are three principal advantages to the current design of the keywording system in particular, and the DBMS in general, in that they allow (1) continual expansion of data and modes of data classification; (2) "horizontal" surveying capability across, for example, many countries or topics; and (3) "vertical" in-depth surveying capability through increasingly finer topic discriminators.

Table 6

(U) OPERATIVE DEFINITIONS OF MAJOR KEYWORDS

Major Keyword	Subtopic Keyword
Remote Sensing--The acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding, and generally believed to be secure against such access	Precognition: acquisition of information about an event prior to the occurrence of the event Altered States: psi modalities in the Ganzfeld, lucid dreams, hypnosis, and so forth Dowsing or biophysical effort (BPE) Remote viewing (RV)
Remote Action--The production of physical effects, such as the perturbation of instrumentation or equipment that appears to be well shielded against, or otherwise inaccessible to, human influence	Micro: interactive effects produced at the molecular or atomic levels Macro: effects or perturbations typically observable without the aid of instrumentation Biological: production of measurable changes of state in biological systems
Reliability/Screening--Spans a wide range of prescriptive, methodological experiments or experimental protocols; also includes studies involved in the identification of correlates that may enhance psychoenergetic functioning and/or facilitate the selection of talented subjects	Methodology Physiological Correlates Psychological Correlates Perceptual Correlates Physical Correlates
Theoretical Models--Various paradigms and plausibility arguments advanced within physics and other disciplines that endeavor to explain observed phenomena	Mathematical/Physical Psychological Philosophical Physiological
Healing--The ability of an agent to cure illness or to positively influence the physical state of a biological system	No subtopics as yet implemented

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10 January 1980

Quarterly Progress Report
Covering the Period 1 October to 31 December 1979
SRI International Project 7560

NIC TECHNIQUES (U)

SRI 0-4299

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COPY 3 of 5

raw data, all of them equally likely under the null hypothesis that the viewer's remote viewing attempts produce nothing but vague and general descriptions and/or occasional chance correspondences with various target sites. Each matrix has its associated sum on the matrix diagonal corresponding to a possible alignment of targets.

The significance level for the experiment is then determined by counting the number of possible matrices that would yield a result (diagonal sum) equal to or better than that obtained for the matrix corresponding to the key, and dividing by n! This ratio gives the probability of obtaining by chance a result equal to or better than that obtained in the actual judging process. For the results shown in Table 2 in the body of the report, for example, we find, by direct computer count of the 5! matrices obtained by interchanging columns, that the probability of obtaining equal or better matching by chance is

$p = 1/5! = 0.0083.$

Final Report--Objective E, Task 1
Covering the Period 1 October 1985 to 30 September 1987

December 1987

POSSIBLE PHOTON PRODUCTION DURING A REMOTE VIEWING TASK: A REPLICATION EXPERIMENT (U)

By:

Prepared for:

SRI Project 1291

Approved by:

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This document consists of 19 pages

SRI/GF-03

Copy 1 of 3

ABSTRACT (U)

Attempting to verify a claim by the Chinese that light is emitted in the vicinity of correctly identified remote viewing (RV) target material, we repeated an experiment first published in FY 1984. In that earlier experiment, a state-of-the-art, ambient temperature, photon counting system was used to monitor the target material (35-mm slides of *National Geographic* Magazine photographs). The statistical measure derived from the photon counting apparatus in that study showed a significant positive correlation with the RV results ($p \le 0.035$). That is, when the remote viewing was good, there was an increase in the signal detected by the photon counting system. In addition, we observed two anomalous pulses having a signal-to-noise ratio of about 20:1 to 40:1. In the present experiment (FY 1987), we improved all hardware aspects of the previous work, substantially reducing the background noise level and improving shielding against artifact. In addition, analysis of the remote viewing indicates that three out of the four viewers produced independently significant results. Our analysis of the photomultiplier tube (PMT) data shows no evidence of any anomalous high count rate pulses, no evidence of any effect on the PMT output during the RV session, and no evidence of any significant correlation between RV performance and PMT output. We conclude that (1) the effect proposed by the Chinese is artifactual in nature.

III RESULTS (U)

A. (U) Remote Viewing Results

(U) Each RV session was judged using an FM analysis. The FM is defined as the product of two measures: accuracy and reliability. The accuracy of an RV response is the fraction of the target material that is described correctly. Reliability is the fraction of the response that is correct. Tables 1 through 4 show the RV results for each trial. The session number (9001.cr, for example) incorporates a code for each viewer as well as the chronological sequence of viewings.

Table 1

(U) REMOTE VIEWING RESULTS FOR VIEWER 009

Session	Figure of Merit	p-value
9001.lg	0.5714	0.0238
9002.lg	0.3810	0.1961
9003.lg	0.4444	0.0497
9004.lg	0.3333	0.3650
9005.lg	0.0667	0.9233
9006.lg	0.3556	0.2697
Overall p $\leq$ 0.0450		

Table 2

(U)   REMOTE VIEWING RESULTS FOR VIEWER 105

Session	Figure of Merit	p-value
9001.rs	0.4571	0.0412
9002.rs	0.1667	0.3486
9003.rs	0.1600	0.3618
9004.rs	0.3333	0.1039
9005.rs	0.0000	1.0000
9006.rs	0.3810	0.0475
Overall p $\leq$ 0.0488		

Table 3

(U)   REMOTE VIEWING RESULTS FOR VIEWER 177

Session	Figure of Merit	p-value
9001.hs	0.4444	0.2430
9002.hs	0.1143	0.9579
9003.hs	0.3810	0.2978
9004.hs	0.5000	0.2392
9005.hs	0.5952	0.0677
9006.hs	0.6429	0.0136
Overall p $\leq$ 0.0385		

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Table 4

(U)   REMOTE VIEWING RESULTS FOR VIEWER 807

Session	Figure of Merit	p-value
9001.cr	0.0000	1.0000
9002.cr	0.3333	0.2267
9003.cr	0.5208	0.0240
9004.cr	0.0833	0.7494
9005.cr	0.3750	0.1321
9006.cr	0.1333	0.5911
Overall p $\leq$ 0.1895, n.s.		

(U) From the FM analysis performed for our FY 1984 experiment, we determined that by computing the p-value for each FM we could determine an average p for each viewer and for all sessions combined. The overall probability of obtaining that average p-value was then calculated, either by an exact method for small numbers of sessions[7] or by using the central limit theorem for greater than 20 sessions.[8] In the current analysis, an additional test of significance, the Fisher Chi-square technique,[8] has been added to supplement the probability associated with average p-value for a given series.

The overall p-values given for each viewer's series as shown in Tables 1 through 4 were calculated using the Fisher Chi-square technique. Averaging all p-values for all sessions yielded p(avg.) = 0.3437. Using the central-limit theorem, the probability associated with that average value is p $\leq$ 0.004. Using the Fisher Chi-square method, a p-value of $\leq$ 0.0036 was calculated for all 24 sessions, indicating good agreement between techniques. We observed that three out of the four viewers independently produced significant results. Such an outcome is an extremely rare event. If the probability of success is p $\leq$ 0.05, the binomial probability of obtaining three out of four successful results is p $\leq$ 0.00048. These individual and overall remote viewing results are substantially better than were achieved in the FY 1984 study.

REVISED 5/27/80

April 1980

Final Report

Covering the Period from 1 May 1979 to 31 March 1980

SPECIAL ORIENTATION TECHNIQUES (U)

DRAFT

SRI Project 8465

COPY 1981

333 Ravenswood Ave • Menlo Park, California

I OBJECTIVE (U)

The objectives of this program are the optimization of rea
viewing (RV) protocols, the orientation of selected individuals to reacn
enhanced levels of ability, and the establishment of screening procedures
to enlarge the population from which individuals are selected.

II INTRODUCTION AND SUMMARY (U)

A. Basic Program Structure (U)

In this report we present results and assessments of a one-year program for the optimization of remote viewing with selected individuals. The objective of this program was to familiarize these individuals with the SRI remote viewing protocols, to produce enhanced levels of ability, and to establish screening tests and procedures for enlarging the population from which such individuals are selected.

(U) For the past seven years SRI International has been investigating a human perceptual/processing ability called remote viewing (RV). This is the subject matter of the current study, and it pertains to the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding and generally considered to be secure from such access.

At the start of this program, six individuals were chosen to participate in an RV technology transfer. With the exception of one of the six who had participated in an ESP study several years earlier, these participants when selected were inexperienced with regard to paranormal perception in general, and RV in particular. A variety of different training protocols were examined with the goal of helping the participants familiarize themselves with the SRI RV techniques. Formal assessment and transfer series were carried out with each of the six participants, in which they were asked to use mental imagery processes to describe distant geographic locations (bridges, roads, buildings, etc.), hidden 35-mm slides of similar sites, and objects placed in a controlled-access location. Several other information series were carried out. These are all described in later sections of this report.

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(U) Four of the six participants each produced results that departed significantly from chance expectation in assessment series that were formally judged by very strict criteria. The other two produced results in the assessment series that were also suggestive of paranormal perception. Overall, this result constitutes highly significant performance ($p = 4 \times 10^{-5}$, or odds of one in 25,000 of such a result occurring by chance).

_ ▶ We are including in this introduction one illustrative example of an RV trial for a real-time San Francisco Bay Area outdoor target. The viewer, No. 372, who contributed this data, produced a mixture of responses, some excellent and some noncorresponding, in his two series at SRI. Several of his descriptions were among the best obtained in the program, and his overall consistency in performance resulted in both of his individual series reaching statistical significance.

(U) Current and proposed programs are directed at training participants to bring their RV ability under more conscious control, and to learn to recognize and overcome the factors that limit RV reliability. These limiting factors center around the generation of erroneous data by the viewer from his memory and imagination. An example of the successful resolution of such noise is the following.

(U) The viewer was closeted with an interviewer in the laboratory at SRI to await the target team's arrival at their destination. The target was the Stanford Art Museum on the Stanford campus. The viewer made several tentative outline sketches of different shapes that he said were "associated with the face of a building." Finally, he made a careful perspective drawing of the building he was visualizing. A photograph of the target is shown in Figure 1(a), and the viewer's drawing is shown for comparison in Figure 1(b). The viewer's narrative described the face of the building as follows: "There is a white and black pattern, a white

3

(U)

and black striped pattern." ... "It's like an inverted rectangle, with a square fastened to the back, or a rectangle laid down behind it." "Like two buildings in one. One building." "I have the sense that there is dirt by the walls ...." He went on to talk about trees, flowers, and bicycles, all of which can be found directly in front of the target building.

B. Task Summary (U)

    (U) In the following we briefly summarize results of the various perceptual tasks that were undertaken:

- (U) Bay Area Target Site Remote Viewing. In the Phase One activities, six RV trials with local San Francisco Bay Area sites as targets were carried out with each of the six viewers. In these six series, four of the viewers each produced results that were independently significant ($p < 0.05$), making the series as a whole strongly significant ($p = 4 \times 10^{-5}$; odds of one in 25,000).

- (U) Remote Viewing of 35-mm Slides. These trials were carried out under varying conditions for five viewers in Phase Two. One viewer, who generated significant results in Phase One, was again independently significant in his description of distant slides. A second viewer, also producing significant results in Phase One, produced drawings in Phase Two that were formally judged to have significant correlations with the slide targets, although his verbal material did not. A third viewer was asked to describe slides before they were chosen, that would be shown to him at a later time. His results were suggestive of success ($p = 0.1$) but not statistically significant. Similar trials with two other viewers were also encouraging but nonsignificant.

- Remote Viewing into a [Controlled] Area. A viewer who was successful in the slide viewing trials also carried out a series using extended remote viewing, in which he spent more than an hour on each of six attempts to describe objects held in a [ ] location,

        Controlled

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C.   Report Organization (U)

(U)   In Section III we describe the SRI RV protocols, including results from the past, and our expectations for the present program. We also discuss the screening procedures used to select viewers and the judging procedures used to evaluate the results of the investigations carried out in the current program.

(U)   In Section IV we describe the first phase of the study, in which we systematically carried out RV trials with the participants to obtain baseline data from each under similar experimental conditions.

In Section V we present the exploratory work carried out in Phase Two in an effort to extend the repertoire of RV tools available

(U)   Our conclusions and recommendations are presented in Section VI.

VI CONCLUSIONS AND RECOMMENDATIONS (U)

In this report we have presented the results and assessments of a one-year program for the optimization of remote viewing with selected individuals. To meet the objectives of the program we have familiarized these individuals with the SRI RV protocol; pursued the development of enhanced levels of RV ability through exposure to several different orientation/training strategies, and established screening tests and. procedures for enlarging the population from which such individuals: are selected.

Our principal observation in working with the six volunteers is that we have found considerable evidence for remote viewing functioning among them. In the basic local-site RV-familiarization task (Phase-One study), four of the six participants produces results that were individually statistically significant ($p < 0.05$),[*] rendering the series strongly significant as a whole ($p = 4 \times 10^{-5}$, or odds of one in 25,000). (An entire summary of program data is shown in Table 5.)

A second observation from that study is that in general, there is more variability from trial to trial for a given viewer than there is between the viewers themselves. There are no viewers in the group who have not shown some evidence for remote viewing, even though some of their individual series may not have reached the $p < 0.05$ level of departure from chance expectation.

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[*] (U) In fact, each of these four series exceeded this requirement by more than an order of magnitude, reaching significance at the $p = 0.003$ level or better.

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Table 5

| |PROGRAM SUMMARY (U)

Remote Viewer	Local Bay Area Sites	Real Time Slides	Future RV Slides	Extended RV (Objects)	Alphabet	Coordinate RV
155	NS*	NS	NS	--	--	--
292	NS	NS	NS	--	--	--
372	<0.003†	0.017	--	--	CS‡	--
468	<0.003	--	NS (p = 0.1)	--	--	--
518	<0.003	0.04 (pictorial) 0.075 (verbal & pictorial)	--	p = 0.05 (one judge) NS (2nd judge)	--	0.008
690	<0.002	--	--	--	--	--

* Nonsignificant result.

† Probability of obtaining result by chance. $p \leq 0.05$ is accepted standard threshold for labeling a result significant, that is, non-chance.

‡ Clearly significant, but difficult to obtain precise probability value.

With regard to screening:

(1) The individuals chosen to participate in the program were pre-screened (_____) from a population of 250 potential candidates, using broad personality profile guidelines recommended by SRI, with final selection determined on the basis of interview by the SRI project leaders (R. T. and H. P.). The fact that the overall study was successful lends support to the effectiveness of this initial screening-by-profile procedure.

(2) The details of the results of the program indicate that a half dozen local-site RV trials may constitute a meaningful screening-by-performance procedure to separate the more reliable from the less reliable viewers. In order for screening-by-performance to be successful, it is necessary that the performance of a viewer be relatively consistent. We find that those individuals who were the most successful in the Phase-One trials, were also the most successful in Phase-Two, even though different remote viewing tasks were pursued. Of the four successful viewers in Phase-One, two produced significant results and one near-significant (the fourth was not available for the Phase-Two study). The two viewers from Phase-One that were least successful there (not reaching significance) again did not reach significance in Phase-Two. Although the sample is too small to be definitive, it appears that the Phase-One local-site RV series itself offers evidence of constituting a useful screening-by-performance procedure.

The data indicating that a viewer can describe an individual slide as it is shown on a screen shows that targeting on high-resolution transient targets (charts, maps, etc.) is not out of the question. This, coupled with our findings that a viewer may be able to describe and identify alphabet letters is a most encouraging development, and one deserving of further work. Extension of the RV process to include high-resolution material, especially with a reading ability, would constitute a significant breakthrough!

Certain of the individual responses in the FRV (future remote viewing) series, both with slides and with local sites as targets, appeared to give striking evidence of contact with the target. However, the trial-to-trial reliability was low and no series reached statistical significance. Therefore, although individual results were encouraging, no definitive statement can be made on the basis of this short study. Given its obvious applications potential, should its existence be capable of unambiguous verification, we consider it a high-priority item for further exploration.

In the extended remote viewing (ERV) trials a viewer was able in each trial of the series to identify significant elements of an object placed in various locations.

In these experiments the remote viewer worked alone over extended periods of time (up to three hours). At a minimum, the good results indicate that the RV process is not so fragile that it must be carried out under rigidly-specified conditions, since in this case an alternative style was in use and the results continued to be reliable. Further work would be required, however, before a definitive comparison of RV and ERV could be made.

Finally, the encouraging results obtained in the CRV (coordinate remote viewing) trials indicates that comparable accuracy and reliability can be expected from experienced viewers targeting either on the basis of a beacon person at the target, or on the basis of geographical latitude and longitude alone. As a by-product of the CRV study, which involved the use of special procedures being developed in another program for reliability enhancement, the high-quality output provided additional confirmation as to the effectiveness of certain new approaches being taken with regard to monitor/viewer interaction and control of the RV environment.

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:To take advantage of the most recent developments in remote viewing, and to achieve the goal of continuing to develop remote viewing   , we strongly recommend further development of capabilities in the following areas:

- Applications of Remote Viewing. A training procedure has been developed that appeares to greatly increase both the accuracy and reliability of remote viewing by coordinates. This technique should continue to be examined, and applied to targets

- Effects of Feedback. An extensive examination should be made of the necessity for providing feedback in remote viewing trials. A systematic variation in the presence or absence of feedback should be used to determine the importance of this factor.

- Target Demarcation. Coordinate remote viewing experiments should be carried out in which the target is demarcated by means of various types of coordinates(   ) This should be done in order to discover the part played by the target coordinate in determining remote viewing accuracy.

- Audio Analysis. In an effort to separate correct from incorrect data available from taped subject descriptions of remote viewing target sites, the use of speech and audio analysis techniques should be investigated as a tool to provide selective editing. This should include semantic analysis, in which analysis of written transcripts are carried out to look for variations in grammar, style, or vocabulary to help separate correct from incorrect statements in the RV transcript.

- Tracking. Further effort should be pursued to perfect the RV process whereby, instead of demarcating a location to obtain a target description, one provides a target description and asks for location   SRI has under development certain strategies involving FRV feedback, computer averaging of multiple trials, and so forth, which appear from pilot efforts to hold promise.

- Spatial Resolution. A study should be carried out to determine the extent to which it is possible to aid

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IV   CONCLUSIONS (U)

A protocol has been developed to address the relative evaluation portion of the overall RV transcript assessment problem. As a demonstration of the technique, we provide in the following Appendix an analysis of a series of four remote viewings that were performed as calibrations   In this series the remote viewing products were of relatively high quality, but nonetheless require a sensitive technique to differentiate because of the similarity of the targets and, hence, of the descriptions. (The series was chosen primarily for that reason.) Application of the assessment technique resulted in the correct blind matching (highest scoring in matches versus cross matches) of three of the four.

(U)   The material in this document thus constitutes an instruction manual or protocol for application of a step-by-step procedure for quantitative assessment of the relative target/transcript correlations of a series of transcripts matched into a series of targets.

viewers in learning to read hidden and distant printed
material that is blocked from ordinary perception.

- Temporal Resolution. An ERV effort should be pursued
  to determine the accuracy of remote viewing as a function
  of time for future targets.

- ELF Experiments. Since one of the prevalent hypotheses
  for paranormal perception requires the use of an ELF
  electromagnetic carrier, we suggest carrying out
  definitive experiments to examine this hypothesis
  (e.g., by using ELF generators as beacons), and to
  provide analyses correlating data from our past data
  base with the daily record of geophysical parameters
  known to affect ELF propagation.

- Theoretical Studies. Modern physics offers several
  mathematical descriptions of reality that may also
  prove to be testable descriptions of paranormal
  perception in general, and remote viewing in particular.
  We recommend work with leading physicists who have
  agreed to consult for SRI on these theoretical problems,
  in an effort to develop a physical understanding of the
  phenomena we observe in the laboratory and in the field,
  and to apply this knowledge to improve remote viewing
  functioning.

- Technical Meetings. SRI proposes to host private quarterly
  conferences to bring together selected U.S. scientists
  and government representatives who are concerned with the
  technical issues in psychoenergetic research.

Successful pursuit of the above priority items could be expected
to result in an increased reliability and breadth of utility of the RV
function

Final Report
Covering the Period October 1981 to October 1982

December 1982

A REMOTE VIEWING EVALUATION PROTOCOL (U)

SRI Project 4028

Approved by:

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in the time condition, but the level of significance for the one subject rendered the entire experiment significant.

This is the third laboratory replication of this experiment. In each experiment, there were significant results which could have been useful   . The best subject in the FY 1987 experiment showed a reduction in the area that would need to be searched in 72% of the trials in the space condition, with an average reduction in area of 33%. Previous experiments showed even greater reductions. In real-world applications, this could represent a substantial savings in resources. However, the skill has not been shown to be completely robust, and more experimentation should be done before attempting these applications.

(U) A second "search" experiment was conducted in FY 1987 to see if self-proclaimed dowsers could "find" a lost ship by searching a grid which had previously been keyed to a map. The object of the search was a sunken Spanish galleon called the *Atocha*, which was actually found in 1985. The experiment was carried out with two sets of 25 trials for each of five participants, but failed to produce a single significant result.

ABSTRACT (U)

(U) One reported psychoenergetic skill, known to the general public as "dowsing," is the ability to locate lost or hidden items of interest. In an effort to bring this putative ability that we call "search" into the laboratory, a computer–assisted search (CAS) experiment was conducted in FY 1984 and again in FY 1986. Participants scanned a computer graphics display and attempted to locate a hidden computer–generated target. In each experiment, two conditions were randomly interchanged in a balanced protocol: (1) the target was fixed in space (space condition), and (2) the location of the target was randomly shifted several times each second (time condition). Both the subjects and the experimenter were blind to the condition on each trial.

In FY 1984, five of seven participants demonstrated an above chance ability to find targets in one of the two conditions: three in the time condition and two in the space condition. Of the 36 participants in the FY 1986 experiment, two showed above chance results in the space condition and six in the time condition. No participant in either experiment was able to produce results in both conditions independently.

A follow-up experiment was done in FY 1986 to see if subjects would produce better results if they were only presented with the single condition for which they had done well in the original experiment. None of the eight subjects who completed this "single condition" experiment scored significantly.

In FY 1987, an experiment was conducted which successfully replicated the original FY 1986 finding. Of eight participants (six experienced and two novices), the two who scored best in the space condition had previously been successful in that condition, and the one who scored best in the time condition had previously been successful in that condition. This suggests that participants are likely to consistently do well in one condition or the other, but not both. Only one of the eight participants scored significantly in the space condition, and none

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Final Report--Objective D, Task 1, and
Objective G, Task 1
Covering the Period 1 October 1985 to 30 September 1987

December 1987

COMPUTER-ASSISTED SEARCH (U)

SRI Project 1291

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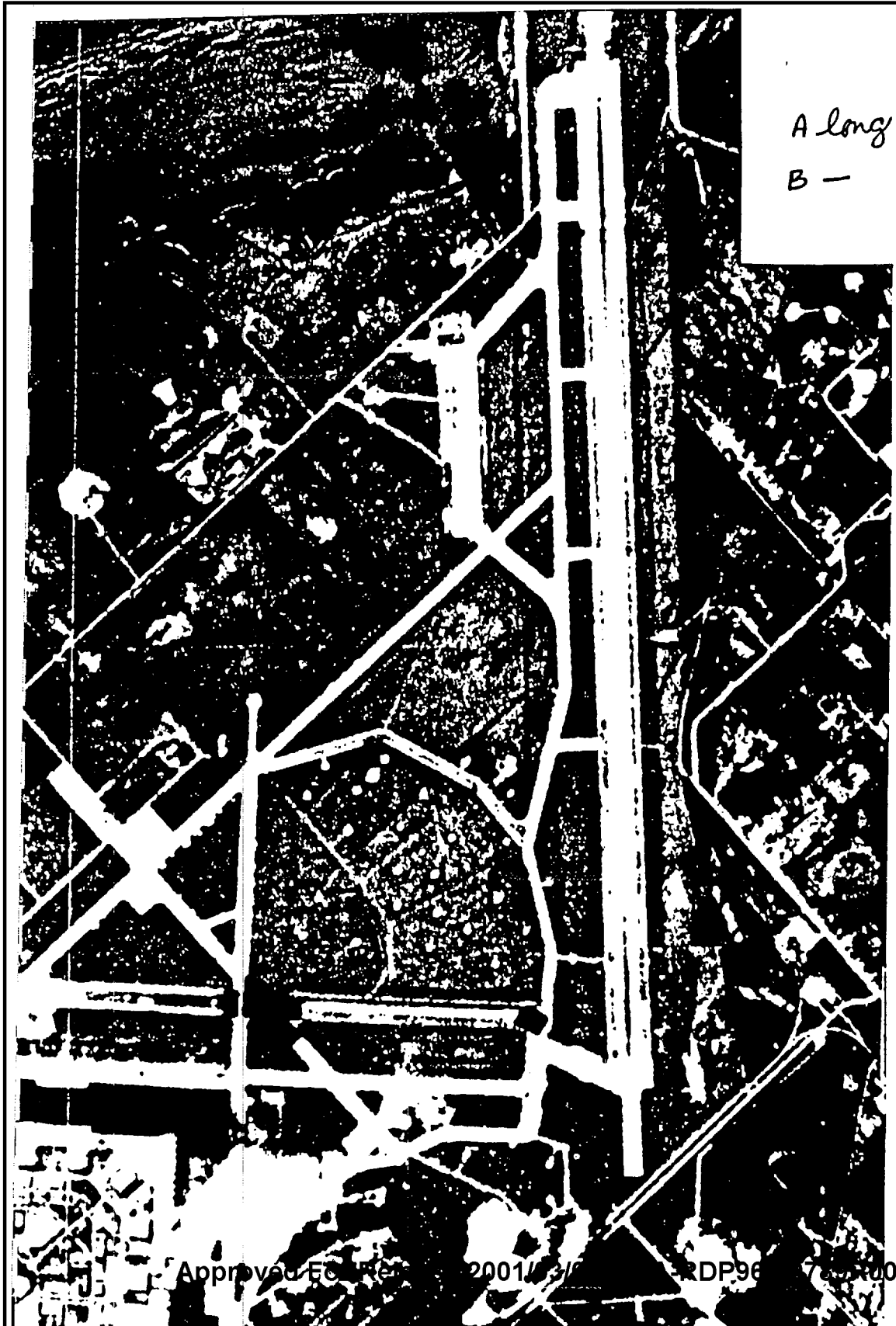
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S-2
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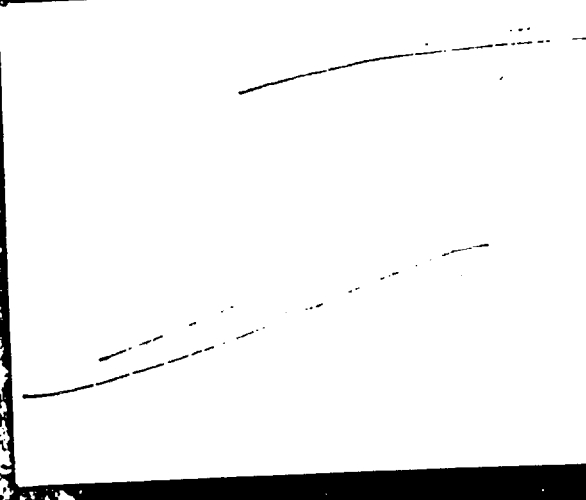
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B- large V

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grainy RFB
Green Pc
Cool Pc
Vast Pc

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Wet C
Patchy C
shiny CFB

Marshy area S

32° 38' 45" N
108° 21" 30° N

A droppind

A flat - dow - flat dow

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S-2 Brown
Crusty
bright
white
Green
← mine

Aol Breck

Mine in
Bisbee Az.

TRAINING PERFORMANCE
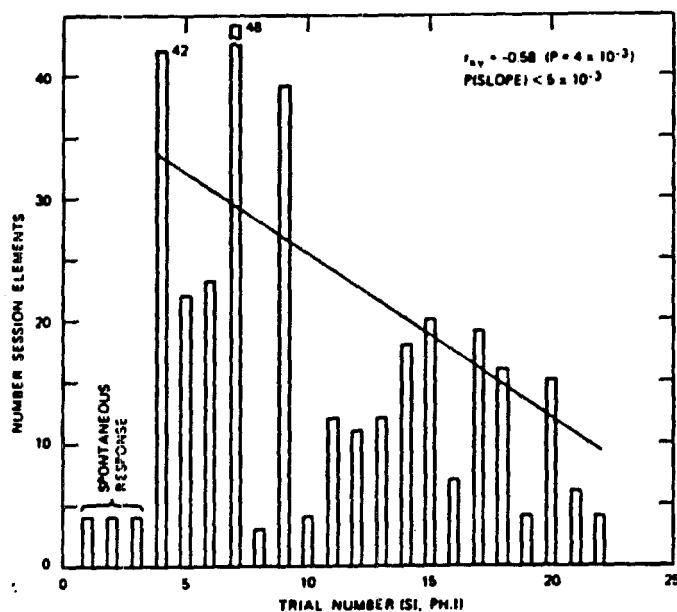
(VIEWER B)
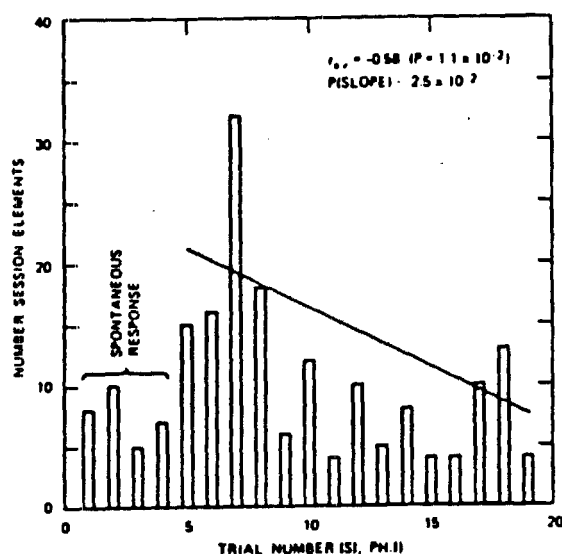
(VIEWER C)

FIGURE 12   TRAINEES B & C PROGRESS GRAPHS, STAGE 1,p1.

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TRAINING PERFORMANCE
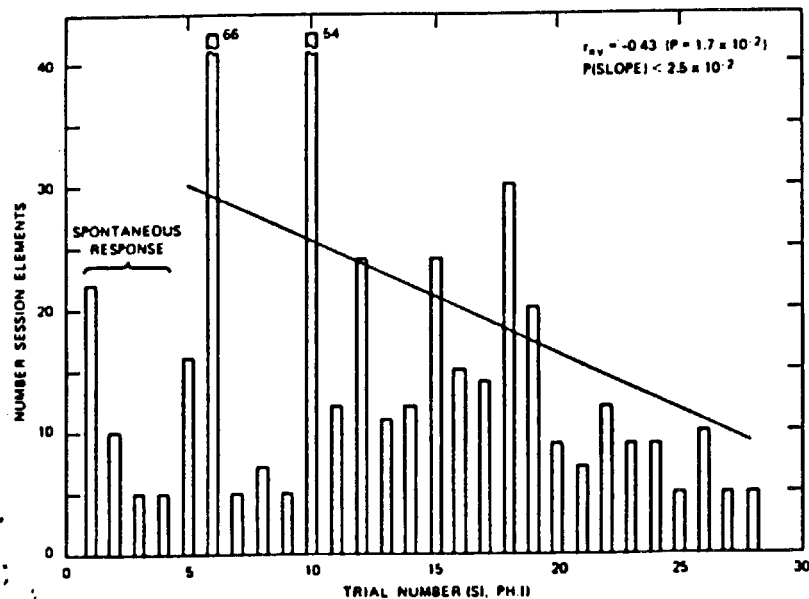
(VIEWER J)
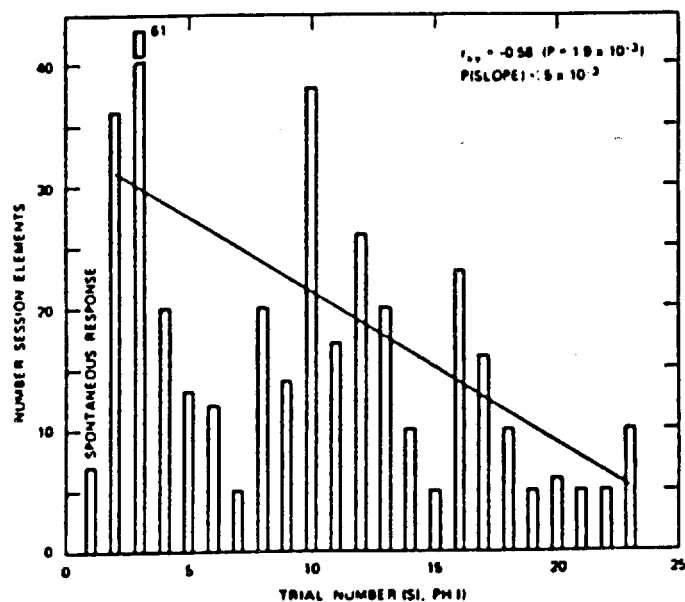
(VIEWER K)

FIGURE 11   TRAINEES J & K PROGRESS GRAPHS, STAGE 1,pl.

ANNEX

Examples of Stage 1 progress in graph form

    Witn reference to the consolidation/plateau pattern as shown
in figure 6, each trainee proceeds to learn through four recognizable
patterns of learning: spontaneous success, increase of noise as
separate elements are dealt with separately, consolidation of the
elements, and, finally, a new plateau of skill. In the following
figure 11 and 12, the elements of two selected trainees J & K
are shown, and these are compared with first group trainees B & C.

    It can be seen that the learning patterns are approximately
the same, the end product being conscious control of the signal and
a generating of an accurate and noiseles signal line.

    Following figure 12 are four consecutive examples of
selected trainee K at the culmination of the new plateau achieved
as a result of stage 2. Stage 2 involves signal-line perception
of delicate site features that must be handled and achieved in a
manner totally different from Stage 1 techniques. Stage 2 techniques,
however, often can generate a total site-comprehension, as the four
samples indicate.

    As of the writing of this report, two trainees (I & K) are
nearing completion of stage 3. An additional report will be tendered
concerning stage 3 upon their completion.

    Stage 4 has been confirmed, packaged, and is awaiting delivery
to training candidates who have successfully completed stage 3.

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H.   Summary of Increase in Yields

While there is, of course, yet a significant amount of work to be done, especially relative to training in the upper complex stages, the following generalized graph illustrates general increase of yields (1980-1983) in several categories of importance.   See figure 10 below.
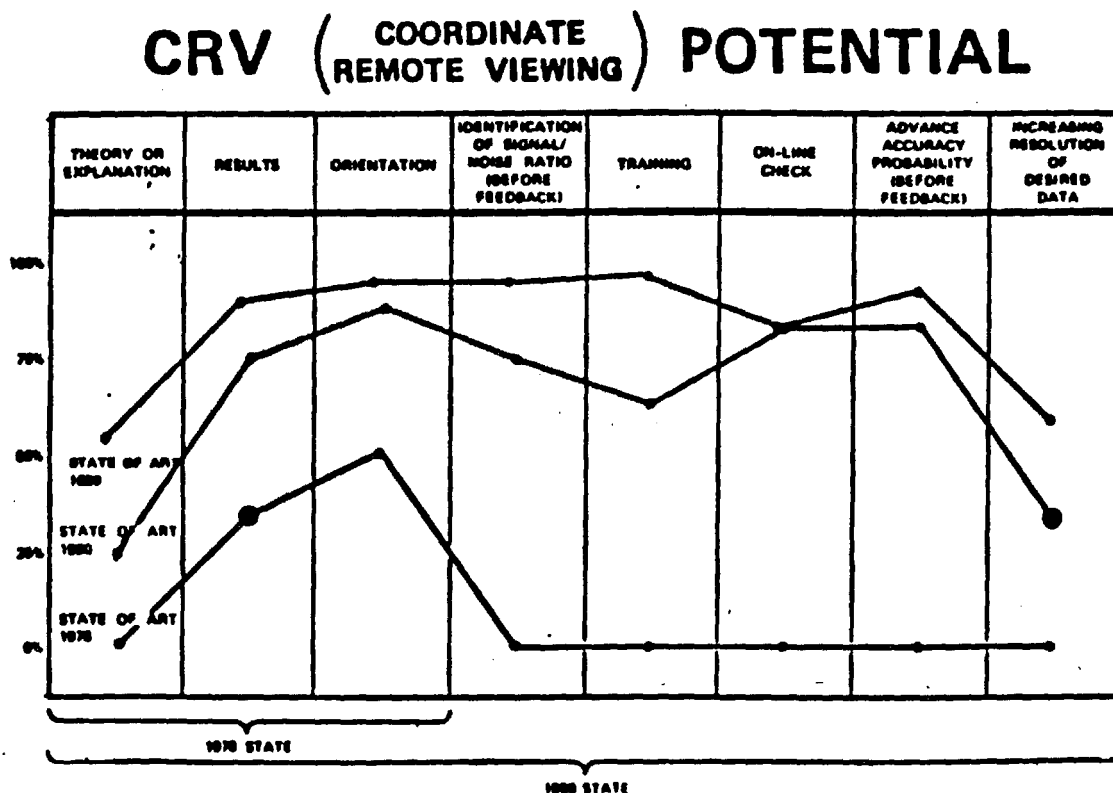

FIGURE 10   FIVE-YEAR INCREASE IN YIELDS   (1978-1983)

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- SPECIAL FEATURES

    - FEEDBACK PROTOCOL

        - SILENCE, IF SOME STATEMENT IS WRONG
        - PROBABLY CORRECT (PC)
        - NEAR (N)
        - CAN'T FEEDBACK (CFB)
        - CORRECT (C)
        - SITE (S)

    - USE OF ESSAYS

    - CONSTANT OBSERVATION OF TRAINEES' ATTITUDES

    - CONSTANT SUPERVISION FOR POSSIBLE MISCOMPREHENSIONS OR MISUNDERSTANDINGS

FIGURE 9   SPECIAL FEATURES

signal line but not to assist him with random cuing. The use of essays will exhibit the trainee's current understanding of each phenomena, and can be used to uncover areas of misunderstanding that the training monitor can not spot in advance. See Figure 9 below.
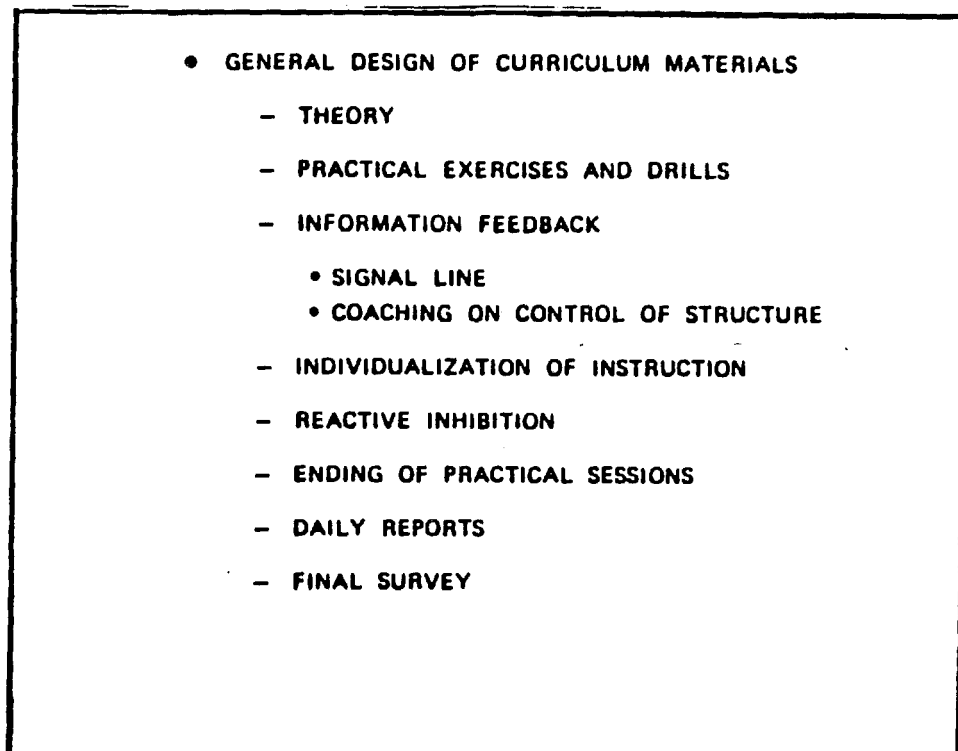
- **EFFECTIVE INSTRUCTIONAL PROCEDURES**

  - *ACTIVE PARTICIPATION:* THE LEARNER IS ACTIVELY INTERACTING WITH THE CURRICULUM MATERIALS BY RESPONDING, PRACTICING, AND TESTING EACH STEP OF THE MATERIAL TO BE MASTERED.

  - *INFORMATION FEEDBACK:* THE LEARNER FINDS OUT WITH MINIMAL DELAY WHETHER THE RESPONSE IS CORRECT. IMMEDIATE FEEDBACK HAS BEEN SHOWN TO BE IMPORTANT IN A RANGE OF TASKS.

  - *INDIVIDUALIZATION OF INSTRUCTION:* THE LEARNER MOVES AHEAD AT HIS OR HER OWN RATE.

FIGURE 7   INSTRUCTIONAL PROCEDURES

- **GENERAL DESIGN OF CURRICULUM MATERIALS**

  - THEORY

  - PRACTICAL EXERCISES AND DRILLS

  - INFORMATION FEEDBACK

    - SIGNAL LINE
    - COACHING ON CONTROL OF STRUCTURE

  - INDIVIDUALIZATION OF INSTRUCTION

  - REACTIVE INHIBITION

  - ENDING OF PRACTICAL SESSIONS

  - DAILY REPORTS

  - FINAL SURVEY

FIGURE 8   GENERAL DESIGN

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During the course of training on each element, within the "stages," the viewer-trainee will predictably progress through this progress pattern. Therefore, the results of each trainee both can be monitored while the training progresses, and his overall pattern of response can be displayed through the graph plan found in Figure 6 above.

Actual graphs of selected viewers will be found in Annex A. The selected graphs are few to achieve optimum understanding; it should be borne in mind that all the viewers trained have responded with near similarity to each other.

G.   CRV Training Course Methods and Protocols

The general elements of the CRV training course are presented below in Figures 7 through 9.

(a) .The design and establishment of the CRV training course necessitated a great deal of research into methodologies of other fields. The most effective instructional procedures ultimately utilized are found in Figure 8 below.

(b)   The CRV training course is comprised of a general design, whose elements are followed in each stage of the training. While each element is of importance in its place, the element pertaining to "reactive inhibition" achieves predominant placement. This has to do with understanding the phenomena associated with "overtraining" the result of which causes the trainee to exhibit negative effects of disinterest, etc., the ultimate result of which is a type of inhibition in producing the desired elements of the training. In other psi research experiments, this inhibition achieved notoriety under the terminology of "psi-missing." It is a simple psychological effect that can be guarded against. See Figure 9 below.

(c)   The training course also includes several special features which are applicable to the psi task at hand in each stage. The feedback protocol was designed to reinforce the trainee's contact with the

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F. How is Progress Judged?

It has transpired that the learning patterns of the CRV training do exhibit great similarities to other learning-patterned tasks in which a new skill involving consciousness interpretation vis a vis neuro-motor functioning is gained: (i.e., sports, musical performance, machinery driving, flying, navagating, etc.).

We therefore interpret that the psychical component of CRV is not solely one of intellectual mentation, but one in which mental-physical performance is achieved.

As with a number of fields, the elements of the performance of which respond to careful tutoring, we find, during the course of CRV training first a "spontaneous" performance closely related to the "first time" phenomenology. After that, as the trainee attempts to take over both on a cognitive level and on an unconscious habit-forming control of both physical and mental responses, we see a high elevation of "noise." Shortly thereafter, as the varied elements of the tasks become organized within the intellectual-mental attributes of the trainee, we see a quick "con-solidation" of the task aptitudes involved. At the end of this consoli-dating experience, the new skill or "plateau" emerges. See fig. 6 below.
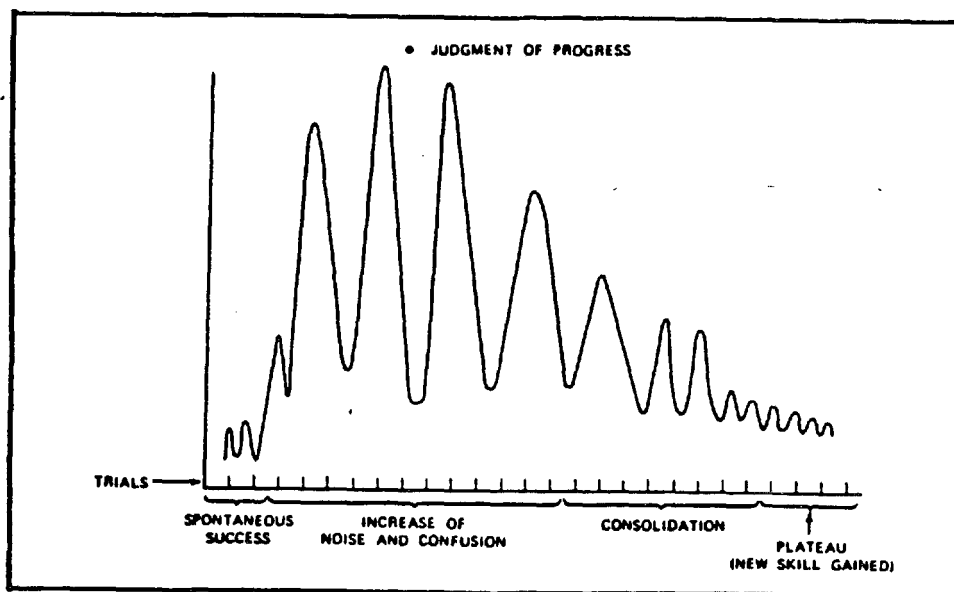
FIGURE 6   CONSOLIDATION/PLATEAU PATTERN

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It is important to establish, in the context of this first overall report on CRV training, that these tasks are of extraordinary delicacy and require precision control, as will be exhibited by the trainees upon completion of each stage of training. The psychological perspective that necessarily is required to surround this operation, should be seen as a new contribution to overall perceptual psi requirements. This psychological perspective should not be assumed to resemble any other forgoing idea of requirements in the area of general spontaneous psi displays.

E.   The CRV Training Course is Carefully Designed

The most important task in creating the CRV training course was to come to grips with the subtle factors involved in accepting the fact that the self-generating creative faculties of the trainee would achieve prime importance.

The second task was to design an approach that might incorporate psychic functions on a strict and repetitive basis, and yet not drive these emerging functions into extinction.

The result has been the devising of a course of training that has produced satisfactory results in these very important areas. Analysis of learning patterns, display patterns that are recognizable in other disciplines of training in which a new performance-skill is gained through precision tutoring or coaching. See Figure 5 below.
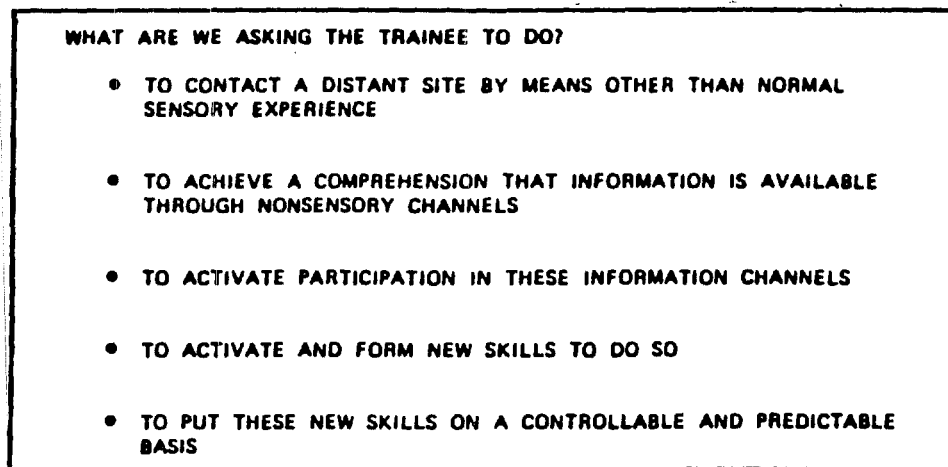

WHAT ARE WE ASKING THE TRAINEE TO DO?

- TO CONTACT A DISTANT SITE BY MEANS OTHER THAN NORMAL SENSORY EXPERIENCE

- TO ACHIEVE A COMPREHENSION THAT INFORMATION IS AVAILABLE THROUGH NONSENSORY CHANNELS

- TO ACTIVATE PARTICIPATION IN THESE INFORMATION CHANNELS

- TO ACTIVATE AND FORM NEW SKILLS TO DO SO

- TO PUT THESE NEW SKILLS ON A CONTROLLABLE AND PREDICTABLE BASIS

FIGURE 5   THE CRV TRAINING TASK

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1.	EXPLORATORY	1972 TO 1975
2.	INTERVENING AREA	1974 TO 1976
3.	PROBLEM OF SIGNAL vs NOISE	1976 TO 1978
4.	FUNDAMENTAL PERCEPTUAL STUDIES	1977 TO 1979 AND CONTINUING
5.	ISOLATION OF THE IDEOGRAM	1979
6.	TRAINING/LEARNING	1980 — PRESENT AND CONTINUING
7.	INTENSIVE ENHANCEMENT	1982 AND CONTINUING
8.	PROJECTION OF READINESS	1983 AND CONTINUING

FIGURE 4   EPOCHS OF COORDINATE REMOTE VIEWING (CRF), R&D

D.   The Precision of CRV

R&D, aligned with training, have shown that "psychic" signals offer
themselves up to interpretative consciousness through a predictable
series of "signal impulses." This series starts with "greatest" meaning,
and evolves into "specific" components.

This predictable process has easily yielding "stages" each of which,
in training, can be specifically tutored.

abilities, and thereafter leave it to themselves to attempt to evoke spontaneous psychical displays.

It is the definition of "training" that gives the CRV project a considerable difference from orientation and spontaneous displays of psychical aptitudes. "Training" implies a prefigured regime that will, if correctly applied, lead to predictable performance which, in turn, will yield superior results. Such a training program should be considered viable if, together with increasing discoveries, it continues to develop along lines of increasingly refined results and precision.

The R&D training project has well established that predictable performance can be trained; and its results correctly extrapolated into use-oriented functions. Furthermore, the overall approach utilized in R&D continues to reveal increasingly refined capabilities which in turn, as of the close of the three-year project, imply pending entrance into some truly interesting areas of tactical concern.

C.   Epochs of CRV R&D and Training

Exploration and development of Coordinate Remote Viewing (CRV) has gone through many phases: from random experimenting in 1974, ultimately to its substantive contents now isolated into a primary, but standardized, training course.

Based strictly upon the increasing success of trainees, it is anticipated that the CRV procedures will continue to increase in value as a practical applications tool. See Figure 4 below.

It is nearly impossible to talk in detail of the complexity of the tasks of precision and perceptual-control which which the viewer-trainee is faced as he or she begins to try to achieve command over the signal line. The reality of the multiple tasks involved only become apparent to the trainees during the course of their training through each subsequent stage.

less with actual psychical aptitudes. Throughout this history, the actual problem of psychical manifestations has been addressed only tangentally, if at all, prior to the present CRV work.

This problem consists of two equally important factors:

(1) What makes superior data, when it emerges, superior?

(2) What makes inferior data, when it emerges, inferior?

This dual problem is a problem for research (rather than random experimentation) into the different factors that govern the perceptual modes that underlay this extraordinary duality. In approaching this duality, the statistical averaging or evaluation of experiments of the superior into the inferior data is and has been of little avail in that it does not lead into intimate contact with the perceptual attributes involved.

The hallmark of the CRV R&D work--leading to training capabilities--has been to concentrate upon the exact nature of both superior and inferior arrays of data and to plumb into the exact nature of the perceptual attributes involved in each of them. It was assumed, at the outset, and correctly so, that superior data contained less or least false data among its overall contents, and that inferior data were data sets in which most of the content was false. Superior data, therefore, were data relatively free of false data, and it became easy to think of the overall problem as one of signal versus noise. The characteristics both of signal and noise had to be discovered and isolated, and it is the cumulative breakthroughs in this history that have led to constant progress in CRV R&D and, ultimately, to a training program based upon those breakthroughs so far discovered.

B. The Definition of Training

Prior to a training program being established, no specific set of methods or practices had been brought into existence that elevated psychical aptitudes or attributes above just merely attempting to encourage the emergence of spontaneous displays. It had been in the recent past, possible to give general orientation to individuals about the nature of psychical

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VII   DISCUSSION

A.   Background

In considering this report on Coordinate Remote Viewing (CRV) work,
several important distinguishing features may be borne in mind.

An in-depth review of the history of formal psychical or paranormal
research--covering some 100 years--clearly reveals that no successful
training methodologies have been located or evolved prior to the work
undertaken at SRI, specifically in CRV. While certain epochs of psychical
work in the ·past have extraordinary merit, these for the most part have
had as their goal the establishing of credibility that the several
psychical manifestations do exist.

These manifestations have been contacted in a spontaneous form, and
displays of their arrays always have been dependent upon the innate
"giftedness" of subjects if they emerged or could be located. The spon-
taneous forms have not in a continuing form lent themselves very well to
the scientific parameters designed to "capture" them. Because of this,
the "field" or "state-of-the-art," as a whole, was forced to view the
spontaneous arrays through, usually, statistical methods of evaluation
and averaging.

· The statistical approaches have sufficed to establish credibility
for the existence of spontaneous paranormal aptitudes in given individuals
or groups; by itself, however, it has not been sufficient or capable of
extrapolating on the exact nature of aptitude-characteristics in any given
and continuable psychical manifestation.

Furthermore, seeking to utilize statistical approaches to the problems
before them, psychical researchers ultimately came to seek experiments
that might better increase the statistical averages they sought. This
overall approach led to a drastic proliferation of random experimentations
that had as their goals more experimental design but often affiliated them

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In the estimation of this consultant, bearing in mind the significances of the several steps forward that have come into view during the last work epoch, the biomagnetic/psi perceptual problem should probably be given highest and first priority. The fact that earth's geomagnetic field and human physiology and psychology are both influenced by and interact with EMF has been established quite some time ago (See Presman, A.S., Electromagnetic Fields and Life, Plenum Press, New York (Prof. Pressman, Department of Biophysics, Moscow University, Moscow).) Based upon experience, if the work should proceed under the "spontaneous result" philosophy or attitude, there will be a tendency to replicate more familiar approaches.

The EMF/consciousness/psi area is unfamiliar to most of us; yet, based upon our observations, there is an astonishing degree of correlation. It is strongly recommended that an organized interest in this special phenomena be given priority.

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C. An R&D Potential for "SEARCH" Has Come Into View

In terms of future work, the problem of "SEARCH" should achieve a platform of understanding that has not hitherto been available under standard parapsychological approaches. These breakthroughs are expected to arrive through the context of Stage 5 (interrogation of the signal line). Although Stage 5 is still in R&D as concerns the packaging and delivery of it, there are sufficient indicators already present to indicate that the problem of search will be addressed, at least in some important understandings, through continued mapping of it.

It must be noted carefully, and based upon our ten year's of experience now, that any resolution to the "SEARCH" problem probably will only be achieved if we arrive at some understanding of how it is that the signal line might be profitably interrogated. The danger will be to proceed with ad hoc experiments which, even if marginally successful, might not yield any basic understandings leading ultimately to controlled interrogation procedures.

The achievement of finding a significant apperture through which the signal line can be interrogated without also arousing volumes of "noise" is therefore an important prerequisite for the "SEARCH" problem.

D. The Electromagnetic Connection

During the overall course of the R&D and training, sufficient phenomena have surfaced that indicate a direct connection of viewer performance with certain geomagnetic conditions. The daily parameters of basic earth electromagnetic conditions therefore achieved some interest on our part. An "eye-ball" scan of these interrelationships clearly indicates an important, but hitherto unsuspected, interaction between viewing and success in correctly interpreting the signal line and electromagnetic conditions. We expect that this unsuspected relationship will bear itself out, and if so, establish in some form the first verifiable psi-electromagnetic relationships.

PRE-STAGE 4				STAGE 4		
Eval	Site #	Date		Eval	Site #	Date
1	J.S. #1	12 Feb 80		2+	J.S. #39	8 Feb 83
1	J.S. #3	13 Feb 80		3	J.S. #40	10 Feb 83
1+	J.S. #5	3 Mar 80		3	J.S. #41	11 Feb 83
2	J.S. #8	1 Jul 80		2+	J.S. #42	11 Feb 83
2	J.S. #12	2 Apr 81		2.75 Average		
Abort	J.S. #13	3 Apr 81				
2	J.S. #14	7 Apr 81				
0	J.S. #15	8 Apr 81				
0	J.S. #16	8 Apr 81				
3	J.S. #17	9 Apr 81				
2+	J.S. #20	8 Jun 81				
1	J.S. #21	6 Aug 81				
1	J.S. #29	14 Dec 81				
0+	J.S. #30	14 Dec 81				
2-	J.S. #31	14 Dec 81				
No eval	J.S. #33	7 Jan 82				
1	J.S. #34	1 Mar 82				
0+	J.S. #35	4 Nov 82				
1	J.S. #36	5 Nov 82				
1+	J.S. #37	15 Nov 82				
0	J.S. #38	21 Jan 83				
1.21 Average						

JS files show 009 did JS #38 with no feedback found (?)

FIGURE 3   PRE- AND POST-STAGE 4 ACHIEVEMENTS AVERAGED

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VI WHERE ARE WE GOING

A. Enlargement of the Training Pool

In terms of future work, it is feasible and desirable to further enlarge the training pool.

B. Delivery of Stage 4

It is important that Stage 4, confirmed, packaged and ready to be delivered, be tutored to those who have completed Stage 3. Locating and stabilizing the elements of Stage 4 was quite difficult and it was in R&D for nearly two years. It involves a significant "jump" from configurational data decoded out of Stages 1 through 3, into subtle data that bear sig- nificance.   Once Stage 4 was stabilized and self- trained by Viewer A, a significant incremental difference immediately manifested in   site viewings as is shown in Figure 2 below. Stage 4 was applied by Viewer A to certain sites after Stage 4 had been isolated and confirmed. On a rating of   value of 0 to 3, the pre-Stage 4 sites averaged 1.21 while those that incorporated Stage 4 techniques averaged 2.75. See figure 3 below.

B. The Phenomena Trained are not Unique to "Gifted" Psychics

The overall context of the training course and the success of the given trainees has established that the basic psi-perceptual phenomena are not unique to "gifted" psychics and that given adequate understanding of them and carefully constructed training and practical exercises, selected candidates can take command of the phenomena encountered.

C. A New Understanding Has Been Achieved

With the comprehensions we now have in hand, it is clear that the psychical perceptual task is of a delicacy and complexity that goes far beyond any given understanding of it entertained in parapsychology in general. This places us in a status that obliges us to bear two things constantly in mind:

(1) So-called standard approaches normally utilized in parapsychology are predictably limited.

(2) The most fruitful future work probably will be built upon the knowledge and understanding of the phenomena taken control of during the three-year project.

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V   WHAT HAS BEEN ACHIEVED

A.   Training Has Been Achieved

Relevant to Stages 1 through 3, all trainees who embarked on the training course responded exceedingly well to the training procedures. The second group worked quite slowly due to other personal committments and scheduling.

Among the first ⟩ ‾   ‾‾‾‾‾ ʼ, trainees, Trainee K is nearing completion of Stage 3; Trainee J has temporarily left the course due to serious health problems. The second ⠂ ‾   _ _ ‾ ·candidate only entered the program in 1983, but is progressing satisfactorily.

DATES	TRAINEES		STAGES						
			1	2	3	4	5	6	7
1978	TRAINING MONITOR	A							
1980 TO 1982	FIRST GROUP	B							
		C							
		D							
1981 TO 1983	SECOND GROUP	E							
		F							
		G							
		H							
		I							
1982 TO 1983	CANDIDATES	J							
		K							
1983	CANDIDATE	L							

DELIVERED   CONFIRMED   IN R&D   CONFIRMED   IN R&D
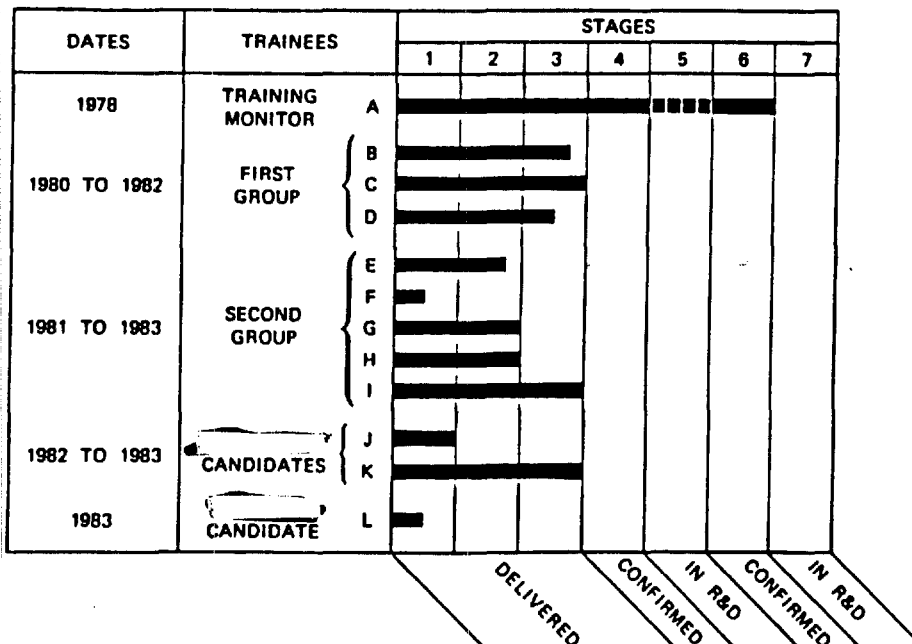
FIGURE 2   THREE-YEAR PROGRAM CRV TRAINEES/ACCOMPLISHMENTS

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THE STAGES

	SKILL GAINED	SIGNAL BROUGHT UNDER CONTROL
STAGE 1.	IDEOGRAMS AND IDEOGRAM PRODUCTION	SIGNALS THAT INDUCE/PRODUCE IDEOGRAMIC RESPONSES (GESTALTS)
STAGE 2.	SENSATIONS EXPERIENCED FROM DISTANT SITE	SIGNALS PRODUCING TACTILE, SENSORY, DIMENSIONAL ESTIMATES, DIRECTIONAL FEELINGS, AND SO FORTH
STAGE 3.	MOTION AND MOBILITY (LIMITED) AT DISTANT SITE RESULTING IN PRIMARY ARTISTIC RENDERINGS	SIGNALS PRODUCING AESTHETIC RESPONSES IN VIEWER, SIMPLE SKETCHES AND "TRACKERS"
STAGE 4.	QUANTITATIVE AND QUALITATIVE ASSESSMENTS OF VARIOUS DISTANT SITE CHARACTERISTICS	SIGNALS (MANIFOLD) THAT INDUCE ANALYTICAL COMPREHENSIONS
STAGE 5.	METHODS OF INTERROGATING THE SIGNAL LINE	(STILL IN R&D)
STAGE 6.	CREATING 3-DIMENSIONAL MODELS	SIGNALS (CONSOLIDATED) THAT YIELD SIMPLE REPLICAS OF DISTANT SITE FEATURES
STAGE 7.	SONICS (STILL IN R&D)	SIGNALS THAT INDUCE VERBAL CONTENT
STAGE 8.	HUMAN TO HUMAN INTER-FACES (R&D, 1984/1985)	SIGNALS THAT IMPLY HUMAN PSYCHIC EMPATHY AND INDUCE/PRODUCE IDEOGRAMIC RESPONSES (GESTALTS)

FIGURE 1   THE STAGES

IV STAGES OF TRAINING

The training procedures have been broken down into several stages representing various elements of CRV phenomena. These stages both facilitate training, and actually follow the predictable course of increasing perception which builds itself by specific increments and importances. Stages 1 through 3 have been confirmed and delivered to trainees. Stage 4 and Stage 6 have been confirmed and are ready to be delivered to trainees upon their completion of Stage 3. Stage 5 is understood, but has not yet been solidified into a training package.

Stages 1 through 3 appertain to large site features, which become increasingly refined as a result of command over the Stage 3 techniques.

Stage 4 involves perception of specific and often invisible site elements, a good portion of which may not be available to any other technique,

Stage 5 will allow the viewer to "turn around" and begin to interrogate the signal line for specific subtle features of several kinds. See Figure 1 below.

Stage 6 allows for the construction of 3-dimensional models of the major site characteristics with increasing refinements in particulars.

III TYPES OF TRAINEES ENGAGED

During the three-year program, Viewer A acted as the general R&D source person, applied to himself as a test what was discovered, and what was organized as a nucleus training course.

Subsequent to this, the first group of viewer trainees (Viewers B, C, and D) embarked on training. This first group had the distinction of being, prior to entering upon the training course, composed of persons who had had psi experience and had acted as experimental subjects in several other kinds of parapsychological experiments.

Subsequent to the first group, a second group (Viewers E, F, G, H, I) was enrolled as a further test of the methodologies evolved by Viewer A. This second group was composed of professional people, each of whom had achieved success in their various fields of interest, but none of which had acted before as an overt psychic-type of person in parapsychological experiments.

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II WHAT WAS THE GOAL?

The overall goal of the CRV training program was to create, out of the features of CRV previously discovered, a training program through which the elements of successful coordinate remote viewing would be transferred to client preselected trainees. Any success in achieving this, implied answers to two items which were of paramount interest at the beginning of the three-year program:

(1) That the specific elements of the CRV methodology were not unique to their inventor.

(2) That these elements, given instructional body, could be transferred

I GENERAL DESCRIPTION

In 1981, a three-year training program concerning potentials in CRV was established. I was mandated, through consulting contracts, to organize the work and tutor the selected personnel and technical elements of this program. The specific sponsors and work designs for this program may be found in other documents.

The three-year program is now at an end. What follows constitutes a summary report of the work undertaken, the results obtained, and certain projections for future work if a renewed effort is mandated.

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LIST OF ILLUSTRATIONS

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TABLE OF CONTENTS

CO-ORDINATE REMOTE VIEWING (CRV) TECHNOLOGY

1981-1983

THREE-YEAR PROJECT

DRAFT REPORT

30 August 1983

SRI/GF-0253

This document contains
31 pages.

Copy No. 3

31. *Possible Photon Production During a Remote Viewing Task: A Replication Experiment*, Final Report, December 1987—Final technical report on a putative correlation between RV and the output from a photon detector (UNCLASSIFIED).

32. *Precognition and Feedback Dependent Remote Viewing Experiments*, Final Report, December 1987—Details of an experiment to investigate subliminal feedback during an RV experiment

33. *Computer-Assisted Search*, Final Report, December 1987—Final results of a computer dowsing experiment

34. *A Remote Action Experiment with a Piezoelectric Transducer*, Final Report, December 1987—Final report of a subcontractor's RA experiment with an exceptionally shielded transducer (UNCLASSIFIED).

35. *A Quantum Measurement Experiment with a Single Photon Interferometer*, Final Report, December 1987—Final test of a quantum measurement problem—namely, to what degree does consciousness participate in determining reality? (UNCLASSIFIED).

-16-

17. *An RNG Experiment To Test The Effects of Source and Distance*, Final Report, December 1986--Subcontractor's report on a long-distance random number generator, RA experiment (UNCLASSIFIED).

18. *An Experiment To Test Apparent Remote Action (RA) Effects on Electrodermal Activity*, Final Report, December 1986--Subcontractor's report on an RA experiment in which human skin properties were the RA target (UNCLASSIFIED).

19. *An Experiment To Examine the Possible Existence of Remote Action Effects in Piezoelectric Strain Gauges*, Final Report, December 1986--Construction details and description of a pilot experiment to verify the RA claims of a subcontractor (UNCLASSIFIED).

20. *Measuring Remote Action Influence on The Vertical Component of DUNALIELLA Velocity*, Interim Report, December 1986--Construction details and description of a proposed experiment to verify the RA claims of a subcontractor.

21. *Remote Action Hardware Construction: A Quantum Mechanical Photon Experiment*, Final Report, December 1986--Proposal to conduct a test of a quantum measurement problem--namely, to what degree does consciousness participate in determining reality (UNCLASSIFIED).

22. *Enhanced Human Performance Investigation*, Mid-Year Technical Report, May 1987--Technical summary of the first half of FY 1987's work

23. *Enhanced Human Performance Investigation*, Mid-Year Administration Report, May 1987--Brief administrative summary of project for first half of FY 1987

24. *Enhanced Human Performance Investigation*, Final Technical Report, December 1987--Summary of FY 1987 results including comments by the SOC

25. *Intuitive Data Sorting*, Final Report, December 1987--Description of computerized tests of the IDS model (UNCLASSIFIED).

26. *Review of the Personality Assessment System*, Final Report, December 1987--A definitive description of the PAS psychological mode (UNCLASSIFIED).

27. *Experimental Protocol for Hemolysis: Confirmation Experiment*, Final Report, December 1987--Report on subcontractor's remote action experiment on human blood (UNCLASSIFIED).

28. *The SRI International Cognitive Science Conference at Princeton University*, Final Report, December 1987--Proceedings of a conference to discuss what constitutes evidence for parapsychological phenomena (UNCLASSIFIED).

29. *Fuzzy Set Applications in Remote Viewing Analysis*, Final Report, December 1987--Application of fuzzy set technology and cluster analysis to the analysis of remote viewing (UNCLASSIFIED).

30. *A Remote Action Investigation with Marine Animals*, Final Report, December 1987--Final report from a subcontractor on a remote action experiment on marine animals (UNCLASSIFIED).

1. *Enhanced Human Performance Investigation,* Quarterly Report 1, April 1986—Technical summary of the first quarter's work

2. *Phase I Protocols and Research Design Guidelines,* Interim Report—Protocols of experiments for the Scientific Oversight Committee

3. *Enhanced Human Performance Investigation,* Quarterly Report 2, May 1986—Technical summary of the second quarter's work

4. *Enhanced Human Performance Investigation,* Mid-Year Administration Report, May 1986—Brief administrative summary of project for first half of FY 1986

5. *Enhanced Human Performance Investigation,* Quarterly Report 3, August 1986—Technical summary of the third quarter's work

6. *Enhanced Human Performance Investigation,* Final Technical Report, December 1986—Summary of FY 1986 results including comments by the SOC

7. *Enhanced Human Performance Investigation,* Final Administration Report, December 1986—Brief administrative summary of project for FY 1986

8. *Screening and Selection of Personnel: The Personality Assessment System (PAS),* Final Report, December 1986—Description of psychological correlates to RV performance

9. *Location of Target Material in Space And Time,* Interim Report, December 1986—Description of a computerized "dowsing" experiment

10. *An Experiment To Explore Possible Anomalistic Behavior of a Photon Detection System During a Remote Viewing Test,* Interim Report, December 1986—A replication of earlier SRI work to investigate a claim made by researchers in the People's Republic of China

11. *A Suggested Remote Viewing Training Procedure,* Final Report, December 1986—Suggestions for RV training by one of SRI's remote viewers (UNCLASSIFIED).

12. *Remote Viewing Evaluation Techniques,* Final Report, December 1986—Description of fuzzy set approach to RV analysis

13. *Parapsychology Sources of Information Center,* Interim Report, April 1986—Report on a subcontractor's task of computerizing a large parapsychology data base (UNCLASSIFIED).

14. *Neuropsychological Assessment of Participants in Psychoenergetic Tasks,* Final Report, December 1986—Description of neuropsychological correlates to RV performance

15. *A Remote Viewing Feedback Dependency Experiment,* Interim Report, December 1986—Construction details of a subliminal feedback RV experiment (UNCLASSIFIED).

16. *Intuitive Data Sorting: An Informational Model of Psychoenergetic Functioning,* Final Report, December 1986—Definition of a decision model to organize a large class of psychoenergetic data (UNCLASSIFIED).

million per year. More funding would be required required if specific subcontractors are needed for the research effort.

It is understood by all parties that these demonstrations are being conducted and that, if the demonstrations are successful as defined by the protocol, sufficient funding over the next 4 to 5 years will continue and expand the existing efforts.

2. (U) Measures of a Successful Demonstration

(U) The output from each experiment will be the sum of ranks assigned by the analysts. They will be combined to form a sum, M. Then the probability of observing a sum of ranks less than or equal to M is given by:

$$P = \frac{1}{R^n} \sum_{j=n}^{M} \sum_{k=0}^{\frac{j-n}{R}} (-1)^k \binom{n}{k} \binom{j-kR-1}{n-1} \quad ,$$

where R is the number of possible ranks (R = 5), n is the total number of trials (n = 40), and M is the sum of ranks combined for the two experiments.[*]

(U) The demonstration will be declared a success if P meets (or exceeds) the accepted level for 1–tailed significance ($P \leq 0.05$).

3. (U) Time and Cost

(U) It is anticipated that a total of 2 weeks will be needed to complete the demonstration. Including travel time for viewer 372 and SRI staff time, the estimated charge for this demonstration is approximately $30,000.

E. (U) Requirements for Further Research

(U) To allow for proper planning for an extended research effort, we estimate that $250,000 will be needed for FY 1989. These funds cover both experiments and planning for an expanded effort for FY 1990 and beyond.

The current level of funding for the CSP at SRI International is approximately $1.5 million. Except for some physiological and medical investigations, the bulk of the effort is for applications-oriented research

Conducting a program having a mix of basic R&D that explores the fundamental nature of the phenomena and continues the work in applications would require an additional $1.5 million to $2.0

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[*] (U) J. V. Uspensky, Introduction to Mathematical Probability, New York, McGraw Hill, 1937, p. 24. (UNCLASSIFIED)

An SRI analyst and   representative (D2) will be sequestered in the project library, Room 206, Building G, SRI International. At T_0+5 minutes, the SRI monitor will signal room 316 by the one-ring technique. D1 will generate random numbers to select a videotape packet and to select a target on the tape. D1 will place the appropriate sealed envelope containing the geographical coordinates on the table. One minute after receiving the phone ring, D1 and the assistant will signal the monitor and viewer to begin the session.

(U) When the session is completed, the monitor will copy the response, and takes the original to Room 316 and gives it to D1. D1 returns with the monitor with the video tape of target and provides feedback to viewer 372. Viewer 372 is then excused.

(U) D1 leaves the target tape number and the copied response on the table in Room 316, lock the target tape cabinet, signal D2 and the SRI analyst by the one-ring method, and exit with the assistant. D2 and the analyst will enter Room 316 (bringing the analysis pool with them), and D2 will observe the analyst rank-order the targets against the response. D2 will record the trial data and analysis results in the experiment log book.

(U) Number of Trials--Viewer 372 will participate in 20 trials during a 2-week period at a rate of 2 trials per day.

(U) Experiment Statistic--The output from each trial will be the rank number the analyst assigned for the correct target. The experiment statistic will computed from the sum of such ranks.

b.   (U) Experiment II—Natural Scenes in the Free World

    •Viewer—The viewer will be Viewer 372, who has been with the program since 1979 and has participated in many⸱ _____⸱ tasks and laboratory experiments.

    (U) Targets—The targets will be at least 25 outdoor locations in the free world. Before the start of the experiment, SRI personnel will record on videotape approximately 2-minute highlights of each site. At least five tapes, consisting of 5 target sites each, will be prepared. Within a tape, the sites will be selected on the basis of dissimilarity (i.e., to be as different from one another as possible). A target site can appear in one and only one tape. In addition, each location will be assigned its geographical coordinates (UTM) to the nearest 10 meters. Finally, packets will be prepared that contain a videotape of five sites and file cards with the geographic coordinates and name of the site that have been sealed in numbered envelopes. These packets will constitute the session pool. The analysis pool will contain duplicate videotapes only.

    (U) Target Selection—Using a pseudorandom algorithm seeded by a computer system clock, a videotape will be randomly selected from the session pool. By the same technique, a target will be selected within the designated tape. As in Experiment I, targets will be chosen with replacement, so that the same target could be selected more than once.

    ⸱ _____⸱ Targeting Technique—A sealed envelope technique will be used. At the beginning of each session, the viewer will be asked to describe the site designated by the UTM coordinates in a sealed envelope.

    (U) Analysis Technique—An analysis will be conducted at the end of each session. The appropriate videotape from the analysis pool will be used for the ranking. The analyst must rank-order the targets (on the tape designated by D1) in order of decreasing match to the response (i.e., a rank of 1 means that target best matches the response, and a rank of 5 means a worst match).

    ⸱ _____⸱ Procedure for a Trial—At T_0, Viewer 372 and an SRI monitor will be sequestered in a locked laboratory—Room 304, Building G, SRI International. A _____ representative (D1), an SRI assistant, and the session target pool will be sequestered ⸱ _____ —Room 316, Building G, SRI International. (Room 316 meets the sound transmission class requirements of 45-dB attenuation over the speech frequency range.)

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(U)

rank–order the targets in order of decreasing match to the response (i.e., a rank of 1 means that target best matches the response, and a rank of 5 means a worst match).

▌ Procedure for a Trial--At T_0, Viewer 009 and an SRI monitor will be sequestered in a locked laboratory--Room 304, Building G, SRI International. A ﹑representative﹅ (D1) , an SRI assistant, and the session target pool will be sequestered▌ ▐--Room 316, Building G, SRI International. (Room 316 meets the sound transmission class requirements of 45-dB attenuation over the speech frequency range.) An SRI analyst and﹒ ﹉▲representative (D2) will be sequestered in the project library, Room 206, Building G, SRI International. At T_0+5 minutes, the SRI RV monitor will signal room 316 by phone--letting it ring only once. Neither D1 nor the assistant will answer the phone. Rather, D1 will generate random numbers to select a target packet and to select a target within the﹒packet. That target will be opened and placed on a table between D1 and the assistant. One minute after sending the phone signal, the viewer and monitor will conduct one RV session.

(U) When the session is completed, the monitor will copy the response and take the original to Room 316 and give it to D1. D1 will return with the monitor and the target and provide feedback to Viewer 009. Viewer 009 will then be excused.

(U) D1 will replace the target in the pack and lock the session pool in a cabinet. D1 will leave the target pack number and the copied response on the table. D1 will signal D2 and the SRI analyst by the one–ring method and exit Room 316 with the assistant. D2 and the analyst will enter Room 316 (bringing the analysis pool with them), and D2 will observe the analyst rank–order the targets (drawn from the appropriate pack) against the response. D2 will record the trial data and analysis results in an experiment log book.

(U) Number of Trials--Viewer 009 will participate in 20 trials during a 2– week period at a rate of 2 trials per day.

(U) Experiment Statistic--The output from each trial will be the rank number the analyst assigned to the correct target. The experiment statistic will be computed from the sum of such ranks.

1. **(U) Demonstration Experiments**

(U) SRI proposes to conduct two RV experiments as a demonstration. These experiments are conceptually identical, but they differ in the target material and the targeting technique.

(U) The protocols are designed to eliminate all sources of known potential artifacts. Furthermore, they are designed to demonstrate only the processes SRI has achieved in past experiments, not to explore new ones. All details, including a definition for success, are specified.

a. **(U) Experiment I--National Geographic Targets**

Viewer--SRI will use Viewer 009, who has been with the program since 1974 and has participated in many ⌐ ⌐asks and laboratory experiments.

(U) Targets--The potential targets will be 100 photographs from the *National Geographic* Magazine. They will be arranged in 20 packets of 5 targets each. The 5 targets within a packet will be selected on the basis of their dissimilarity (i.e., to be as different from one another as possible). A target can appear in one and only one packet. This target set will be duplicated to provide a session pool and an analysis pool.

(U) Target Selection--Using a pseudorandom algorithm seeded by a computer system clock, a target pack will be randomly selected from the session pool. By the same technique, a target will be selected within the designated pack.* Targets will be chosen with replacement, so that the same target could be selected more than once.

(U) Targeting Technique--To begin a session, the monitor will say the word "target," and the viewer will begin his/her response. The word "target" may be repeated throughout the session to focus the viewer's attention on the task.

(U) Analysis Technique--An analysis will be conducted at the end of each session. The analysis target pool will be used to provide the target and its four companions from the pack. These will be presented in random order with the response to an analyst who must

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* (U) Complete details of the algorithm can be found in: T. G. Lewis, Distribution Sampling for Computer Simulation, Lexington Books, Lexington, MA, 1975. (UNCLASSIFIED)

The current program has three layers of oversight. Twelve
senior scientists, drawn mainly from academia and from many disciplines,
constitute the Scientific Oversight Committee (SOC). The SOC's
responsibility is to review protocols before experiments, exercise
unannounced drop-in privileges to observe experiments in progress, review
and criticize all reports, and provide guidance for future research. Their
unedited comments are available as part of the program's technical final
report.

(U) A second layer of oversight consists of human use review. SRI conforms to the
Department of Health and Human Services guidelines on the use of human subjects as part of its
own policy, but, in addition and in cooperation with SRI, the current sponsor provides its own
review of the project's human use activities.

The third oversight layer is a high-level, multiagency program
review group. It met during FY 1987 to determine whether the current
program meets\   \objectives and to provide managerial direction for the
program. Its conclusion, published in a formal memorandum, was that the
program should continue.

D.   (U) A Presentation of Psychoenergetic Research

    \ SRI proposes a multifaceted approach consisting of detailed
briefings, access to members of the SOC, and demonstration experiments
          \. Specifically, SRI proposes:

- A 1-hour presentation on each of the following topics:
    - Review of   \ activity
    - Technical history and overview of current topics
    - Presentation by SOC members
    - Technical details of RV protocols and RV analysis

- Two demonstration RV experiments

·On the basis of the many years of research, SRI concluded that a persistent information transfer anomaly exists. The past research has been directed at exploring the potential applications for RV, so many research questions remain to be answered.

B.   (U) Current Program

SRI initiated a well-funded, diverse research effort as part of an R&D contract that began in FY 1986. The FY 1986 and the FY 1987 statements of work were based on the assumption that SRI's historical data base, when viewed in conjunction with the independent research across the field of parapsychology, provided sufficient justification to begin process-oriented experiments. These included various RV training programs; investigations of physical, psychological, and physiological correlates to RV; RV quality dependency on feedback; and a variety of RA and computer "dowsing" experiments.

(U) Although in the current year (FY 1988), the focus of the work has shifted toward screening mass populations for RV ability, some of the more promising process-oriented experiments have been continued.

(U) As an overview, a brief description of each of the final reports generated from the FY-86/87 statements of work are appended. The explanations only represent an overview of the experiments and should not be interpreted as complete.

C.   (U) Program Oversight

Since 1972, the CSP has had a variety of government, academic, and industrial scientific and managerial overseers. During 1972-1978, SRI convened an internal blue ribbon panel to provide corporate oversight and guidance. The primary purpose of this group was to determine whether SRI should continue to conduct research in this controversial area. As a result, the SRI President and chief Executive Officer issued a formal memorandum declaring that SRI should be actively involved in psychoenergetic research

SRI management continues to support this decision.

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Using these techniques SRI has investigated a variety of research and application questions. Table 3 shows specific areas of research and their principal results.

Table 3

(U) COGNITIVE SCIENCES PROGRAM TECHNICAL HISTORY

Activity	Results
RVA	Persistent evidence for RV
RV/Lab	Persistent statistical effects.
Distance	No effect (to 40 light–minutes).
Time	No effect (+/– days).
Shielding	No effect (Seawater, Faraday cages, SCIFs).
Spatial resolution	1 mm visual material, 1 mm target at 0.25 mi.
Temporal resolution	Unknown.
Other sensory	Generally unknown. Audio targets failed in 1 experiment.
Targeting methods	No effect (coordinates, people, abstract, photographs).
RV/Training	Persistent evidence for RV, but little evidence for training.
RV/Physiology Corr.	Statistical effects for EEG.
RV/Psychology Corr.	Mixed results.
RV/Analysis	Continuing improvement.
Search/	Mixed results.
Search/Lab	Mixed results.
Search/Computer	Persistent statistical effects.
RA	Persistent statistical effects.
Theory	Heuristic model with promising results.

Table 2

(U) REMOTE VIEWING TECHNIQUES

Technique	Description
SF Bay Locations **Targets**	Man–made, natural, and technological loca-tions in the San Francsico Bay area.
National Geographic Magazine photographs	Natural scenes.
Individuals	Information about unknown individuals or the whereabouts of known individuals.
Numbers	One–in–N choices (N < 10).
Beacon person **Targeting**	Person located at the target site.
Geographical coordinates	Standard coordinate system.
Abstract coordinates	Randomly encoded coordinates.
Sealed envelope	Envelope containing mission statements, pho-tographs, or coordinates of the intended tar-get.
Abstract word	Abstract word symbolizing target mission (e.g., target, function).
Rank–order **Analysis**	Blind rank–order N x N matrix for N sessions.
Rating	Same as above but with assessments rather than rank–orders.
Response concepts	Response drawing and written material sum-marized into declarative sentences. Assess-ment matrix constructed on a concept–by-concept basis.
Flat figure of merit	Same as above, except concepts stated *a priori* to the experiment and with separate accuracy and reliability measures.
Response/target concepts	Same as for response concepts with the addi-tion of similar encoding of mission–oriented target elements.
Fuzzy set figure of merit	Formalized version of response/target concept analysis except both stated *a priori* and with separate accuracy and reliability measures.
Cluster analysis	Fuzzy set encoding of targets to provide clus-ters of similar targets.
Orthogonal target packs	Packs of targets from different clusters to fa-cilitate rank–ordering via visual assessment of novice RV data.

(U)

In a typical laboratory experiment, the target material consists of natural locations within 0.5-hour drive from SRI. Table 1 outlines the protocol for a typical experiment. In this example, the targets are demarked by the presence of the assistant.

Table 1

(U) PROTOCOL FOR A LABORATORY EXPERIMENT

Time	Action
T_0	An interviewer and a viewer are sequestered in an isolated laboratory.
T_0+5	The target is selected randomly by an assistant.
T_0+35	The assistant arrives at the selected target.
T_0+35	The viewer (still in the isolated lab) describes the target with words and drawings.
T_0+50	The session ends, data are secured, and the assistant returns to SRI.
T_0+80	The viewer is taken to the target site for feedback.

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(U) To provide a quantitative assessment of performance, many such trials are required. An analyst who is not otherwise associated with the experiment, travels to each of the selected targets, and rank-orders all the RV responses from best to worst match to the location. A standard sum-of-ranks calculation produces a statistical estimate of the likelihood that information was transferred during the RV experiment.

Since 1972, SRI has developed a variety of targets, targeting methods, and analytical techniques for research and applications. Table 2 provides a summary and description of the techniques that have been used.

(U) The Cognitive Sciences Program (CSP) at SRI International conducts broadly based, interdisciplinary research to investigate those aspects of human behavior generally referred to as psychic. These phenomena can be divided into two main categories:

(1) Informational—The acquisition, by mental means, of material that is secured from usual sensory perception by distance or shielding.

(2) Causal—The perturbation, by mental means alone, of the physical environment that is secured from known interactions by distance or shielding.

The traditional names are ESP, telepathy, clairvoyance, and precognition for the informational phenomena, and psychokinesis, telekinesis, and materialization for the causal phenomena. The terms we use are remote viewing (RV) and remote action (RA), respectively.

(U) SRI has investigated both categories in detail, but this white paper focuses on informational, RV, processes.

A.   (U) Historical Perspective

    ⎯ The CSP (formerly the Psychoenergetics Research Program) began in 1972 ◄   ⎯⎯⎯⎯   to investigate the claims of Mr. Ingo Swann, a New York artist who appeared to have psychoenergetic abilities. The success of that investigation led to a multiyear, multisponsor project to determine the degree to which these abilities could be used ◄ ⎯⎯⎯⎯⎯⎯⎯⎯   ;

(U) From 1972 to 1975, SRI developed an RV protocol for information acquisition. A typical protocol for an RV trial has four elements:

(1) Target material that is isolated from the experiment participants.

(2) A method of demarking the specific target (from among many) for the trial.

(3) A person (called a viewer) who can provide information about the target material.

(4) A quantitative analytical system for comparing the RV data with the target material.

pretested with other trainees, the desire[_____] to move ahead
expeditiously with the training of this particular candidate resulted
in his providing our first research data on technology transfer of Stages
IV through VI. The trainee's attitude in this position is to be highly
commended for (1) his readiness to accept coaching and tutoring in this
difficult discipline, (2) attentiveness to all aspects of the discipline
as it developed within him, and (3) his patience in working through the
subtle intellectual learning process required.

With regard to the quality of the remote viewing
being generated on a routine basis, it would appear that Trainee #059 has
an unexcelled potential for continuing to develop remote viewing as a
viable information-gathering tool.

C.   (U)   Recommendations for Follow-On Actions

Trainee #059 is now in the position of being able
to contribute valuable information for the carry-over of training into the
applications area. Detailed authentication of the skills transfer (e.g.,
by extensive double-blind testing) was beyond the time/funding scope of
this training effort. It is recommended [_____] the
Trainee's skills to pursue appropriate in-house tasks to determine the
overall efficacy of the training[_____]. Should[
interest exist in contributing additional archival research data (in-
valuable to the overall effort), it is also recommended that authentica-
tion of skills transfer be documented in appropriate scientific formats.
For example, videotaping of sessions carried out under double-blind
conditions (where access to complete verification materials is possible),
would constitute an excellent vehicle for documentation.

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IV TRAINING EVALUATION AND RECOMMENDATIONS (U)

A. (U) Training Rate

Trainee #059 is the first individual to complete the six-stage training package described in this report. The distribution of site viewings over the various stages is shown in Table 4. The time frame involved in this effort was 2 1/2 years. An accelerated work program with recent trainees indicates, however, that this time might be shortened considerably.

Table 4

(U) DISTRIBUTION OF TRAINING SITES BY STAGE

Stage	Number of Sites
I	56
II	23
III	86
IV	31
V	8
VI	19
Total	223

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B. (U) Trainee Evaluation

As the first trainee to complete the S-I through S-VI program, Trainee #059 fulfilled an important role in the development of the overall training package. Although Stages I through III had been

Table 3

(U) STAGE V SITES

Trial	Date	Site	Response
1	1 Oct 84	United Nations	United Nations
2	2 Oct 84	L'Opera, Paris	Opera
3	3 Oct 84	Weyerhauser lumber facility Longview, WA	Factory, floating logs, making lumber
4	4 Oct 84	Library of Congress	Library of Congress
5	11 Oct 84	Keeneland Race Course, Lexington, KY	Racetrack
6	12 Oct 84	Bureau of Engraving,	Printing of money
7	30 Nov 84	Geyers steam field, Sonoma	Geothermal production
8	4 Dec 84	Church at Lourdes	Church at Lourdes

Lake Powell's eastern shore flanked by buttes), as rising land and water; (2) identified Ragged Falls in Yellowstone Park as a waterfall; (3) obtained an image of a dam in response to Itaipu dam (although incorrectly labeling it as AOL); and (4) provided a high-quality result

. Given the apparent integration of aptitudes expected in S-VI training, and the pattern of remaining problem areas designed to be handled by S-V techniques, the RVer was then advanced to the remaining S-V training portion of the overall training package as presently configured.

C.   (U)   Stage V

(U)   Stage V is considered a corrective-action stage.   Special "query" process techniques have been developed for the refinement of certain types of data as they emerge, and for the correction of AOLs by the determination of what lies underneath.

, Progress on incorporating S-V techniques into the RV process was very rapid for Trainee #059, in part because of having assimilated the S-VI structure first.   Only eight sites were required to declare Trainee #059 complete on S-V.   The trainee's responses to the sites are listed in Table 3.

, In addition to the results generated in the SRI training format (Table 3),

Trainee #059 began a series of verification tests under   controlled conditions.   It is reported that in the two tests done to date (carried out under conditions in which no feedback is provided to the RVer as the descriptions are being generated), results of the quality reported in the above table were obtained.

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(U)

mode, a circumscribed intrasession feedback is an option
typically used by the training monitor for pedagogical
purposes. Feedback phrases consist of five statements,
given at appropriate times: "correct, probably correct,
near, can't feedback, site!."

(U) with regard to the emphasis on modeling, it should be noted
that the use of such an approach (which was derived empirically) is not
simply an attempt to render a more exact representation of the site
than can be done verbally, or by means of drawings. Rather, the kines-
thetic activity during modeling appears to (1) quench AOL formation
associated with purely cerebral processes, and (2) act as a trigger to
produce further analytical content on the site--even concerning aspects
not being specifically addressed by the modeling.

(U) In the delivery of the Stage V and Stage VI training package,
S-VI was delivered out of sequence, i.e., delivered first. When RVer
#059 completed S-IV training only S-VI training was ready for delivery;
S-V training was still in R&D. Because the purpose of S-V is to correct
and elaborate, which is an addition to, rather than a foundation for, the
use of S-VI procedures, delivery of the two stages in reverse order was
an acceptable option. The two stages will therefore be discussed in the
order of delivery.

B.   (U)   Stage VI

(U) Altogether, 19 sites (listed in Table 2) were used in the
S-VI training sequence.

(U) As indicated in the footnote to Table 2, those sites noted
with a single asterisk (five) are ones for which clay models were con-
structed by the trainee during the training session, before access to
any feedback materials. All five are shown in Figures 1 through 5. As
can be see, the similarities of the models to the sites are striking.

Among the six test sessions used to complete the
S-VI series (in which no feedback was given during the session), the
trainee correctly (1) described the Padre Bay, Utah, site (a point on

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Stage I and Stage II, visual images may emerge spontaneously. In that case, they are not suppressed, but simply noted and labeled as AOLs.

4. (U) Stage III (Dimension, Motion and Mobility)

(U) Whereas in Stage I and Stage II viewing, data appear to emerge (typically) as fragmented data bits, in Stage III, we observe the emergence of a broader concept of the site. With Stage I and II data forming a foundation, contact with the site appears sufficiently strengthened that the viewer begins to have an overall appreciation of the site as a whole (which we label "aesthetic impact"). Dimensional aspects such as size, distance, and motion begin to come into play, and emphasis is placed on generating configurational outlines and sketches (e.g., the outline of a city). Examples generated by RVer #059, the RVer of this study, can be found in the footnoted reference.*

5. (U) Stage IV (General Analytical Aspects)

Because of the apparent increased contact with the site that occurs in Stage III (a "widening of the aperture" as it were), data of an analytical nature begin to emerge. This follow-on process constitutes Stage IV in our nomenclature. Contained in Stage IV data are elements that go beyond the strictly observational, such as ambience| | cultural factors , and function or purpose| | Thus, Stage IV viewing transcends simple physical descriptions of what is visible to the eye, to take into account human intention. Because, one | point of view, it is the latter that is typically a matter of   concern, Stage IV is considered to be the threshold for crossover into application [| utility.

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*(U) Puthoff. H. E., "Special Orientation Techniques: S-IV (U),"   , SRI International, Menlo Park, CA (July 1984),

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I OBJECTIVE (U)

SRI International is tasked with developing remote viewing (RV)* enhancement techniques   Of particular interest is the development of procedures that have potential application, and that can be transmitted to others in a structured fashion (i.e., "training" procedures).

Under particular study in this effort is whether a Coordinate Remote Viewing (CRV) technology, a technique that utilizes coordinates to facilitate acquisition of a remote-viewing target, can be successfully transferred

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*(U) RV is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding.

1

December 1.

Final Report
Covering the Period 15 November 1983 to 15 December 1984

SPECIAL ORIENTATION TECHNIQUES:

S-V, S-VI (U)

SRI Project

Approved by:

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This document consists of 22 ʃ

V SUMMARY (U)

A. (U) Overview

The research effort described in this report addresses the requirement⸱ ⸺to develop techniques to locate targets of interest whose positions are not known, or are known only approximately. Specifically, we have investigated the possible use of psychoenergetic search techniques as an adjunct to other technological means. Experiments have been carried out, examining several promising methods that have emerged in the field over the past decade or so. Care has been taken to assess the various procedures under strict double–blind conditions, and have included successful application to the location of targets under client control over baselines of several thousand km.

B. (U) Focus of Investigation

(U) In this study the search techniques under consideration have been investigated in applications ranging from the locations of objects hidden in the same building as the search RVer, to the search for an individual or building over transcontinental baselines. The methods examined range from simple one–step map marking ("map dowsing"), to calculator– and computer–assisted search involving sophisticated statistical averaging techniques.

(U) Strong evidence emerged in this study that certain individuals using certain techniques were capable of narrowing down the area of target location to a statistically significant degree, indicating the basic viability of the psychoenergetic approach as a search tool.

(U)

evaluation program to determine the most likely location. Should this technique prove successful, it has wide application beyond the spatial location of targets of interest. Because the CAS algorithm only involves selecting the proper moment to register a response, the meaning of the numbers used in the cycle counter is completely arbitrary, and thus can correspond to the elements of any discrete search problem.

G.   -Controlled Long-Distance Test of "Agent"/Building Search, Facility Level (Continuum)

As a measure of progress made during the contract effort, a test was proposed in which the Search team put together by SRI would attempt to locate targets _____. For this purpose two experimental series were designed and carried out.

1.   (U) Long-Distance "Agent" Search

For the first test series, _____ personnel chose a series of ten locations _____. Each of the ten locations were to be visited, in turn, for one hour, at predetermined times, by an "agent" Members of the Search team where given a photograph of the "agent" to be located, a listing of the target times (1100 and 1600, EST, on 28-30 November, and on 3-4 Dec.), and a map _____, marked with a 1.5 km × 1.5 km square indicating the overall target area of iterest.

(U) Four Search RVers were chosen for this task (Nos. 164, 688, 198, and 232), three of whom demonstrated success in other search tasks covered in this report, the fourth (#232) being reported as having been successful in experiments conducted in a training class taught by one of the others (#198). During the time-frame of the experiment, two of the RVers were located in California (Nos. 164 and 688), while the remaining two were in Florida. Thus, the experiment was carried out over baselines of several thousand km.

The experiment was carried out with the SRI researchers blind as to the target locations (that is, the experiment was double blind.) At the end of the targeting period, the search-determined locations were transmitted _____ after which a list of the actual target locations used were made available to the SRI team.

Table 5

(U) RESULTS OF BASIC INVESTIGATION
(p–values)

RVer	Space	Time	Difference*
531	.560	.009[†]	.038[†]
240	.365	.042[†]	.164
859	.528	.042[†]	.100
452	.752	.911	.691
310	.184	.363	.652
807	.047[†]	.994[*]	.998[*]
164	.031[†]	.295	.826

*Tested against the hypothesis that time > space.
[†]Significant
[‡]Target avoidance.

UNCLASSIFIED

3. (U) CAS Against Real Targets (Application)

As a final test, can CAS techniques be used to locate unknown
targets \   The use of both static and dynamic techniques will
be considered.

(U) In the case of the latter, a useful technique is to divide the search space into
N regions. A counter is incremented once each millisecond as before, but it begins at one
and recycles after N + 1. The extra cell is used to cover the case of "none of the above".
To illustrate how this technique might work, let us consider the case of a kidnap victim who
is suspected of being held somewhere in the west Beruit area. This area is divided into 20
regions of interest. (The CAS counter then cycles through 21.) A large number of trials are
collected for a given participant, and a large number of participants could be used. Statistics
developed during the *known target* portion of the study would be used as an input to the

(U)

participant was constrained to provide a few trials (< 5) at each sitting. The analysis that was used is described in Section III.A.

(U) From a purely mechanistic point of view, we might expect that locating a dynamically—moving target would be "easier" than a static one. Because the target is moving once a millisecond, the target is, on the average, actually "under" the mouse button twice each second. Thus, two times a second, the participant has the opportunity to locate the target correctly. He/she must, however, press the mouse button at the proper time (finding a dynamically—moving target translates to finding a moment in time to initiate a response). In the static case, it is possible (worst case) that the location will never be under the mouse button, because the RVer, in moving the button display around the screen, misses the actual location. Thus, we would expect a bias in favor of finding the dynamic target simply because the number of opportunities of registering the correct response is greater.

(U) The results of the basic investigation are shown in Table 5. Five of the seven participants produced significant evidence of psychoenergetic functioning (p < 0.0004). Of these five, three produced results favoring the timing hypothesis, and two favored the "dowsing" hypothesis. Two participants produced significant differences between temporal and spatial "dowsing;" one (#531) favoring temporal, the other (#807) favoring spatial. Participant 531 showed a 27 percent reduction from the mean chance expectation (MCE) distance of 10.4 units, while Participant 807 showed a 16.1 percent reduction. Overall, there is strong evidence that individuals can locate abstract computer generated targets, yet there is no evidence that there is a preference for the timing technique.

2.   (U) Location of Real—World Targets (Known)

〔   〕 The first step in determining if the CAS technique is capable of locating unknown ___ targets of interest, is to demonstrate that the technique can be applied to real—world targets whose locations are known. This step has been taken under controlled test conditions, as described in Section G.

F. (U) Computer Assisted Search (CAS)

(U)   To determine the applicability of computers as aids in the general search problem, we have developed a graduated series of studies—beginning at a basic level of investigation and evolving toward real-time applications. As a first step in determining the degree to which a computer can be used as an aid in search problems, an experiment was conducted that demonstrated that an abstract computer-generated target could be located by psychoenergetic means. The next stage involved testing whether an "association" between an abstract computer "target" and an actual target could be established.

1. (U) Basic Investigation (Simulation)

(U) We have conducted an experiment to determine if an abstract computer-generated target can be located by psychoenergetic means. To accomplish this, we designed an experiment that would also provide information with regard to two possible mechanisms:

- To search in space for a target that remains fixed for the duration of a trial.

- To search for a target that is rapidly moving in space.

(U) The first case is the more familiar "dowsing" situation; a target, whose location is unknown, must be found by psychoenergetic means. The second case was established on the basis of earllier research at SRI. Namely, that it is possible for an individual to initiate an action *at the proper time* to optimize the result of a psychoenergetic experiment.

(U) During the CAS experiment, seven individuals were asked to contribute 50 trials each. To test the "dowsing" hypothesis, the target location was fixed throughout a trial. To test the timing hypothesis, the target location was changed once each millisecond. Dynamic versus static target trials were determined by a balanced random protocol that was the same for each of the participants. Furthermore, they were unaware that there were two test conditions. A bounded area representing the perimeter of a 20 × 20 cell matrix was shown to the participant, who could register his/her response by moving a graphics pointing device (mouse), and could press a button to indicate the choice. Each participant was told that the target could be any place within the display boundary, and when the moment "seemed right," could register his/her choice by pressing the button on the mouse. Each

D. ▬▬▬▬▬   Simulation of "Agent"/Facility Search (Continuum)

A series of trials was undertaken with a special RVer, recommended by the American Society of Dowsers, who responded to an invitation to participate in the SRI search program (#198). An initial exploratory series of eight trials was carried out as in Experiment B, Condition I. The results were not beyond chance expectation. Debriefing of the RVer revealed a preference for tasks that involved people, as in locating people, or places inhabited by people. Therefore, a second exploratory series of fifteen trials was performed, the first ten of which repeated the same experiment, but with an individual replacing the object. For the remaining five trials, the target area in which the individual was located was expanded to the SRI complex as in Experiment C above. The overall result in this series also was not beyond chance expectation, but the target/response pair distances were ordered such that there was a trend from larger to smaller distances as the series progressed, which began to approach statistical significance ($p = 0.07$). Therefore, a more extensive series was planned in which "peopled" locations were to be the targets.

(U) For this series, the target area was a > 20 sq. km area (4.8 km $\times$ 4.8 km). The viewer was provided a satellite photograph of the area with a 20 $\times$ 20 unit grid overlay. In order to investigate potential differences in targeting strategies, a targeting protocol was prepared for the series in which, on an intermixed basis, the RVer was targeted on being (1) given a photograph of the site, e.g., of a house, (2) told that an experimenter known to the RVer was at a site, (3) told the name of the site (e.g., Stacey's Bookstore). Twenty-one trials were carried out under this protocol: six under targeting method (1), six under targeting method (2), and nine under targeting method (3).

(U) In the 4.8-km-square area, the mean chance expectation distance is 2.5 km. In the 21-trial sequence, the target/response pair distances ranged from a maximum of 3.36 km to a minimum of 0.34 km, with a mean of 1.55 km. This result (a 38 percent reduction from MCE) is statistically significant at $p = 1.1 \times 10^{-3}$.

(U) With regard to the difference in RVer performance between targeting conditions, the mean target/response pair distance was least for the photo-targeting condition (1), median for the person-targeting condition (2), and maximum for the name-targeting condition (3)—1.15 km, 1.58 km, and 1.80 km respectively. One-way analysis of variance

(U)

aspect to it than in Condition I, where the task is structured more along application lines of an experimenter and RVer searching for an object placed by a third party. Another difference is that the second series followed the first; the trend may simply reflect the "decline" effect that is typical in the psychoenergetics field when experimentation becomes a repetitive routine. Further work along these lines would be required to clarify this particular facet. Nonetheless, with both sets of data combined, the overall result, a mean target/response pair distance of 16.2 ft (17 percent reduction of MCE), is statistically significant at p = 0.01. Thus, the experimental series as a whole indicates that the application of psychoenergetic search techniques, although not yet developed to high accuracy, can augment other techniques in locating small target objects in a remote, otherwise inaccessible, space.

C.   Simulation of "Agent" Search, Facility Level (Continuum)

(U) The RVer who participated in the above experiment was asked to take part in a second experiment of a similar nature. In the second case, the target was to be a person, located somewhere on the grounds of the SRI 70-acre complex. The RVer entered the RV chamber on the third floor of the RPL, then an experimenter was sent to a random location, determined by entry into a random number generator for x-y coordinates on a 20 × 20 unit grid.

(U) Forty trials were carried out—20 in each of two conditions; the second condition differed from the first only in that the RVer had in his possession a sample of hair from the individual to be targeted (to test the so-called "witness" concept, part of the lore in dowsing studies).

(U) The outcome of this experiment was that neither series yielded results differing from chance expectation, nor was there any significant difference between the two conditions. Although the RVer expressed subjective differences in attempting to locate a person (as opposed to an object), no conclusions as to the difference between the two Experiments B and C* could be drawn.

---

*(U) Defined in Subsections B and C of this chapter and hereafter referred to as Experiments B and C.

IV EXPERIMENTAL EFFORT (U)

A. (U) General

(U) In pursuing the search task, SRI engaged several remote viewers (RVers) ranging from (1) volunteer subjects, (2) experienced SRI RVers, through (3) well-known professional "dowsers" (who were contacted through the American Society of Dowsers). In somewhat extensive work with the latter, every effort was made to determine whether whatever skills could be demonstrated might be of a transferable nature.

B.   ) Simulation of "Bug" Search (Continuum)

(| Described here is a test of whether a search procedure involving attempts to locate small objects in a room_____) would be successful. The target location was a large conference room in which a >1400 sq. ft. area (37.5 × 37.5 ft) was designated as the potential target area. For each trial, a small hand-size object was chosen (e.g., a calculator) then placed somewhere in the conference room—the location was determined by entry into a random number generator for x-y coordinates on a 20 × 20 unit grid.

(U) A total of 50 trials, 25 in each of two conditions (labeled I and II), was carried out with an experienced SRI RVer (#688) as search percipient. The RVer was in the RV chamber on the third floor of the Radio Physics Laboratory (RPL); the target area was a locked and guarded, nonoccupied conference room on the ground floor of the RPL.

1. (U) Condition I

(U) In Condition I, for each trial, an experimenter (E1) places an object at a location in the target room (determined by random number generator), then remains outside the target room as a guard. A few minutes later, at a previously-agreed-upon time, Experimenter E2, who is kept blind as to the object's location, has the RVer indicate his assessment of the object's location. The RVer places a mark on a piece of paper containing a single blank square to represent the target room. At the end of the trial, the RVer turns

- 9 -

The goal of the present effort is to research the literature, then perform laboratory experimentation to determine whether, and to what degree, such functioning is a viable candidate for application. This includes determining the best methods and efficiencies of various search techniques, and the appropriate statistical analyses for evaluating results.

B.   (U) Search Categories

Search tasks fall into two broad categories of effort—continuum and discrete. In the "continuum" search category, a target of interest is typically to be located on a continuum area map, such as a topographical map or navigational chart. For this category, the target/response distances and circular error probabilities (CEPs) constitute the statistics of interest in evaluation.

In the "discrete" search category, a target of interest is associated with a discrete number of possibilities

For this category, the appropriate statistic of interest in the evaluation of a series of location attempts is a comparison against the simple binomial statistic of the probability of obtaining an observed R hits in N trials, by chance.

II INTRODUCTION (U)

A. (U) General

H
⟨   is a claimed ability in the
broad field of psychoenergetic functioning; namely, the ability to search for and locate water,
oil, minerals, objects, individuals, sites of archaeological significance, and so forth. This
ability can be contrasted to the related psychoenergetic ability "remote viewing," in the
following manner. In remote viewing, the RVer is given location information (coordinates,
"beacon" agent, picture), and (RV) asked to provide data on target content

in "search," the RVer is given information on target content, then asked to provide
location data (e.g., position on a map). The two functions are thus complimentary to each
other.

(U) The ability to locate targets is most often referred to as "dowsing" in the Western
literature, and "biophysical effect (BPE)" in the Soviet/East Bloc literature. In this report,
we shall refer to such techniques simply as "search." Although much of the literature is
anecdotal,* attempts to quantify the ability and to determine its mechanisms have been
pursued.†

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*(U) For the most comprehensive and authoritative survey of the claims for dowsing, see
Christopher Bird, *The Divining Hand*, E. P. Dutton, New York, NY (1979).

†(U) See, for example, papers published by Z. V. Harvalik, beginning 1970, in *The
American Dowser*, the journal of the American Society of Dowsers. (Harvalik is the
)

I OBJECTIVE (U)

▶The objective of this effort at SRI International is to investigate a particular aspect of psychoenergetic phenomena called Target Search. This search technique is designed to determine the location of objects, individuals, and facilities where the potential target area can range from room– to global–sized dimensions.

CONTENTS (U)

December 1984

Final Report
Covering the Period 15 November 1983 to 15 December 1984

TARGET SEARCH TECHNIQUES (U)

SRI Project 660

Approved by:

Copy No. 8

This document consists of 33 pages

333 Ravenswood Avenue
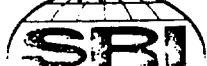
The Stage IV proficiency demonstrated in the completion series has been maintained by the trainee as work has begun on Stage VI; this provides additional evidence that a stable performance level on S-IV characteristics has been achieved.

B. (U) Trainee Evaluation

Other than the training monitor (#002), Viewer #059 is the first to complete S-IV training. Although previous training stages (S-I through S-III) had been pretested with other trainees, the desire to move ahead expeditiously with training of this particular candidate dictated a reversal of the usual development procedure. This candidate thus provided our first research data on S-IV technology transfer, which turned out to be of exceptionally high quality. Until subsequent individuals have completed S-IV training, there is not a substantial body of work for comparison. Nonetheless, it should be stated for the record that this trainee exhibited the least of difficulties in assimilating the materials, as compared with the progress of trainees in general, and as compared with the training monitor's own progress through S-IV in particular. In addition, Trainee #059 exhibited a high professional demeanor throughout the training, and applied himself at all times with the utmost stamina and acumen. Taking these factors together, Trainee #059 was a model trainee, and thus his profile constitutes an important data point with regard to trainee selection.

C. (U) Recommendations for Follow-On Actions

(U) Given the quality of response to S-IV training of Trainee #059, two recommendations for follow-on actions are offered:

(1) The trainee should continue in the training in order to incorporate additional skills available in the remaining stages.

(2) Given that detailed authentication of the S-IV skills transfer (e.g., by extensive double-blind testing), was beyond the time/funding scope of the present effort, it is recommended that, in parallel with training, the client enlist the

IV   EVALUATION AND RECOMMENDATIONS (U)

A.   (U) Completion Indicators

(U) Completion of a stage is signalled by (1) essentially flawless control of session structure while generating the required elements for that stage, and (2) production of a sequence of at least five site descriptions whose content/quality meets the requirements for that stage.

| | As indicated earlier, in Stage IV training, the viewer is required to provide information culminating in not only a description of the site, but correct identification of the function as well. These requirements were met by Viewer #059 in his final series, Trials 22 through 26. The results are summarized in Table 3 below, as well as in representative Figures 7 through 9.

Table 3

(U) STAGE IV COMPLETION TRIALS 22 THROUGH 26

Session/Trial	Site	Response
27/22	St. Patrick's Cathedral, New York, NY	Called a "church," with phonetic of "saint"
28/23	West Virginia University, Morgantown, WV	Called "school feeling"
29/24	FMC chemical plant, Newark, CA	Called "chemical factory"
30/25	Romic hazardous waste storage plant, Palo Alto, CA	Called "waste treatment plant"
31/26	Stanford Linear Accelerator Stanford, CA	Called "linear accelerator," named "Stanford Linear Accelerator"

17

(U)

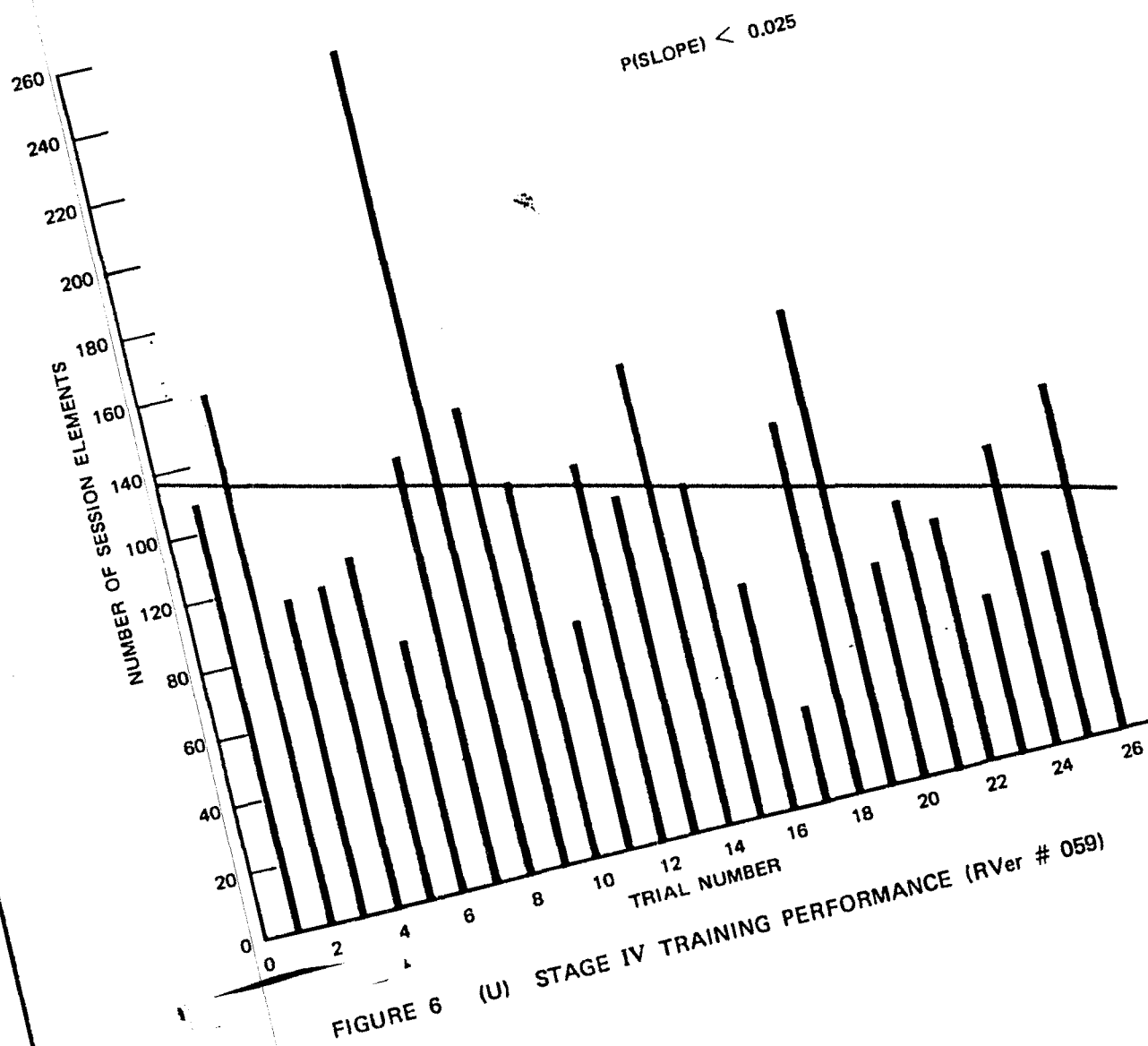the primary source of "hard" information that in most instances appears to result in the decoding of site function.

To give some indication of progress through the series, we examine here some specific cases. For Trial 2, the site was a hospital; the trainee accumulated a total of 161 data bits in two sessions before identifying the site as a hospital. By Session 12 (Trial 8, Cape Kennedy), the difficulty in maintaining functional reliability while acquiring the new skills (corresponding to the expected performance-curve dip of Figure 2) surfaced in the form that 249 elements were required before site identification occurred (site named by name).

By Session 25 (Trial 20), the power-generating function of Kariba Dam was identified after only 57 data bits, with another seven data bits furnishing the phonetic "kirib" for a total of 64 data bits. It was also noted during this viewing that the viewer spontaneously experienced not only an expressed desire to three-dimensionally "model" the site, but the emergence of phonetics, both attributes of the higher stages (S-VI and S-VII, respectively). This we took as indicators of readiness for advancement to the following stages.

Table 2

(U) DATA-BIT DISTRIBUTION,
S-IV TRAINING SERIES, TRAINEE #059

Session/ Trial	S-I thru S-IV Basic Elements (Ideograms, Sketches, etc.)		Post-Stage IV Onset Channels								Total Number of Data Bits
			Sensations and Dimensional References		Feeling Tones		Physical/ Functional Details		Analytical Overlay Lines		
	S-I thru S-III	S-IV	1	2	3	4	5	6	7	8	
1/1	35	11	22	17	2	1	18	14	8	1	129
2/2	34		17	5	2	13	9	9	2	3	} 161
3/2	29		16	5	1	8	3	3	1	1	
4/3	36	3	22	11	5	2	9	5	3		96
5/4	14	2	22	15	2	11	10	11	6	2	95
6	Abort (error in coordinate reading)										-
7	Abort (trainee medical problem)										-
8	Abort (error in coordinate reading)										-
9/5	32	3	28	11	3	2	14	5	5		103
10/6	18	2	12	6	2	3	16	12	5		76
11/7	71	2	10	9	3	6	14	6	8		129
12/8	40	15	32	20	14	20	43	34	29	2	249
13/9	26	16	16	8	10	9	21	24	7	1	138
14/10	16	4	24	8	7	7	27	13	6		112
15/11	30	5	10	8	1	10	2	2	1		69
16/12	25	9	13	7	2	11	18	22	5	1	113
17/13	38	9	13	16	2			12	11		101
18	Abort (error in coordinate reading)										-
19/14	36	20	35	13	3	8	7	5	11		138
20/15	44	13	9	14	1	14	6				101
21/16	53	3	1	1	1	1	6		2		68
22/17	28										28
23/18	27	19	13	11	1		16	20	3	1	111
24/19	38	21	21	20	1	4	20	12	5		142
25/20	18	13	9	5	1		7	11			64
26/21	16	10	15	18	2	14	5		1		81
27/22	33		7	10		2	4	2	15		73
28/23	16		7	7	1	4	7	3	2	1	48
29/24	12	13	25	9	4	8	15	4		1	91
30/25	17	4	15	3	2		9	4	2		56
31/26	27	14	14	10	5	7	10	10	7		104

P(SLOPE) < 0.025

NUMBER OF SESSION ELEMENTS

TRIAL NUMBER

FIGURE 6 (U) STAGE IV TRAINING PERFORMANCE (RVer # 059)

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B.   (U)   Trainee #059 Response to Stage IV Training

Trainee #059 began S-IV training during the second
week of December 1983, and completed the requirements for S-IV on
22 March 1984. Thirty-one (31) S-IV training sessions were conducted with
this trainee. With four sessions aborted for various reasons, and with
one site requiring two sessions to complete, the 31 sessions provided a
total of twenty-six (26) completed trials. The session particulars,
including date/time, site, and coordinates, are listed in the Appendix.
The types of sites that must be identified include churches, hospitals,
dams, ruins, power plants, art galleries, libraries,

j, schools, airports,
caverns, observatories,   ,and accelerators.

A record of the total number of data bits generated
for each site (number of ideograms, sketches, sensations, dimensional
references, feeling tones, physical or functional details, and analytical
overlays) is given, trial by trial, in Figure 6. A given session had as
many as 249 separate elements (Trial 8), or as few as 28 (Trial 17). In
general, the end point of a session was recognition of the site's primary
function. Although site complexity was increased as the series progresse
the number of data bits actually required (before site recognition)
decreased on the average (p < 0.025) as proficiency with the S-IV tech-
niques was acquired--an expected outcome.

(U) The data-bit distribution among the various categories tracked
in S-IV training is shown, trial by trial, in Table 2. The first column
tallies the number of ideograms, sketches, and the like, generated in
the initial S-I through S-III process, the second column tallies additioi
elements of this type generated after the S-IV process has begun. The
remaining eight columns tally the number of data bits generated for each
of the S-IV channels of interest. (More specific channel labels have be
passed to the client under separate cover; the specificity is protected
to prevent premature disclosure to prospective trainees.) It is con-
sidered that the data bits accumulated in Channels 5 and 6 constitute

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III   STAGE IV TECHNOLOGY (U)

A.   (U)   Overview

Whereas Stages I through III are directed toward recognition of the overall gestalt and physical configuration of a target site, Stage IV is designed to provide information as to function, i.e., as to the purpose of the activities being carried out at the site. Thus, Stage IV viewing transcends simple physical descriptions of what is visible to the eye, to take into account human intention. Because,'
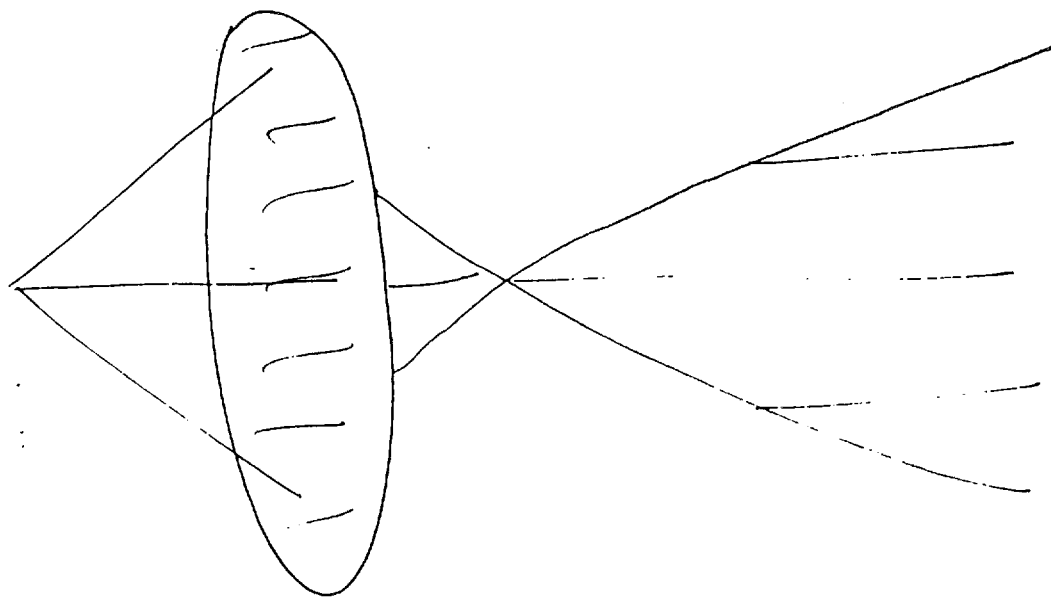
point of view, ╵

Stage IV is considered to be the threshold for crossover into   utility.

(U)   In Stages I through III, information is collected in the form o ideograms, and their motion and feeling (S-I), sensations at the site (S-II), and sketches that result from expanded contact with the site (S-III). These various "carrier" signals are individual in nature, and special techniques have been developed to handle each in turn, more or les in a serial fashion. Once stabilized, Stage III forms the platform upon which can be built the more refined techniques of Stage IV.

(U)   In Stage IV, the viewer is trained to accumulate data bits in no less than eight separate categories, in parallel, in addition to processing additional ideograms and sketches. These range from broad categories of sensations and dimensional references, through specific qualities (physical/technological detail, cultural ambience, and functional significance), and includes tracking of the analytical overlay line. To keep these separate signal lines on track requires exceptional control of sesssion structure--an ability trained for in the lengthy SI through SIII training period. With these elements under control, the Stage IV data-bit-acquisition procedures can then be used to build up an interpretation as to the site's activities and functions.
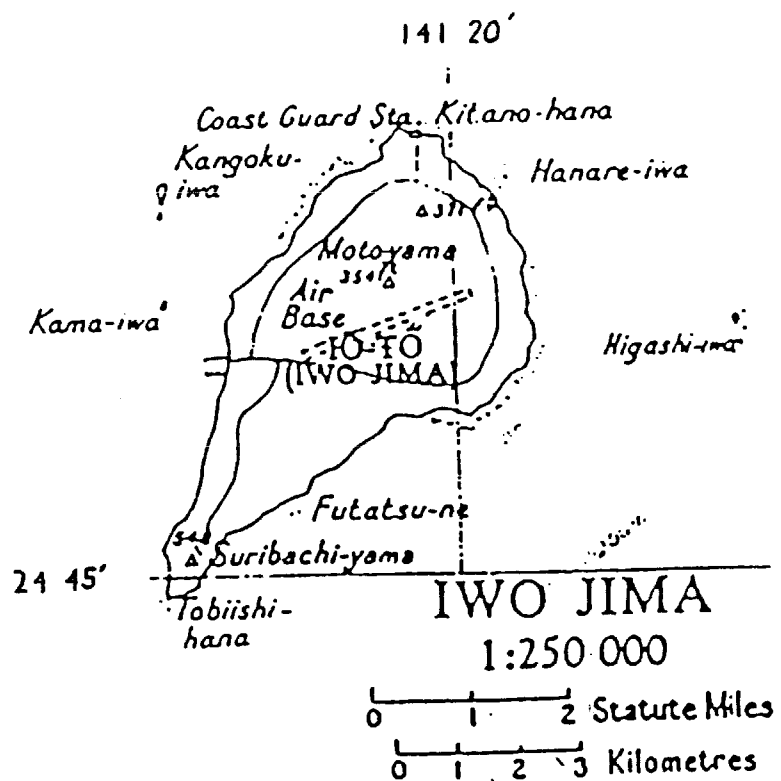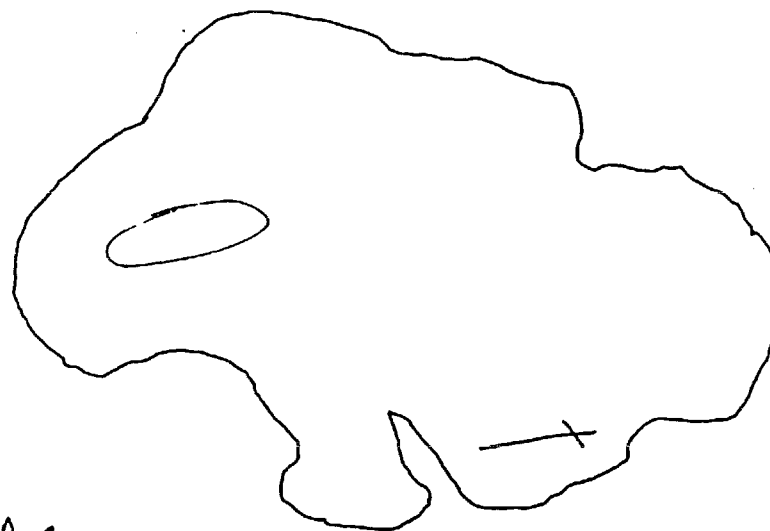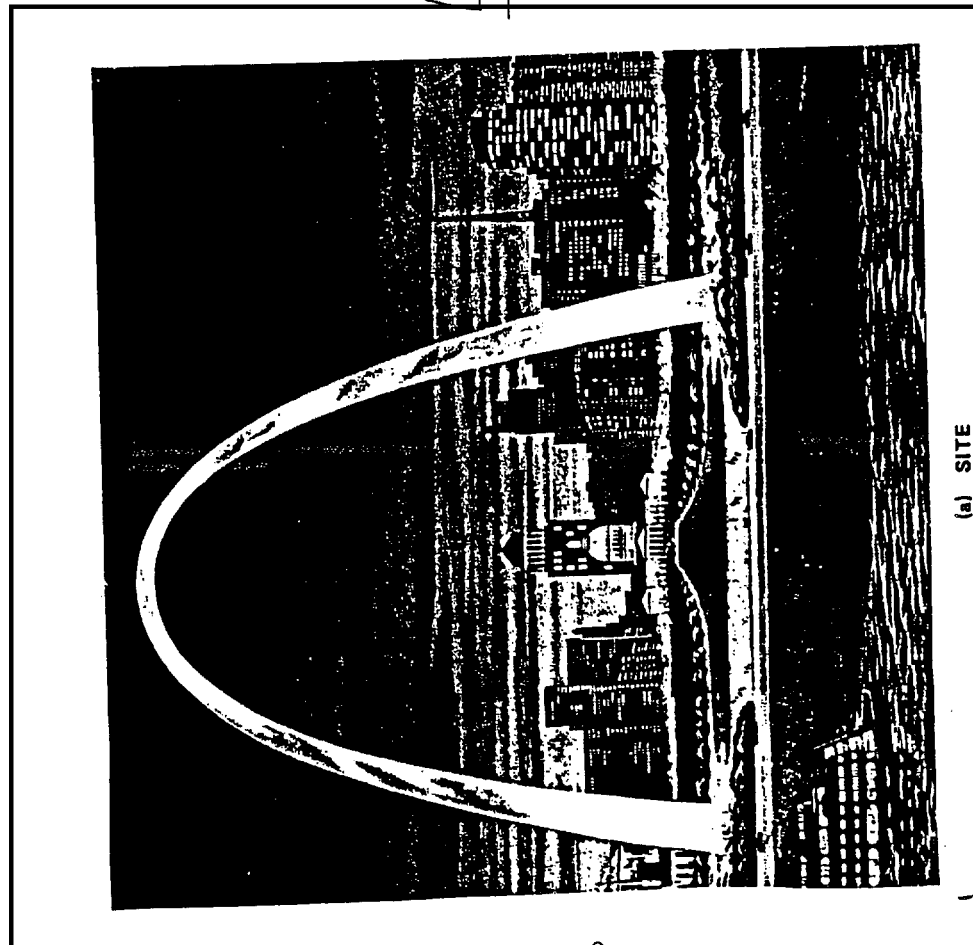
11

End

CPYRGHT

(b) RV RESPONSE

(c) SITE

141 20′

Coast Guard Sta. Kitano-hana

Kangoku-jima

Hanare-iwa

Motoyama

Air Base

IO-TO (IWO JIMA)

Kama-iwa

Higashi-iwa

Futatsu-ne

24 45′

Suribachi-yama

Tobiishi-hana

IWO JIMA

1:250 000

0   1   2 Statute Miles

0   1   2   3 Kilometres
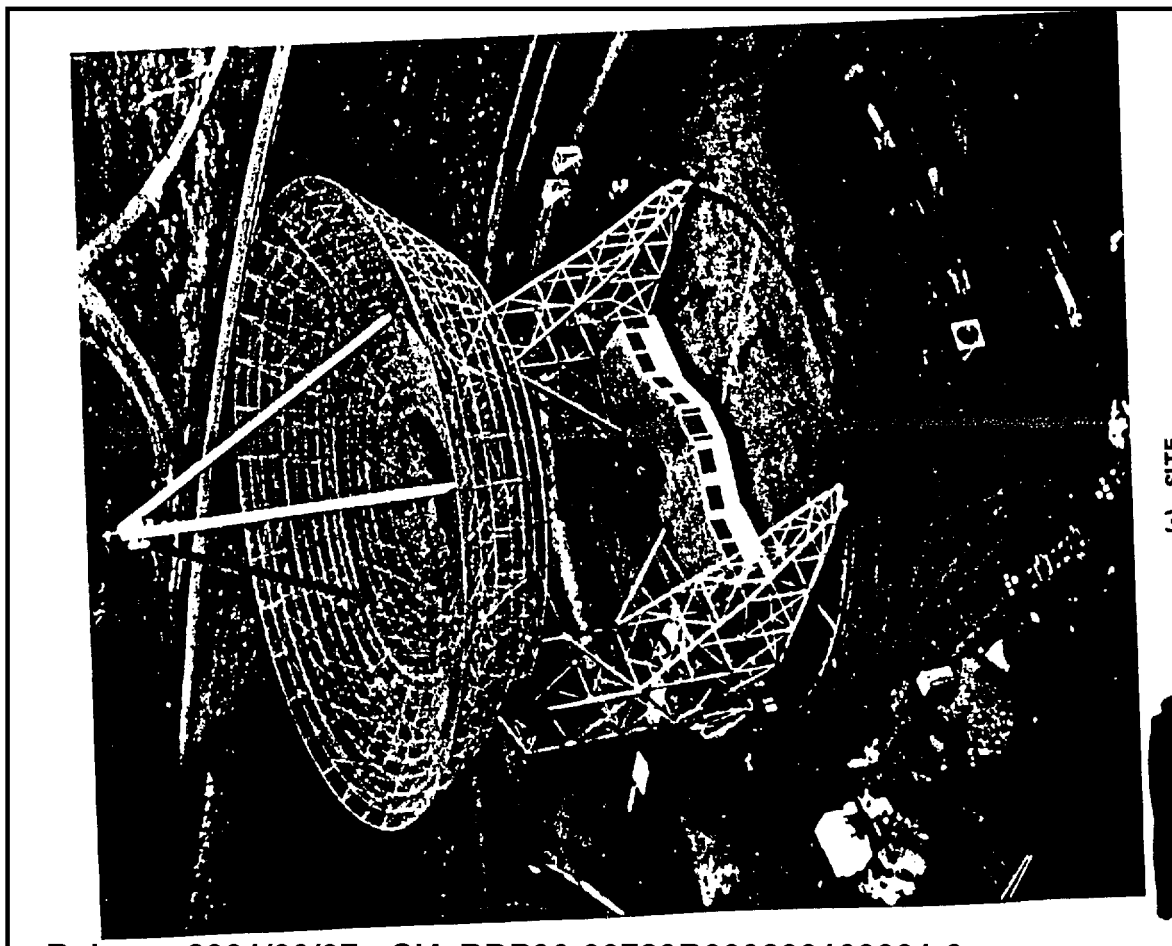
(a) SITE

A Curvy
Rism
B high ground CFB

End

(b) RV RESPONSE

FIGURE 4   (U)   IWO JIMA ISLAND

Art Break

St Louis
Arch

CPYRGHT

(b) RV RESPONSE

(a) SITE

FIGURE 3   (U)   GATEWAY ARCH, ST. LOUIS

PERFORMANCE MEASURE
(e.g., SCORING RATE)

SPONTANEOUS "FIRST-TIME" EFFECTS

DECLINE EFFECT

LEARNING PHASE

SKILL PLATEAU ESTABLISHED

UNCLASSIFIED
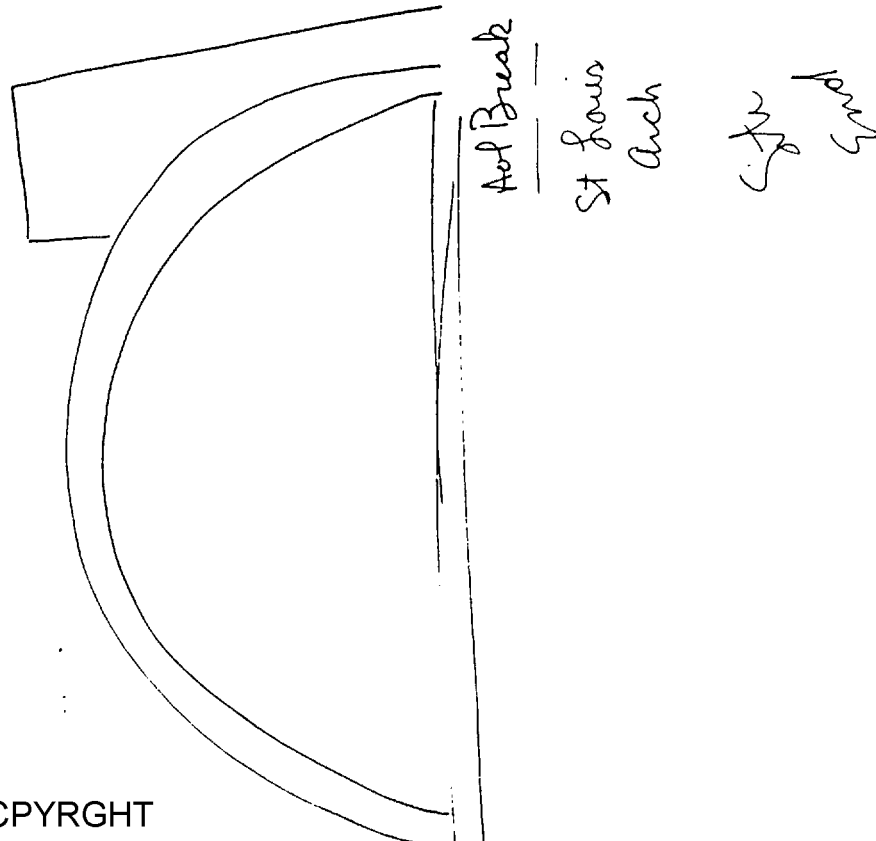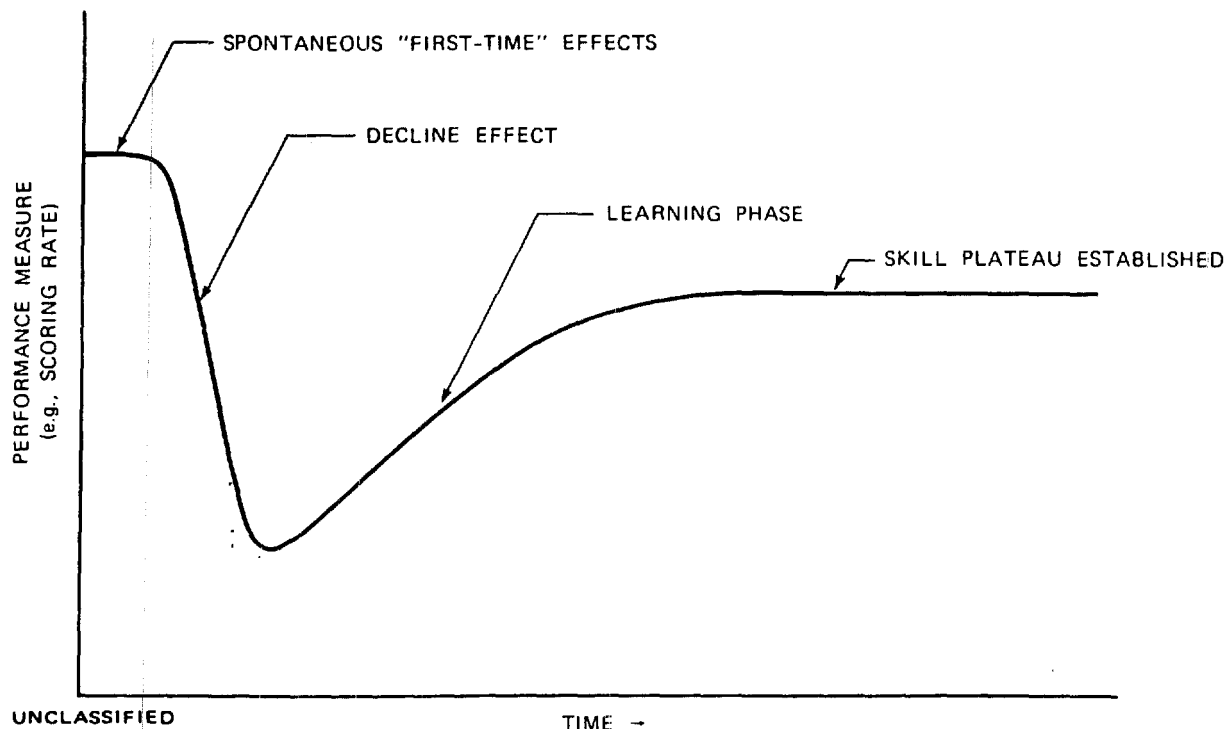
TIME →

FIGURE 2   (U)   IDEALIZED PERFORMANCE-OVER-TIME CURVE

5.   (U)   Stage IV

Because of the apparent increased contact with
the site that occurs on Stage III (a "widening of the aperture" as it were),
data of an analytical nature begin to emerge. This follow-on process con-
stitutes Stage IV in our nomenclature. Contained in Stage IV data are
elements that go beyond the strictly observational, such as ambience
cultural factors
and function or purpose

Stage IV viewing is therefore considered to be the crossover
point into   functioning with potential   value.

(U)

the site (e.g., wavy/fluid for water). Note that this response is essen-
tially kinesthetic, rather than visual.

3.   (U)   Stage II

(U)   In Stage II, the viewer is trained to become sensitive to
physical sensations associated with the site, i.e., sensations he might
experience if he were physically located at the site (heat, cold, wind,
sounds, smells, tactile sensations, and the like). Again, this response
is essentially nonvisual in nature (although color sensations may arise a
a legitimate Stage II response). Of course, in both training stages,
visual images may emerge spontaneously. In that case they are not
suppressed, but simply noted and labeled as AOLs.

(U)   Provided Stages I and II have been brought under control t
the viewer, Stage III training is initiated. The phrase "under control"
means that the viewer has been observed to pass through a performance cur
of the type shown in Figure 2, which typically applies to skills learning
Certain objective performance measures, such as number of session element
or number of coordinate iterations required to reach closure on site
description, are tracked to determine progress along the performance cur\

4.   (U)   Stage III

Whereas in Stage I and II viewing, data appea:
to emerge (typically) as fragmented data bits, in Stage III, we observe
emergence of a broader concept of the site. With Stage I and II data
forming a foundation, contact with the site appears sufficiently strengt
that the viewer begins to have an overall appreciation of the site as a
whole (which we label "aesthetic impact"). Dimensional aspects such as
size, distance, and motion begin to come into play, resulting in configu
rational outlines and sketches. For training practice, sites are chosen
especially to require the Stage III aptitudes of dimensional perception,
e.g., sketching of an outline-tracking nature. Examples generated by
viewer #059, the viewer of this study, include the Gateway Arch in St. I
Iwo Jima Island, and the Stanford radiotelescope, shown in Figures 3 thr

(U)

impression of an island is immediately interpreted as Hawaii.) This we call analytical overlay (AOL).

(U) Our investigation of these overlay patterns leads to a model of RV functioning, shown schematically in Figure 1. With the application of a "stimulus" (e.g., the reading of a coordinate), there appears to be a momentary burst of "signal" that enters into awareness for a few seconds, and then fades away. The overlays appear to be triggered at this point to fill in the void. Success in handling this complex process requires that a remote viewer learn to "grab" incoming data bits while simultaneously attempting to control the overlays. Stage I and Stage II training is designed specifically to deal with this requirement.
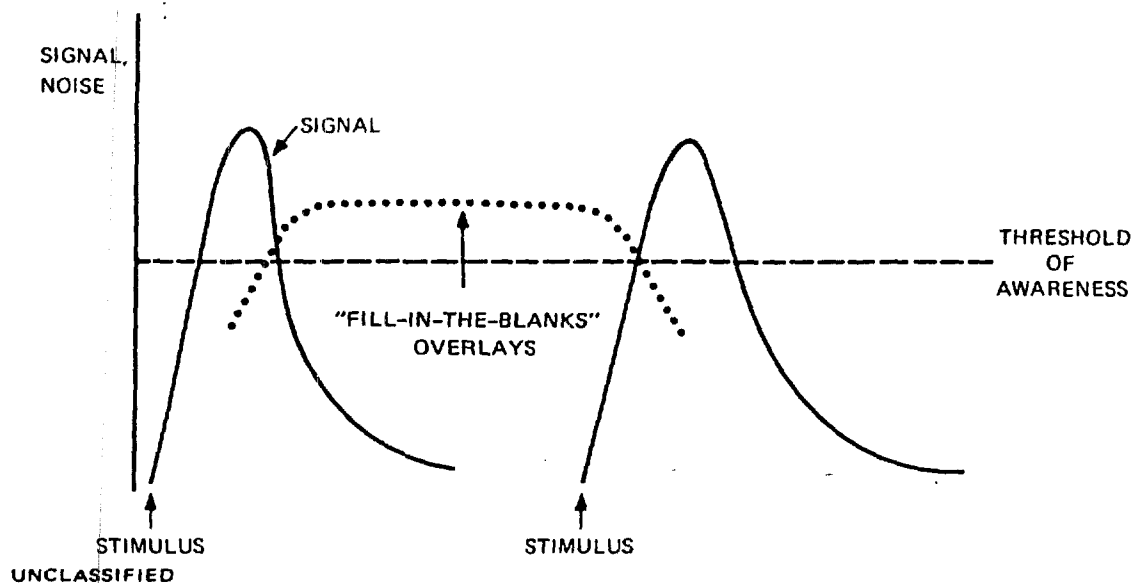
FIGURE 1   (U)   SCHEMATIC REPRESENTATION OF REMOTE VIEWER RESPONSE TO CRV SITUATION

2.   (U)   Stage I

(U)   In Stage I, the viewer is trained to provide a quick-reaction response to the reading of the site coordinates by the monitor. The response takes the form of an immediate, primitive "squiggle" on the paper (called an ideogram), which captures an overall motion/feeling of the gestalt of

Table 1

(U) STAGES IN REMOTE VIEWING

Stage	Example
I Major gestalt	Land surrounded by water, an island
II Sensory contact	Cold sensation, wind-swept feeling
III Dimension, motion, mobility	Rising up, panoramic view, island outline
IV General qualitative analytical aspects	Scientific research, live organisms
V Specific analytical aspects (by interrogating signal line)	—
VI Three-dimensional contact, modeling	Layouts, details, further analytica contact
.	.
.	.
.	.

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B.   (U)   Training by Stages--An Overview

1.   (U)   Rationale

◀_____▶ The particular effort covered in this report
concerns training of a⌐   ⌐ viewer to completion on Stage IV (S-IV).
To place the S-IV training effort in perspective, we summarize briefly
how it develops out of the earlier stages.

(U) The key to the earlier stages is the recognition that the
major problem with naive attempts to remote view is that the attempt to
visualize a remote site tends to stimulate memory and imagination--usual
in visual-image forms. As the viewer becomes aware of the first few dat
bits, there appears to be a largely spontaneous and undisciplined ratior
effort to extrapolate and "fill in the blanks." This is presumably dri\
by a need to resolve the ambiguity associated with the fragmentary natui
of the emerging perception. The result is a premature internal analysi:
and interpretation on the part of the remote viewer. (For example, an

4

II INTRODUCTION (U)

A. (U) General

At the beginning of FY 1981, SRI International made
a decision to develop and codify a promising RV enhancement procedure that
had emerged from earlier work--a multistage coordinate remote-viewing
training procedure developed in conjunction with an SRI consultant. The
procedure focuses on developing the reliability of remote viewing by con-
trolling those factors that tend to introduce noise into the RV product.
A broad overview of the procedure, which has been derived empirically on
the basis of a decade of investigation into the RV process, is presented
in Chapter III. The basic components of this procedure consist of

- Repeated target-address (coordinate) presentation,
  with quick-reaction response by the remote viewer
  (to minimize imaginative overlays).

- The use of a specially-designed, acoustic-tiled,
  featureless, homogeneously-colored viewing chamber
  (to minimize environmental overlays).

- The adoption of a strictly-prescribed, limited
  interviewer patter (to minimize interviewer overlay).

(U) At this stage of the development (Stage V is still in R&D; addi-
tional stages are projected), the RV training procedure is structured to
proceed through a series of stages of proficiency, hypothesized to cor-
respond to stages of increased contact with the target site. The stages
are outlined in Table 1. In a given remote viewing session, an experienced
remote viewer tends to recapitulate the stages in order.*

---

*(U) Use of Stage V in the sequence is optional, depending on the level
of analytical detail required.

I OBJECTIVE (U)

_____ , SRI International is tasked with developing remote viewing (RV)* enhancement techniques ▬▬▬▬▬▬ . Of particular interest is the development of procedures that have potential ₊application₅ and that can be transmitted to others in a structured fashion (i.e., "training" procedures).

_____ Under particular study in this effort is whether a Coordinate Remote Viewing (CRV) technology, a technique that utilizes coordinates to facilitate acquisition of a remote-viewing target, can be successfully transferred ▮ .

---

*(U) RV is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding.

July 1984

Final Report
Covering the Period 1 February 1983 to 30 April 1984

SPECIAL ORIENTATION TECHNIQUES: S-IV (U)

SRI Project 5590

Copy No. 6

This document consists of 30 pages.

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IV TRAINING EVALUATION AND RECOMMENDATIONS (U)

A.   (U) Overview

{   SRI International has had under development for
some time an empirically-derived training package developed in conjunc-
tion with SRI Consultant   . Its purpose is {
                                ,the development of procedures that have {
application potential, and that can be transmitted to others.

{   In the calendar year 1984, four {
personnel were selected {   } as trainees in the S-I through
S-III portion of the training package described in the above paragraph.
With I. Swann as the training monitor, the trainees received orientation,
then carried out an average of 145 practice RV sessions each. Altogether,
a 23-week effort was expended in the delivery of the S-I through S-III
training package. This is close to the original estimate of approxi-
mately 24 weeks, even though the distribution of weeks among the various
stages differed from what we anticipated.

{   Each of the four trainees responded to the training
in accordance with their individual differences, but all exhibited an
apparently high intelligence, a quick grasp of the fundamentals of the
training, a seriousness of purpose, and a diligence in pursuing the
repetitive training the tasks required. In response to the training,
which takes into account the individualities of each trainee, each of
the four generally performed along the lines of expectation derived
from experience with previous training development groups, and all
showed an aptitude for continued development.

B.   (U) Recommendations for Follow-On Actions

(U) Given the quality of response to the S-I through S-III
training, two recommendations for follow-on actions are offered:

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Table 3

(U) TRAINING SITES FOR PROFICIENCY IN
STAGE II PROCEDURES

RVer	Number of Training Sites
#344	18
#146	19
#765	21
#596	38
Total	96

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c.   (U) Stage III

Stage III training has been brought to
a completion in the month of December, after five weeks effort. The
decrease in time required (below that originally estimated) was due, in
part, to the introduction of a new procedure in the use of sketching,
which resulted in considerable shortening of the overall protocol
(detached analytical sketching following generation of signal-line data).
The numbers of training sites utilized by the trainees in S-III training
are shown in Table 4.

4.   (U) S-III Proficiency Level

Some indication of the level of proficiency
reached in S-III training can be seen in selected samples of RVer
response in the training format. In Figure 3, the RVer's results are
summarized in the form of a sketch, which can be compared with the
accompanying photograph of the target site. Similar results are shown
in Figures 4 through 6. Shown in Figure 7 are the responses of two
RVers to a surprise technological site. The final product of S-III
training is the routine generation of results of this caliber.

Table 2

(U) TRAINING SITES FOR PROFICIENCY IN
STAGE I PROCEDURES

RVer	Number of Training Sites
#344	69
#146	75
#765	87
#596	99
Total	330

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(U) With regard to the above statistics, it would seem natural to interpret the differences as an indication of increased difficulty with the present trainee group as compared with earlier groups, or with certain individuals in the group relative to the others. This interpretation should be discouraged. The difference in the amount of sites during any given period only reflects that a greater "noisy" period was encountered at this particular point before consolidation of the emerging aptitude--a period that emerges in every trainee at some point. Experience has shown that the number of sites required during any particular training sequence does not appear to be an important factor in the long run.

b. (U) <u>Stage II</u>

All four trainees completed Stage II in mid-October, after five weeks of training, which is within the expected parameters. The numbers of training sites required for each trainee to achieve proficiency on Stage II are shown in Table 3.

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2. (U) Baseline Data

In accordance with standard practice in SRI training programs:

- The four [ ] RV trainees were assigned random three-digit code designators (Numbers 146, 344, 596, and 765) by which all report data would be coded.

- Psychological profile tests were administered to provide data for a separate Selection/Screening Task.

- As a measure of baseline response to coordinate-designated target sites, each trainee generated, under double-blind testing conditions, a descriptor-list response to six sites, using latitude and longitude in degrees, minutes and seconds. These data were then archived to be available for later comparative evaluation. (See Appendix for Descriptor List format.)

3. (U) Stage-by-Stage Training Rates

a. (U) Stage I

The point of completion of each of the training stages for each of the trainees is determined by the training monitor. The monitor tracks the progress of the trainees in accordance with certain evaluation procedures that indicate to him that the trainee has grasped the fundamentals of the stage in question. All four selected trainees who embarked on S-I training at the beginning of the year completed S-I around mid-July--after approximately 13 weeks of training. The numbers of training sites required for each trainee to achieve proficiency in Stage I procedures are shown in Table 2.

The total number of training sites used was somewhat in excess of what was anticipated. The average of approximately 83 sites per trainee was compared with that of two earlier trainee groups: a prototype development group of four (average of 54 sites per trainee), and a previous, [ ] selected group of two (also average of 54 sites per trainee). We also see a wide variation in the number of sites per trainee to complete Stage I.

3. (U) Session Protocol (Training)

(U) At the beginning of the session, the monitor and the RVer enter the RV session chamber. The monitor has in his possession targeting information in the form of a folder of feedback materials; coordinates are notated on the outside. The monitor reads the coordinates as a prompter (stimulus) for the RVer, takes notes for later discussion, and so forth. Unlike the protocols used in the documentation studies (see, for example, reference referred to in Introduction Section), the monitor here is not blind as to the target. Thus, the training sessions are not carried out in a double-blind protocol. As part of the beginning gradient of orienting the trainee to the RV structure, the training monitor has the option of providing intrasession feedback as the session progresses. The environment of the training sessions, not being cue-free, therefore constitutes a separate category of activity as compared with double-blind testing conditions required for documentation of proof-of-principle.

B. (U) Trainee Progress

1. (U) Task Scheduling

Beginning in January 1984, four ' RV trainees were assigned to S-I through S-III training. A training schedule for the year was set up in accordance with the following time estimates derived from earlier development work:

Stage I	4 to 7 weeks
Stage II	2 to 6 weeks
Stage III	12 to 16 weeks
Total	Approximately 24 weeks

The training effort was generally broken up into 2-week sessions each, with 2-to-4-week breaks between sessions. Training was carried out at both the SRI/New York and the SRI/Menlo Park facilities on a site schedule that was mutually agreed UPON.

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II   INTRODUCTION   (U)

A.   (U) General

       At the beginning of FY 1981, SRI International
made a decision to develop and codify a promising RV enhancement proc-
edure that had emerged from earlier work--a multistage coordinate
remote-viewing training procedure developed in conjunction with an SRI
consultant,   . In this procedure, coordinates (latitude and
longitude in degrees, minutes, and seconds) are utilized as the targeting
method. The method is structured to proceed through a series of well-
defined stages in a particular order--hypothesized to correspond to
stages of increased contact with the target site (see Table 1). The
basic hypotheses of the procedure have been investigated under strict
double-blind testing conditions to document whether, and to what degree,
the training approach can provide a viable vehicle for RV technology
transfer.

       For this effort, we selected four individuals
to be trained in the techniques of the first three stages (S-I through
S-III) of the procedure as it stands to date (six in all have been
developed).

B.   (U)   Description of Procedure

   1.   (U)   Overview

     (U)   We begin with the basic premise of the training procedure
under study: the major problem with naive attempts to remote view is
that the attempt to visualize a remote site tends to stimulate memory and
imagination--usually in visual-image forms. As the RVer becomes aware of

(U)

I OBJECTIVE (U)

SRI International is tasked with developing remote viewing (RV)* enhancement techniques (_____) Of particular interest is the development of procedures that have potential (_____) application, and that can be transmitted to others in a structured fashion (i.e., "training" procedures).

(_____) Under particular study in this effort is whether a Coordinate Remote Viewing (CRV) technology, a technique that utilizes coordinates to facilitate acquisition of a remote-viewing target, can be successfully transferred (_____).

---

*(U) RV is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding.

1

Final Report
Covering the Period 15 November 1983 to 15 December 1984

December 1984

SPECIAL ORIENTATION TECHNIQUES:

S-I, S-II, S-III (U)

SRI Project 6600

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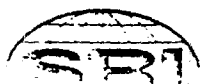
██████████ The emergence of ERA6 as a potentially psi–positive reference group is an especially encouraging event. Of all the groups we have had reason to mention, this one is normatively the most common, by far, and is especially common in ██████████rgani- zations, in which ERA6 individuals function well and comfortably as the middlemen in a chain of command. They are more loyal to individuals than to abstract ideas and are capable of insulating themselves from philosophical and ethical questions. In terms of psi, therefore, they appear to be willing, able, and relatively likely to stick with it. A problem for selection, however, is that ERA6 ranges over several MBTI types, reducing the potential efficiency of first–stage screening. The meaning of ERA6 is given by the following narrative description:

> ERA6: Role–Player––These persons are proactive problem–solvers who are naturally both involving (A) and involved (E). As an adult, ERA6 persons have presumably found a socially functional role that requires them to be active and apparently relating but depends upon a minimum of true involvement. In effect, ERA6 persons spend life "proving" that they cannot be tempted. The tension that this implies is relatively repressable because of the R, but somatic symptoms may develop over time. Members of this group are relatively common and have included actors, dancers, musicians, waiters, salesmen, policemen, teachers, and managers.

(U) On balance, our efforts to cross–validate the important PAS patterns have yielded only partial results. There is nothing strongly inconsistent with expectations, but the results are not statistically conclusive primarily because of the low proportion of psi–talent estimated to exist in unselected populations. Future efforts to achieve cross–validation should be planned so that approximately 50 percent of the experimental trainees are expected to show strong learning curves. This will require excluding about 80 percent of an unscreened population.

C.   (U)   **Preliminary Identification of Promising PSI–Q2 Patterns**

(U)   We report the initial exploratory results of psi in relation to self–report personality measures.

(U)   The first level of RV analysis on the PSI–Q2 data involves a simple one–in–six "guessing" task. Viewers were asked to pick which of six target categories best matched their response. No significant evidence of psychoenergetic functioning was found. However, a "forced choice" task is shown throughout the literature as an ineffective way of eliciting good

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(U)

have three of the eight cases falling into "known" psi–positive categories. Two of these (063 and 372) are ERA6, now grouped with ERU6; the same two already have the strongest track records represented in Table 4. The third one (016) is ERA8, now grouped with ERU8; he is still a trainee, but is seen as "making the fastest progress" of anyone in his training group.

, Without identifying any new categories, it is possible to relate six of the eight viewers to the previous data. Viewers 101 and 035, who are unambiguously Primitive F, are left over after this process. We have seen very few F personalities in the whole course of this project, and would be ready to write it off but for Viewer 414 shown in Table 1. Several of the viewers have spontaneously suggested that the PAS task that defines this primitive dimension (the WAIS Block Designs) seemed to them especially relevant. Theoretically, we see this dimension as defining an individual's signal–to–noise requirements: R persons work with a relatively high threshold, and can count on the "reality" of percep-tions that pass through their filter. The problem for them is to make up for what does not pass. F persons operate with a lower threshold requirement and can count on not missing much that's real, but they also perceive a lot of noise as though it too were real. Thus, an R person is typically better motivated than an F person to learn how to perceive more with higher accuracy regardless of the use of psi abilities.

(U) Only two of the individuals in Table 4 (035 and 018) display the trend within the time estimation task thought to be a hall–mark of psychic performance. In view of the much larger effect previously observed in IRU2 as compared with ERU8, the present observation may mean nothing at all. On the other hand, it may relate to the need/use of technical aids to initiate psi conducive attitudes, particularly for Level 6 viewers. More than any other groups, Level 6 individuals are accustomed to making time work for them, and their time estimates tend to be among the most accurate.

(U) The self–report data in Table 4 illustrate the point that the PAS versus MBTI correlation is complex. Two INTJ persons have very different PAS patterns; likewise, so do two INFP persons. It is difficult to imagine that these eight viewers have, in fact, been selected partly on the MBTI; the only clear trend in the data is toward intuition, but intuition is common at high normal levels regardless of WAIS patterning. A self–report analysis employing a finer breakdown, perhaps along the lines of PSI–Q2 (see below), seems likely to be necessary if the goal of mass screening is to be attained. MBTI Form J, the form used thus far, contains enough items to support such a finer breakdown.

(U)

already identified. Either we may regard these training data as a fluke, or we may regard them as suggesting that IRU7 is a fifth group for which to watch. The latter possibility is somewhat reinforced by the presence of another IRU7 in Table 1.

__) Perhaps the most important observation to make about the results of the group (Table 4) is that they represent the results of a selection process very different from the "process" implicit in Table 1. We need be neither surprised nor discomfited by the apparent absence of any IRU2, ERU8, ERU6, or IFU3 cases. For one thing, except for ERU6, we suspect that good examples of these groups simply were not available in the pool from which the selection began. (Part of this may be because IRU2 and ERU8 personalities, on average, might have difficulty (_____) Also, we observed earlier that our known IRU2 viewers initially made themselves known, and our known ERU8 viewers responded to calls for volunteers explicitly for psychoenergetic research. By contrast, the viewers in Table 4 were much more deliberately recruited; they are all "volunteers" in the sense of "informed consent," but the request for this consent was only the final step in a multistage process of testing and interviewing.

(U) We regard the confirmatory signs in Table 4 as encouraging. For example, although we find no actual IRU2, we note that our IRU2 training monitor regards his IRU4 student as "having the most long–term potential" despite his also being the "most difficult to work with." Apart from the irony in this, IRU4 is theoretically just an IRU2 with a successful PAS contact pattern built on the surface. As another example, although we find no single unmistakable ERU8, we see four of these eight cases falling within three standard deviations of the ERU8 centroid according to ERU8 norms.

(U) Although we have yet to see a bona fide star viewer in the IRU7 reference group, Table 4 provides at least one (018) and possibly a second (043, a borderline IRU7) example with affirmative precalibration, reinforcing the context already developed earlier (??? and 249).

(U) Reasonable arguments can be made that self–generated interest in psi flows from Primitive U (17 of 19 cases in Table 1 are Primitive U) and that selection by interview will tend to favor Primitive A (five of eight cases in Table 4 are Primitive A). On the other hand, it is not obvious that A–U differences should affect psi performance. (We think it is obvious that E–I and R–F differences should affect psi performance.) If we set aside the A–U differences on grounds they may be artifactual and then reexamine Table 4, we now

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currently unevaluated. These measures are very subjective; for example, the difference between "**" and "*" is somewhat arbitrary.

Table 4

RESULTS OF THE RV TRAINEES

Viewer	PAS	MBTI	RV Ability Estimate
372	ERA6	INTJ	**
063	ERA6	INFP	*
016	ERA8	ENTP	+
099	IRU4	INTJ	+
043	IFA5	INFP	+
018	IRU7	XNXP	+
035	IFU5	INTP	?
101	IFA6	ESTJ	?

Note: The RV Ability Estimate is qualitative.

(U) When we compare all 15 of the training subjects with all four of the potentially interesting reference groups identified above, there is only one trainee who can be properly regarded as a member of any currently interesting group—Viewer 807. Because of this, much depends on how we perceive the training results for Viewer 807. Actually, among the seven trainees with quantitative data, Viewer 807 ranks as best on three of the six RV measures and ranks as second-best on two more of them (only two measures are shown in Table 3. Puthoff and May[8] and Humphrey[9] contain complete details.) The significant positive slope for Viewer 807's Figure-of-Merit is what we might expect from an ERU8 personality. We have stated earlier that ERU8 personality should expect to experience at least initial difficulty with overcoming AOL.

(U) The only other trainee in Table 3 with consistently positive RV measures is Viewer 249. There is simply no way to regard this person as a member of any of the four groups

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(U)

10 percent of the population. We must expect that most of the trainees in an unscreened sample will have little psi aptitude.

(U) The results of the SRI training efforts and the personality measures are shown in Table 3. Two measures of RV performance are shown. The RV–Figure–of–Merit column displays an overall level of RV ability. (Because different target sets were used for the two training efforts, the Figures of Merit are valid as relative measures within a training group only.) The RV–Learning column displays a statistical assessment (student's t–test) of the slope of a line drawn through the session–by–session Figure of Merit data. Although there are other possible RV measures that could be considered, these two represent the current state of the art.

Table 3

(U) RESULTS OF SRI RV TRAINEES

Viewer	PAS	MBTI	RV Learning	RV Figure of Merit
807*	ERU8	ISFJ	2.06	0.227
249	IRU7	ISTJ	1.43	0.239
997	IFA1	ESFP	0.70	0.194
454	IFU4	ENFP	0.52	0.199
309 †	IRA5	INXP	1.72	0.353
558	IFA8	XNFX	1.40	0.372
694	ERA2	IXXP	0.91	0.387

*   Track II   SRI training group.

†   Track I   SRI training group.

Note: The figure of merits are only valid within a training group.

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(∪)

[_____] Table 4 shows the results for the [   ] trainees. The RV–Ability–Estimate column represents the best qualitative assessment RV abilities of the trainees. A "***" represents a "star viewer", while a "*" represents an extremely good viewer. "+" represents "good" or "OK" viewers and "?" represents viewers who are

(U)

have not yet seen enough exemplars to warrant specific discussion. Certainly, it is important to continue the process of gathering PAS data from known viewers in the expectation that further exemplars will be recognized. The meaning of ERU6 and IFU3 are given by the following narrative descriptions:

> **ERU6: Manager**—Proactive problem solvers who are forthright in their dedication to constituted authority and decisively rational in their views, but who tend to be overcommitted to their work and tend to overcontrol their own feelings and emotions. They are extremely competitive and ambitious and seek to inspire and involve others through example. Their social behavior often demonstrates a concern to show that they cannot be manipulated by others. They are better at creating procedures than policies, but nevertheless see themselves as intellectually creative and expect to be appropriately rewarded for these efforts on behalf of their organization. Members of this group are found in the middle echelons of any major organization, such as a bank, business, hospital, or government agency.

> **IFU3: Votary**—Polyactive problem–solvers who are prone to be autistically self–centered, who recognize and feel guilt about this, and who combat the implied threat by immersing themselves in a multitude of worthy activities. As children they were permitted to pursue their considerable intellectual curiosity, without the imposition of either mental discipline or social conformity. As an adult, they remain intellectual and creative, and attach much importance to their own and others' right to be "different." They have a strong conscience and are likely to be politically "liberal" and to have well–developed aesthetic judgment. Their vocational interests are likely to be in the humanities and social science, rather than in mathematics or physical science. They may function well as teachers, administrators, consultants, or team–members.

B. (U) Training Results

(As reported earlier, two training groups at SRI served as the confirmation cases. The PAS, including its Fourth Dimension, and Form J of the MBTI were administered to each of the trainees. None of the results of the PAS testing were available to either the trainees or the trainers before the tabulation of the results.

(U) The bunching of the precalibrated viewers in PAS–space, shown in Table 1, suggests that outstanding psi ability is not a widespread trait. ERU8 and IRU2 together may represent as much as 2 percent of the general population and, allowing for a few other PAS patterns still to emerge, our ultimate interest is estimated to be limited to no more than 5 to

I   OBJECTIVE

The objective of this program is to investigate the phenomenon of remote viewing (RV)

The type of counter-measures and factors that inhibit RV will be investigated.   The work effort will involve gathering data on specific geographic areas throughout the world and examining research pertinent to improving the reliability of the data obtained via the RV process.

1

II INTRODUCTION AND SUMMARY

The purpose of this program is to provide a data base ~~for assessing~~ the area of remote viewing (RV). RV is the acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding, and generally believed to be secure against such access. This includes the ability of subjects to view remote geographical locations, even at intercontinental distances, given only geographical coordinates or a known person on whom to target.

Investigations into the RV phenomenon at SRI International over the past eight years have ranged from basic research with regard to proof or the lack thereof as to the existence of the phenomenon, to applications where existence of the phenomenon is taken as a given. The present study, with its emphasis on application potential, leans toward the latter--extensive proof of the phenomenon is not pursued here. A measure of proof is provided, however, by the quality of results obtained in   tests carried out under double-blind conditions.

In this report we present the results of a several-month reliability study. The purpose of this study was to delineate those factors which appear to affect the reliability of the RV phenomenon, to develop a methodology to minimize the deleterious effects of such factors, to test that methodology in a training procedure involving several RVers, and to evaluate the effects of such training on the basis of success in applications.

The factors affecting reliability, and the training methodology designed to improve reliability are presented in Section III. In Section III we also discuss the apparent impact on the training program on

2

III   PROGRESS DURING THE REPORTING PERIOD

The primary objective of this program is to provide a basis for
evaluating the RV capability.

Of particular interest with regard to application is the use of an
abstract targeting procedure known as coordinate remote viewing (CRV),
a procedure we have had under investigation at SRI since 1972. In this
procedure the target site coordinates (latitude and longitude in e.g.,
degrees, minutes, and seconds) are relayed with no further information
to the individual who is to view the site. The remote viewer is asked
simply to proceed on the basis of the coordinates alone.

Admittedly, such an abstract targeting procedure seems without basis,
at least with regard to the present scientific paradigm. As a result we
can make no claim for the technique other than the purely pragmatic one
that it appears to work. It can only be pointed out that in psychoenergetics
research in general, the possibility of success in such a protocol is in
accord with an observed "goal-oriented" nature of the laws that appear to
govern psychoenergetic functioning.*

In this section we discuss the findings of an investigation into CRV
reliability, the factors that affect it, the development of procedures to
improve it, and the results of application challenges to test it.

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*
 An investigation into the general problem of target acquisition has been
 carried out an reported. See R. Targ, H. E. Puthoff, B. S. Humphrey,
 and C. T. Tart, "Investigations of Target Acquisition," Research in
 Parapsychology 1979, Scarecrow Press, Inc., Metuchen, NJ, 1980.

applications. The results of the study to date indicate that substantial

progress has been made. Finally, in Section IV we outline the potential

for a broad-based integration of RV phenomena

A. <u>Advances in Development of CRV Potentials</u>

   1. <u>Background</u>

        Since the introduction of coordinate remote viewing (CRV) several years ago, it has been apparent that CRV is often capable of yielding highly accurate and useful data.

        There are, however, several instances of failures, in which the CRV description did not correspond to ground truth reality. Since one of the program tasks is to "continue the investigations of methods to improve the phenomena," a special study program was set up to attempt to determine the factors that affect CRV reliability, and, to the degree possible, to develop procedures to minimize the deleterious effects of such factors.

        It was recognized at the outset that there were two facets of the reliability problem that were of interest and would therefore have to be addressed:

   (1) <u>Vertical Potential</u>. Given that an individual exhibits a demonstrable CRV ability, is it possible to develop that ability beyond a neophyte status, that is, increase the signal-to-noise ratio?

   (2) <u>Horizontal Potential</u>. Does the CRV process possess a structure sufficiently definable to imply a meaningful construct for transfer/trainability across a broad base of individuals, potentially providing increased reliability on the basis of cross correlation of multiple CRV responses?

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Results of the study program to date, described below, indicate progress in both areas.

2.   Signal/Noise Characteristics

The anatomy of the CRV phenomenon has been under intense scrutiny at SRI in an effort spearheaded by remote viewer #002. These explorations have centered about two areas:

(1)   Observing and understanding the characteristics
       of the noise.

(2)   Observing and categorizing the characteristics
       of the signals.

With regard to the noise aspect of the CRV channel, the process of mapping out its characteristics has consumed a large part of a two-year effort to isolate the factors involved. Four major categories of noise have been delineated in this process. They are:

(1)   Analytical Overlay. As the remote viewer becomes
       aware of the first few data bits, there appears to
       be a largely sponteneous and undisciplined rational
       effort to extrapolate and "fill in the blanks."
       This is presumably driven by a need to resolve the
       ambiguity associated with the fragmentary nature of
       the emerging perception. The result is premature
       internal analysis and interpretation on the part
       of the remote viewer. Example: An impression of
       an island is immediately interpreted as Hawaii. To
       circumvent this, a procedure for disciplined
       rejection of premature interpretations and conclusions
       is called for.

(2)   Associational Overlay. In addition to provoking
       premature interpretation, the incoming data bits
       appear to stimulate pre-existing mental formations
       that are associationally related to the target
       material. Example: An impression of a round object
       triggers an image of a favorite childhood ball. The
       triggering of such associational overlays leads to
       imaginative images that divert or embellish the picture

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being built up from the incoming data bits. To overcome the effects of this type of overlay, training to recognize and discriminate against associational images is required.

(3) Monitor Overlay. This is comprised of noise intruding into the remote viewer's awareness inadvertently as a result of undisciplined talk or actions on the part of the session monitor. Examples cover a broad spectrum, ranging from, e.g., stimulation of sailboat images by a casual pre-session discussion on sailing, to the subtle reinforcement (e.g., by body language) of certain responses that match the monitor's biases and preconceptions as to the nature of target; in short, any action on the part of the monitor that degrades the remote viewer's attentiveness to the task at hand. To bring this under control, a standardized monitor behavior must be introduced in which, for example, the monitor is restricted to the use of certain standard phrases during his monitoring of a CRV session.

(4) Environmental Overlay. This type of overlay has its source in the physical surroundings of the CRV session. Specifically, conditions of the session chamber (e.g., obtrusive shapes, sounds, visual highlights) are found to insinuate themselves into the CRV response. A mundane example: an after-image produced by a strong vertical line in the session chamber can lead to a predominant vertical line in the "target" image. More esoteric examples involve peripheral and subliminal perception of environmental features, since, as is known from the study of subliminal perception, information not processed at a conscious level can nonetheless infiltrate perceptual and thought processes. Environmental overlay can be minimized by judicious control of environmental factors, such as by providing a quiet, dimly lit, relatively homogeneous monochrome visual field absent of strong features and peripheral clutter.

Although the latter overlays can be dealt with by controlling elements in the environment of the remote viewer, the analytical and

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associational "fill-in-the-blanks" overlays stem directly from cognitive processes within the remote viewer. Our investigation of these overlay patterns leads to a model of RV functioning shown schematically in Figure 1. With the application of the "stimulus" (e.g., the reading of a coordinate) there appears to be a momentary burst of "signal" that enters into awareness for a few seconds, and then fades away. The overlays appear to be triggered at this point to fill in the void. Success in handling these complex processes apparently requires that a remote viewer learn to "grab" incoming data bits while simultaneously attempting to control the overlays. A strict and disciplined methodology to perform this delicate and difficult task, involving repeated coordinate presentation and quick-reaction response, has been developed and is presently being confirmed with four remote viewers; #002 who was primarily responsible for developing the basic concept, and Nos. 009, 131, and 504 who are in the role of trainees with regard to this particular methodology. The procedure designed to minimize overlays coupled with use of a specifically designed acoustic-tiled featureless room with homogeneous coloring to minimize environmental overlay, and adoption of a uniform, limited monitor behavior role to minimize monitor overlay, constitute the basic methodology for noise reduction in our newly-developed approach to CRV.

    With regard to mapping the signal characteristics of the CRV channel, a progressive multistage target acquisition process appears to be emerging. The stages outlined in Table 1 appear to track an increasing contact with the target site that takes place during the CRV process. An example of these stages of elaboration in a completely successful remote viewing would be the series:

    (1) Recognition and decoding of   Land surrounded by water,
          major gestalts   an island

    (2) Achieving sensory contact   Humid sensation, tropical
          with target   feeling

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(3)	Experiencing motion and mobility within target	Rising up, a panoramic view
(4)	Recognition and decoding of minor signals while sustaining major gestalts	Mountains on the island, a small port city on the water's edge
(5)	Decoding special characteristics of target	Large areas devoted to agriculture
(6)	Analytical recognition and decoding of significant aspects of the target	Some tourism, agriculture devoted primarily to sugar cane, main island in Fiji islands

Table 1

CRV STAGES OF TARGET ACQUISITION

1.	Recognition and decoding of gestalts
2.	Achieving sensory contact with target
3.	Experiencing motion and mobility within target
4.	Recognition and decoding of minor signals while sustaining major gestalts
5.	Decoding special characteristics of target
6.	Analytical recognition and decoding of significant aspects of the target

Knowledge of the above multistage process of target acquisition appears also to provide a filtering function, in that apparent data that does not emerge somewhat in this order tends to be overlay (e.g., immediate recognized image of the St. Louis Arch [Stage 6] as first response to coordinate presentation).

For the training procedure, in which feedback plays an essential role, a pool of several hundred target locations was prepared using

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material from a large library of National Geographic magazines. The coordinates for the chosen sites were obtained from the Second Edition (Revised) of the Times Atlas of the World--Comprehensive Edition, Houghton Miflin Co., Boston (1971).

In a typical training session, a half dozen targets are chosen at random for use. In the early stages of the process the monitor makes himself aware of the target material he is using so that he can provide running feedback during the session. (We call this a Class C target protocol.) During this phase the monitor is allowed only a few stock phrases ("correct," "near the target," etc.) so as to minimize cueing and leading. Once some degree of apparent competence has been reached, the monitor is given targets to which he is blind (a Class B target protocol) so as to eliminate confounding of the results by potential cueing. In this case feedback information is accessed by both monitor and remote viewer only at termination of the CRV session. A training series with a given remote viewer generally consists of roughly a hundred of these trials spread out over a two-month period. The output of a sample successful trial is shown in Figure 2.

In detail, the training procedure is as follows:

(1)   The remote viewer and monitor seat themselves at opposite ends of a table, the former with a supply of paper and a pen, the latter with target folders (contents initially unknown) and reference atlases.

(2)   The remote viewer is instructed that the monitor will begin the CRV process by selecting a folder and reading aloud target coordinates printed on the outside. The remote viewer is to note down on paper any immediate impressions (which he may also express aloud*) and then, rather than embellishing on his first impressions, to ask for the coordinates to be read aloud again so that the original process may be repeated, etc., until a coherent picture of the site emerges.

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*The session is tape recorded.

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(3) Following these instructions, the monitor selects a folder and begins the process described above.

(4) After one or more repetitions of the coordinates (each followed by a CRV response) leads to recognizable target characteristics, the folder is accessed by the monitor, and the atlas consulted (if necessary) in order to give feedback. In the Class B protocol this is the termination of the session. In the Class C protocol a line is drawn on the remote viewer's data sheet to separate the data thus generated from further data, since up to this point the data were generated in a double-blind protocol and can be objectively evaluated later as a test of target acquisition.

(5) In the Class C protocol, having terminated the target acquisition "test" phase, feedback can now be given and/or further data solicited. The feedback given at this point is non-negative, ranging from "correct," through "near the target," to "you are at another target" (giving the remote viewer the benefit of the doubt). The monitor then has the option of terminating the viewing, asking for more detail ("there's something ten miles to the north that should be visible") or restarting the process when the viewer's original description did not correspond to the target site. (In the latter case the monitor can, of course, guide or cue the remote viewer into a correct response. This is acceptable in the non-test part of the sequence, however, and provides an opportunity to investigate whether such cueing procedures can be useful in operationally oriented applications in which one guides the remote viewer onto the target site with cues "a," "b," ... "f," and then asks for detail in a nearby region, or concerning an unknown, "g.")

To give an example, we present here a summary of results obtained with a remote viewer who was a relative neophyte with regard to CRV. He was exposed to this protocol, a few targets per session, over a several-day period, resulting in a data pool of 26 CRV target viewings. They were: Salt Lake Desert, Utah; Lake Erie; Chicago; Mono Lake; Aruba Island; Lake Okeechobee; Yount's Peak, Wyoming; Pitcairn Island; Pike's Peak;

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Los Angeles; Atlantic Ocean; Rio de Janeiro; Kansas plains; St. Peter and Paul Islands; Randall Dam, South Dakota; Lake Titicaca; Cape May; Niagara Falls; Munich; Amazon River; Midwestern plains; Venezuelan Peninsula; Sierra Blanca Mountain; Oregon Desert; Panama Canal; Puerto Rico.

Following the first pilot session of five, in which essentially immediate feedback was given (Class C protocol), the remaining twenty-one were carried out with delayed feedback (Class B protocol) and thus provided material that could be assessed objectively. As a first cut the targets can be categorized roughly into five groups (mountains, flats, water, cities, islands/peninsulas). The target/response matrix obtained in the series is as shown in Table 2. The probability of such an alignment

Table 2

DISTRIBUTION OF CRV TARGET/RESPONSE MATCHINGS

Targets	Transcripts				
	Mountains	Flats	Water	Cities	Islands/Peninsulas
Mountains	3	0	0	0	0
Flats	0	1	1	1	0
Water	0	0	6	0	0
Cities	0	0	0	2	1
Islands/Peninsulas	1	0	0	0	5

occurring by chance alone can be calculated by a direct-count-of-permutations method (see Appendix), and leads to $p = 1/5! = 0.0083$. The distribution of responses is therefore statistically significant. Furthermore, beyond simple statistics, certain individual responses were exceptionally accurate during the acquisition "test" phase. In the final trial

in this series, for example, when the target coordinates were for Guayama in Puerto Rico, the viewer described a "fishing village on the southeast coast of a boat-shaped island," which is an entirely correct description of the locale at the target coordinates. He then drew an island, resembling Puerto Rico in both shape and orientation.

A secondary application of the target pool/training mode procedure is as an auxiliary calibration tool\ ▬▬▬▬▬ . Immediately prior, during, or after a\ ▬▬▬▬▬ task (which we designate Class A protocols), a National Geographic CRV can be used to determine whether a remote viewer is "on."

This procedure was used immediately following the third and final scan of one of the operational CRVs described in the next section of this report. Under Class B protocol (monitor blind to target, no feedback during session) coordinates for the Sault Ste. Marie Locks in the Soo Canal were given. The CRV response, shown in Figure 3, centered on a channel with islands in it, leading to a large lake, and traversed by a large white bridge, a result of high quality. Eventual feedback on the target of interest revealed matching quality.

B.   CRV Applications

In this program SRI is charged with investigating

RV in order to provide data

Specifically, SRI has been tasked▼ with examining a series of geographic coordinates using RV techniques with the goals of:

(1) Establishing the authenticity and reliability
of the RV phenomenon.

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(2) Developing and refining experimental techniques and understanding of the RV phenomenon.

(3) Establishing the best potential kinds of targets and best potential use of the RV phenomenon.

In response to these requirements SRI has pursued application tasks of interest ⁕   ⁕. These tasks (Class A protocols) have been pursued during the time frame in which the reliability-improvement program of the previous section has been in effect. Therefore, the quality of response to these tasks provides an indirect measure of the efficiency of the reliability-improvement procedures.

The CRV tasks described below were carried out in response to quick reaction requirements   nvolved in monitoring the progress of the work. During these scans all SRI personnel were kept blind to the target. The tasks and associated response data are outlined here in summary form. Complete documentation (transcripts, messages, evaluation, etc.) can be made available ⁕

1. ⁕ Site No. 1 ("Mound" Site)

- RV Session Dates: 22 June 1979 (Session 1);
  5 July 1979 (Session 2).

- Remote Viewer: #009

- Interviewer: ⁕ _____ (Session 1);
  H. Puthoff (Session 2).

Two scans were carried out on a⁕   ⁏site designated' ____⌐
⁕   (during a site visit) to be a target of interest. For
⁕ ⁎ the interviewer
Scan 1, Viewer #009 was closeted alone with ⁕_   _____ ⊢—no other
personnel were present. The target site was designated by coordinates only (latitude and longitude to seconds). ⁕

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. An evaluation was provided

SRI

A second scan was then carried out with the same viewer
on 5 July 1979, targeting not by coordinate, but on the basis of familiarity
with the site established in Scan 1. Details can be made available through
separate channels.

2. Site No. 2 (Ship Construction Site)

- RV Session Dates: 12 July 1979 (Session 1);
  17 July 1979 (Session 2).

- Remote Viewer: #009

- Interviewer: H. Puthoff

It was arranged in advance that an SRI remote viewer would
attempt to target on a site designated only on the basis of the following:
On the day of viewing a' 'representative, known to the viewer, would be
carrying an envelope, inside of which were coordinates of a target of
interest, location and function unknown even to him. This was to con-
stitute an exercise in abstract targeting

Two scans were carried out on this basis on different dates.
The viewer's response centered on the description of a building of specific
design, together with information on internal layout and activities,
certain quite unique elements of which have been verified as being correct.

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3.   Caribbean Site

- RV Session Dates: 14 December 1979 (Session 1);
  17 December 1979 (Session 2); 18 December 1979
  (Session 3); 21 December 1979 (Session 4); 28 December
  1979 (Session 5).

- Remote Viewers: #698 (Session 1); #002 (Sessions 2-4);
  #009 (Session 5).

- Interviewer: H. Puthoff

A total of five remote viewing sessions, involving three remote
viewers, was carried out on a Caribbean site designated
_____. Targeting was on the basis of coordinates
supplied to SRI

The analysis of this site has been completed. Each of the three
viewers individually supplied pertinent, relevant data with regard to the
target site, and their data taken together resulted in a target/transcript
correspondence rating of 7 (given by user) on a 0-7 point evaluation scale
shown in Table 3.

The results generated in these ⎨   ⎬ tasks to date, all
obtained with remote viewers incorporating the procedures developed in
the reliability-improvement program, appear to provide our first (and
encouraging) evidence with regard to a possible upgraded level of per-
formance. Further data needs to be generated, however, before a definitive
assessment can be provided, and this requirement will be pursued during the
remainder of the program.

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Table 3

0-7 POINT EVALUATION SCALE FOR TARGET/TRANSCRIPT CORRESPONDENCE

7 = Excellent correspondence, including good analytical detail (e.g., naming the site by name), and with essentially no incorrect information.

6 = Good correspondence with good analytical information (e.g., naming the function) and relatively little incorrect information.

5 = Good correspondence with unambiguous unique matchable elements, but some incorrect information.

4 = Good correspondence with several matchable elements intermixed with incorrect information.

3 = Mixture of correct and incorrect elements, but enough of the former to indicate viewer has made contact with the site.

2 = Some correct elements, but not sufficient to suggest results beyond chance expectation.

1 = Little correspondence.

0 = No correspondence.

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Appendix

STATISTICAL PROCEDURE FOR FIRST-CUT ANALYSIS
OF CRV RESULTS

A precise measure of the statistical significance of a matrix of target/transcript correspondences is given by a direct-count-of-permutations method of great generality.[*] It is an exact calculation method requiring no approximations such as normality assumptions. Furthermore, the judging process that went into generating the matrix is not required to be independent transcript-to-transcript nor target-to-target. The only requirement is that no artifactual information is provided as to the <u>order</u> of targets and transcripts. In particular, it can be shown that if targets are used with replacement or are nonorthogonal (the case here), then the method applies even in the case in which there is trial-by-trial feedback and the target pool is known a <u>priori</u> to both remote viewer and interviewer. Thus the possibility of interviewer cueing or subject guessing based on a <u>priori</u> knowledge of the target pool is handled at a fundamental level by a statistical procedure that assumes the worst. The argument is as follows.

In the absence of knowledge as to which transcript was generated in response to which target, one observes that in setting up the target-transcript matrix there are n! possible ways to label the columns (transcripts), given any particular order of the rows (targets), and vice versa. Thus, there are n! possible matrices that could be constructed from the

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[*] C. Scott, "On the Evaluation of Verbal Material in Parapsychology: A Discussion of Dr. Pratt's monograph," <u>Jour. Soc. Psych. Res.</u>, Vol. 46, No. 752, pp. 79-90 (June 1972).

Final Report
Covering the Period October 1983 to October 1984

May 1985

AN AUTOMATED RV EVALUATION PROCEDURE (U)

By:

SRI Project 7408-12

Copy 1 of 1

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This document consists of 28 pages.

SRI/GF-0275

II SUMMARY OF RESULTS (U)

We have modified a computer-automated remote viewing analysis procedure, first developed at Princeton University, to be more responsive to the needs of the community. Our procedure is based upon defining the information content in both a RV response and its associated target as the presence or absence of a series of items (called descriptors). Various mathematical comparisons can be made between responses and targets. By defining RV accuracy as the fractional part of the target information that was correctly perceived, and defining RV reliability as the fractional part of the response that was correct, we are able to construct an RV "figure of merit " as the product of the two. The RV figure of merit is a sensitive, target-pool-independent assessment of the quality of a single, remote-viewing response.

(U) We have developed a technique to assess an analysts' RV judging ability by using a standardized test case of a series of remote viewings. Judging consistancy in a training environment is the most important factor in assessment ability. Thus, it is a requirement that the same analyst assess the information content in both the response and the target. In a training environment, an analyst would first determine the information content in all of the targets in the target pool before assessing the information content in any RV response. All of the RV assessments are done without knowledge of the particular matching target.

We have suggested ways in which *a priori* probabilities, on a descriptor-by-descriptor basis, can be used as RV assessments in the absence of any knowledge of the site. This technique requires the building of track records for each item on a viewer-by-viewer basis. As the track records begin to stabilize, we will be able to integrate the analysis techniques described in this report.
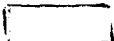
III BACKGROUND (U)

(U) Since publication of the results from the initial remote viewing effort at SRI International,[1]* two basic questions remained about the evaluation of RV data:

- What is the definition of the target site?
- What is the definition of the RV response?

For example, consider a typical IEEE–style, outbound–experimenter remote–viewing trial. After an experimenter travels to a randomly chosen location at a prearranged time, a remote viewer's (RVer) task is to describe that location. In trying to assess the quality of the RV descriptions (e.g., in a series of trials), an analyst must go to each of the sites and attempt to match responses to them. For example, while standing at a site, the analyst must decide not only the bounds of the site, but must also determine the site details that should be included in his/her analysis. While standing in the middle of the Golden Gate Bridge, should the analyst consider the buildings of downtown San Francisco, which are clearly and prominantly visible, as part of the Golden Gate Bridge target? Similarly, the RV response to the Golden Gate Bridge target might be 15 pages of dream–like free associations. A reasonable description of the bridge may be contained in the response; however, it might be obfiscated by a large amount of unrelated material. How should an analyst approach this problem?

(U) The first attempt at quantitatively defining an RV response involved reducing the raw transcript to a series of declarative statements called concepts.[2] Initially, it was determined that a coherent concept should not be reduced to its component parts. For example, a small red VW car should be considered as a single concept rather than four separate concepts: small, red, VW, and car. Once a transcript had been "conceptualized," that list of concepts constituted, by definition, the RV response. The analyst, then, rated the concept lists against the sites. Although this represented a major advance over previous methods, no attempt was made to define the target site.

[_____] During the FY'82 program, we developed a procedure to define both the target and the response material.[3] We learned that before a site could be quantified, a goal for the

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*(U) References are listed in the order of appearance at the end of this report.

overall remote viewing must be clearly defined. If the goal is simply to demonstrate the existence of the RV phenomena, then anything that is perceived at the site is important. But if the goal is to gain information, then specific items at the site are important, while others remain insignificant. For example, consider an office as a hypothetical target. Let us assume that a single computer in the office is of specific interest. Suppose an RVer gives an accurate description of the shape of the office, provides the serial number of the typewriter, and gives a complete description of the owner of the office. While this kind of a response might provide excellent evidence for remote viewing, the target of interest (the computer) is completely missed. What is needed is a specific technique to allow assessments that are mission oriented.

The procedure developed during FY'82 was a first attempt at solving the mission orientation problem. In this technique, the transcript is conceptualized as described above, and a similar process is applied to the sites. A target site is conceptualized as a set of target elements, which are to be considered "mission independent." In the office example above, target elements might be: desk, safe, window, telephone, computer, and chair. A second layer of conceptualization is then applied, which is "mission specific." Each target element is assigned a number between 1 and 5 corresponding to the mission's relevance. Again, in the office example, the computer would be assigned a relevance factor of 5 (most relevant), while all other target elements would be assigned a factor of 1 (least relevant). The target elements and their relevance factors constitute the site definition and mission orientation. The final report for the FY'82 task[3] described in detail how a mission specific assessment was made. Although the procedure proved to be quite sensitive, it was nonetheless cumbersome and difficult to apply.

This report describes a major advance over the FY'82 technique. The original idea, which involves computer–automated scoring of RV data, was developed at the Anomalies Laboratory of Princeton University.[4] We have significantly extended and modified the Princeton technique and have developed procedures that can be used in actual applications.

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IV METHOD OF APPROACH (U)

____) The overall method of approach was to begin with the Princeton group's known evaluation procedure, then determine what would be appropriate for our environment. The next step was to expand the analysis concept to be more responsive to requirements, and to integrate the entire procedure with our on-line data bases.

A.   (U) The Princeton Evaluation Procedure (PEP)

(U) In general, the Princeton Evaluation Procedure (PEP) is based on comparing *a priori*, quantitatively-defined target information with similarly quantitatively-defined response information. (A complete description of this procedure can be found in Reference 4.) The procedure was developed for use as a research tool in the university environment, where complete knowledge of the target sites could be obtained. Once the target and response information was defined, the PEP applied various methods of mathematical comparisons to arrive at a meaningful assessment score.

1.   (U) Target Information

(U) The definition of a particular target site (usually outdoor sites in and around Princeton, New Jersey) was contained in the yes/no answers to a set of questions called descriptors. These descriptors were designed in such a way as to characterize the typical Princeton target. By definition, the only target information to be considered in the analysis was completely contained in the yes/no answers of the descriptor questions for that site. For example, one descriptor from their list, "Are any animals, birds, fish, major insects, or figures of these *significant* in the scene?" defines the animal content of the site. The question would be answered "yes" for a zoo and a pet store target, but answered "no" for a typical campus building target. Similarly a set (30 for the PEP) of yes/no responses constitutes the target information.

2. (U) Response Definition

(U) The descriptor list for the target sites is used as a definition of the response as well. For a given RV session, an analyst (blind to the target site) attempts to answer the 30 questions based entirely on the single RV response. Using the same example above, an analyst would have to decide if a particular verbal passage or a quick sketch could be interpreted as animals or not. For some responses this might be an easy task, "I get a picture of a purple cow." Most responses, however, require a judgement, "I hear a funny sound and there may be an odd smell in the air." Nonetheless, the yes/no answers to the 30 questions constitute the only response information that will be used in the analysis.

3. (U) Analysis

(U) For a given response/target combination, the information is strictly contained in the yes/no answers to the descriptors. A binary number (30 bits long for PEP) is constructed for the target and the response descriptor questions respectively. A yes answer is considered a binary "1" while a no answer is considered a binary "0." The resulting two 30-bit binary numbers can then be compared by a variety of mathematical techniques to form a score for that specific RV session. For a series of RV sessions, a quantitative assessment is made by comparing a given response (matched to its corresponding target site) against the scores computed by matching the response to all other targets used in the series. This procedure has the added advantage of a built-in, within-group control. In other words, this assessment determines the uniqueness of the target/response match compared with all other possible matches for the series.

B. (U) Problems with the PEP

There are a number of problems with the PEP when the conditions under which the PEP was developed are no longer valid. Because we are trying to develop an RV analysis procedure that is useful both in the RV training environment as well as in applications, we have identified four basic problems with using the PEP for our purposes:

- The bit descriptors were not appropriate for our training environment.
- The PEP was not interfaced to a standard data base management system (DBMS).

- The cross–target scoring procedure was not sensitive to requirements.

- Any cross–target scoring procedure is inappropriate for a training environment.

(U) As stated above, the PEP descriptors were optimized for natural outdoor sites in the Princeton area. Because we planned to use different target material, the PEP descriptor list was completely inadequate. Having obtained the computer codes used at Princeton, we noticed that the PEP required a special on–line, within–code data base. We felt this was an inefficient way to procede because we already had most of our data in a commercial DBMS, Ingres.[5]

One of the principal problems of RV used as an adjunct to conventional collection techniques is that RVers tend to add information, sometimes called analytical overlay (AOL), to the response. If training techniques are to be developed that are sensitive to requirements, they must attempt to inhibit AOL. Specifically, any training analysis procedure must be particularly sensitive to the addition of extraneous information. The PEP was completely insensitive to this requirement.

(U) We also observed that for the purposes of training, any scoring procedure that cross compares a training response against all targets in the target pool, might penalize excellent RV simply because of the lack of target pool orthogonality (i.e., how different one target is to the next). For example, consider a typical *National Geographic* Magazine photograph of a flat desert showing few features. A very good description of this site will also match many other similar sites in the target pool. Thus, a comparison of the actual match with others in the pool will tend to reduce the score for reasons other than the quality of the particular RV response.

(U) We, therefore, felt obligated to modify the PEP in such a way to address the above criticisms.

C. (U) The SRI Evaluation Procedure (SEP)

The SRI Evaluation Procedure (SEP) was developed to address not only various RV training programs, but also the potential application of the SEP to problems. Thus, it was recognized that the SEP must contain cross comparison analytical procedures that

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were sensitive to AOL, and at the same time, provide a meaningful assessment of RV responses that were independent of other targets in the pool.

1. (U) Target Information

) As in the PEP, the SRI Evaluation Procedure quantifies the target material into binary numbers corresponding to yes/no answers to a set of descriptors. Before any of the training programs had begun, a descriptor list was developed on the basis of the target material *(National Geographic* Magazine photographs), and on the responses that might be expected for novice RVers. Table 1 shows the 20 questions (descriptors) that were used for the Alternate Training Task.[6] This descriptor list, while applicable to a novice RV training environment, is not appropriate for either advanced training or⟨⟩applications. The questions are strongly oriented toward outdoor gestalts typical of *National Geographic* Magazine material. Each descriptor list must be tailored to the application requirements. The horizontal lines separating the descriptors in groups of three are an aid in translating binary numbers (derived from the yes/no answers to the questions) into an octal shorthand notation.

(U) To illustrate exactly how a target might be coded into an octal number, let's consider a photograph of San Francisco on a clear day showing the bay, the central city sky-scrapers, and the centrally-located hill (Twin Peaks). Referring to Table 1 Bit Numbers 1, 6, 8, 9, 12, 13, 16 and 17 would all be answered "yes" and thus would be assigned a binary "1." The remaining questions would all be answered "no" and thus be assigned a binary "0." Starting with Bit Number 1 on the left, the binary number that defines the information for this target is 10000101100110011000. This representation, while convenient for computers, is difficult for humans; therefore, we convert it to the octal representation as a shorthand. Using the horizontal lines shown in Table 1 as divisions, we consider each triad of bits as a binary number ranging from 000 to 111. Table 2 shows the binary-number triad to octal conversion factors.

(U) Rewriting the above binary number with triad separations for clarity, we have 10 000 101 100 110 011 000. Using Table 2, we find that this binary number converts to 2054630_8. This octal number is the shorthand notation for all the information contained, by definition, in the San Francisco target example. All targets in the data base are coded by the same technique.

Table 2

(U) BINARY–TO–OCTAL CONVERSION

Binary Triad	Octal Equivalent
000	0
001	1
010	2
011	3
100	4
101	5
110	6
111	7

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2. (U) Response Definition

(U) The descriptor list shown in Table 1 and the coding techniques described using Table 2 are prepared in exactly the same way to define each RV response. For a particular training program, however, a set of *a priori* guidelines must be defined in order to aid an analyst in interpreting the various aspects of the training procedure with regard to the descriptor list. For example, it might be correct within a given training context to advise the analyst to consider all isolated lines as a land/water interface, and set descriptor Bit Number 13 by definition. How this is done is completely dependent upon the particular training procedure in question. For an example see Alternate Training.[6]

3. (U) Analysis

The SRI evaluation procedure involves two different types of analysis:

- Target–pool–dependent analysis
- Target–pool–independent analysis (training).

(U) The first of these involves descriptor weighting that gives more or less credit in the final score in accordance with an *a priori* defined algorithm. It is within this analysis that

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(U)

combination would provide good RV assessments. The correlation coefficients averaged over all analysts were 0.431 and 0.462 for the Princeton and the SRI procedures respectively. While this difference is not significant, there is a bias in favor of the SRI procedure. Within the SRI procedure, No. 642 was the least consistent analyst. There were no significant differences between the full and the selective scoring.

In summary, we have developed a computer-based RV analysis tool that is applicable for both the training. The figure-of-merit analysis allows target-pool-independent assessment of the relative progress of RV trainees. Within a given training program absolute probabilities (against chance) can be assigned for a single training session.

By carefully creating an appropriate descriptor list, and by tracking figures of merit on a bit-by-bit basis, The figure-of-merit analysis requires that complete descriptor information of the site be known. as feedback information is available, descriptor track records (figure-of-merit analysis) can be kept over many sessions to provide accuracy and reliability data on a viewer-by-viewer basis. Thus, viewers can be selected on the basis of their *a priori* probabilites on the descriptors of interest, and *a priori* assessments of their responses can be made by using the same track record.

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Final Report—Task 6.0.3
Covering the Period 1 October 1988 to 30 September 1989

October 1989

A PROTOTYPE ANALYSIS SYSTEM FOR SPECIAL REMOTE VIEWING TASKS (U)

By:

Prepared for:

SRI Project 1291

Approved by:

Copy 5 of 5 Copies

This document consists of 27 pages

COPY 1 of 2

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ABSTRACT (U)

We have developed a prototype analysis system for remote viewings conducted against targets of _____ interest. The system uses individual viewers' performance histories in conjunction with current data to prioritize a set of possible(_____)interpretations of the site.

(U) LIST OF TABLES

(U) LIST OF TABLES

iv

I INTRODUCTION (U)

(U) Since 1973, when the investigations of the human information–accessing capability called remote viewing (RV) first began at SRI International,[1]* evaluating the quality of the information obtained has been a continuing challenge. In order to develop valid evaluation procedures, two basic questions must be addressed:

(1) What constitutes the target?

(2) What constitutes the response?

____• If the RV task is research–oriented, the targets are known, and therefore can be precisely defined. In application –oriented tasks, however, the targets are generally unknown and their descriptions are problematical. In both task domains, RV responses tend to consist of sketches and written phrases. A method to encode unambiguously this type of "natural language" is one of the unsolved problems in computer science, and there has been little progress to date. Thus, a complete definition of an RV response is also problematical.

_____} An application-oriented RV task poses further problems. High–quality RV does not always provide useful application For example, the RV may provide additional support for information that has been verified from other sources, but provide no new information. In some cases, however, an overall low–quality RV may provide key elements that positively influence an analyst's interpretation.

Another characteristic of current laboratory analysis techniques is that they do not provide an a priori assessment of the RV quality. While this is not a problem in the laboratory, ' _ , applications require such evaluation. An RV analyst cannot provide . ratings from the RV alone; rather, the analyst must provide a priori probabilities that individual RV–response elements (or concepts) are present at the target site. It remains the responsibility of an analyst to determine whether such data are ultimately useful.

Analysis of laboratory RV has been a major part of the ongoing Cognitive Sciences Program.[2-7] For FY 1989, we focused on the development of a prototype analysis system that would provide the needed a priori assessments for application tasking.

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* (U) References are at the end of this report.

II METHOD OF APPROACH (U)

The analysis of remote viewing (RV) data in an application environment differs considerably from laboratory analysis. Most often, analysts have incomplete or no information about the target site and are required to provide a priori assessments of data gathered from RV sessions. In this section we outline a prototype analysis system for RV that uses concepts from fuzzy set theory, historical archival data, and "templates" of typical targets. In addition, we apply this prototype system to an existing target pool as an illustration of the power of the technique.

A.   (U) Fuzzy Set Formalism

A more complete description of the full fuzzy set formalism can be found in our literature.[6,7] For the purpose of this report, we have summarized that formalism in general terms that are not specific to either laboratory experiments or application tasking.

1.   (U) Construction of Target and Response Fuzzy Sets

(U) A formal definition of a target and its associated RV response (i.e., the data obtained from an RV session) is necessary to any analysis system. To use the fuzzy set method, a universal set of elements is constructed on which target and response descriptions are based. These elements should contain descriptive aspects of the target material and incorporate items that typify responses from the intended viewers. This universal set should also be extendible (i.e., allow for additional items that may arise in the responses).

(U) In general, the task of an RV analyst is to assign a membership value (μ) between 0 and 1 to each element in the universal set. The numerical value for each element in a response is assigned by the degree to which the analyst is convinced that the given element is present in that response. Membership values for target elements are assigned on the basis of the degree to which the elements contribute to the target description.

In the laboratory, the targets are known, so that defining a universal set of elements is comparatively straightforward.[6,7] In application tasks, however, defining a single universal set of elements that is appropriate for all operations is difficult. Because the usual task is so highly mission-dependent, defining a single universal set of elements that is customized to that mission becomes easier.

The *application* analyst, as opposed to an RV analyst, should construct such a list for each mission. While there may be considerable similarities between element lists for different missions, undoubtedly the lists will require specialization. In Section II–C below, we show the construction of one element list and how it can be applied to a set of 65 targets.

2. (U) Analysis of Complete Responses

Once an appropriate universal set of elements has been created, and fuzzy sets that define the target and the response have been specified, the comparison between them is straightforward. We have defined *accuracy* as the percent of the target material that is described correctly by a response. Likewise, we have defined *reliability* (of the viewer) as the percent of the response that is correct.[6] Although in the laboratory it is required to provide a posterior probability estimates of the target–response match, in an *applications* setting, this may be less important. All that is usually necessary is to describe the accuracy and reliability for complete responses, and for individual target elements of interest. These quantities for the jth sessions are

$$r_j = \frac{\sum_{k=1}^{n} W_k (R_j \bigcap T_j)_k}{\sum_{k=1}^{n} W_k R_{j,k}}, \tag{1}$$

and

$$a_j = \frac{\sum_{k=1}^{n} W_k (R_j \bigcap T_j)_k}{\sum_{k=1}^{n} W_k T_{j,k}}, \tag{2}$$

where the sum over k is called the sigma count in fuzzy-set terminology, and is defined as the sum of the membership values (μ) for the elements of the response, the target, or their intersection, and n is the number of possible elements as defined by the element list. A fuzzy intersection is defined as the minimum of the intersecting fuzzy set membership values. In this version of the definitions, we have allowed for the possibility of weighting the membership values, W_k, to provide mission–defined relevances.

(U) For the above calculation to be meaningful, the membership values for the targets must be similar in kind to those for the responses. For most mission–dependent specifications, this is generally not the case. The target membership values represent the degree to which a particular element is characteristic of the target, and the response membership values represent the degree to which the analyst is convinced that the given element is represented in the response.

3

(U)

Then, $R_0(airport) = 0.20$ is the chance probability (i.e., guessing airport during every session would only by 20 percent reliable). Assume that the viewer mentioned airport $Nr = 6$ times and was correct $Nc = 4$ times. Then this viewer's reliability for airports is computed as $R(airport) = 0.67 > R_0(airport) = 0.20$. The viewer's accuracy for airports is computed as $A(airport) = Nc/N_0 = 0.80$. Thus in this example, we can conclude that this viewer is reasonably accomplished at remote viewing an airport.

B.   (U) Prototype Analysis System

We assume that an ⸺ . analyst has constructed a mission–dependent universal set of elements. We further assume that there are a number of competing interpretations of the target site in question.

1.   (U) Target Templates

The first step in our prototype analysis system is to define templates (i.e., general descriptions of classes of target types) of all competing target interpretations from the universal set of elements.

Exactly what the templates should represent is entirely dependent upon what kind of information is sought. Both the underlying universal set of elements and the templates must be constructed to be rich enough to allow for the encoding of all the information That is, if neither the set of elements nor the templates can meaningfully represent information about the target , then it will be unreasonable to consider asking, relevant questions about the site. Furthermore, a certain amount of atomization is necessary because such division into small units provides the potential for interactions within the universal set of elements. If the profile of a facility consists of a single element, the template would be useless unless the response directly stated that particular element; rather, the profile should be constructed from groups of elemental features

There are two different ways to generate target templates. The most straightforward technique is also likely to be the most unreliable, because it relies on the analyst's judgment of a single target type. With this method, the analyst, who is familiar with the intelligence problem at hand, simply generates membership values for elements from the universal set of elements based upon his or her general knowledge. Given the time and resources, the best way to generate template membership values is to encode known targets that are closely related Each template μ is the average value across targets, and thus is more reliable. If it is known that some targets are more

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"characteristic" of the target type than others, then a weighted average should be computed. In symbols,

$$\mu_j^T = \frac{\sum_{k=1}^{\nu} \omega_k u_{j,k}}{\sum_{k=1}^{\nu} \omega_k}, \tag{4}$$

where the sums are over the available targets that constitute the template, ω_k are the target weights, and the $\mu_{j,k}$ are the assigned membership values for target k.

2. (U) Archival Database

A critical feature of an analysis system for ⌐ ⌐ RV data is that along with the current RV data to be evaluated, the individual viewer's *past* performance on an element–by–element basis must also be included. For example, if a viewer has been relatively unsuccessful at recognizing ⌐ facilities, then a ⌐ reference in the current data should not contribute much in the overall analysis.

As ground truth becomes available for each session, a performance database should be updated for each viewer to reflect the new information This database should be a fuzzy set whose membership values for each element are the reliabilities computed from Equation 3.

3. (U) Optimized Probability List

The goal of any ⌐ RV analysis system is to provide an a priori prioritized and weighted list of target possibilities that results from a single remote viewing that is sensitive to the performance history of the viewer. Assuming that a template exists for each of the possible ⌐ interpretations, an analyst should adhere to the following protocol:

(1) Analyze the RV data by assigning a membership value (μ) for each element in the universal set of elements. Each μ represents the degree to which the analyst is convinced that the particular element is included in the response.

(2) Construct a crisp set, R_c, as an α–cut of the original response set. By adopting a threshold of 0.5, for example, then the resulting crisp set contains only those elements that the analyst deems most likely as being present in the response.

(3) Construct an effective response set, R_e, as $R_e = R_c \cup R_a$, where R_a is the reliability set drawn from the archival database.

6

Final Report--Objective D, Task 1
Covering the Period 1 October 1985 to 30 September 1986

December 1986

A SUGGESTED REMOTE VIEWING
TRAINING PROCEDURE (U)

Prepared for:

SRI Project 1291

Approved by:

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SRI International

(4) Using this effective response set, compute an accuracy and reliability in accordance with Equations 1 and 2. Then compute a figure-of-merit, M_j, for the jth competing interpretations as

$$M_j = a_j \times r_j \ .$$

Of course, the accuracy and reliability use the effective response set from step 3 above.

(5) Order the Ms from largest to smallest value. Since the figures-of-merit range in value from 0 to 1, they can be interpreted as *relative* probability values for each of the alternative target possibilities.

By following such a protocol, an analyst can produce a list of target alternatives that is sensitive to the current remote viewing yet takes into consideration to the individual viewer's archival record.

C.   (U) **Partial Application of Analysis System to Existing Target Pool**

(U) We have used an existing target pool (developed under a separate program) as a test bed for the analysis system described above.

1.   (U) **Criteria for Inclusion in the Target Pool**

Targets in this pool have the following characteristics:

- Each target is within an hour and a half automobile drive of SRI International.
- Each target simulates a ⸻ site (⸻ interest.
- Each target fits generally within one of five functional categories: Production, Recreation, Scientific, Storage, and Transportation.
- Each target meets a consensus agreement of experienced RV monitors and analysts about inclusion in the pool.

(U) The pool consists of 65 targets. Initially, they were divided into 13 groups of five targets each, where each group contained one target from each of five functional categories. By carefully organizing the targets in this way, the maximum possible functional difference of the targets within each group was ensured. Table 1 shows a numerical listing of these targets.

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Table 1

(U) Numerical Listing of Targets

_ ⁻ransformer Station	23. Space Capsule	45. Pump Station
⁻ ⁻park	24. Coastal Battery	46. Ice Plant
⁻ ⁻ellite Dish	25. Bay Area Rapid Transit	47. Caves/Cliffs
- ⁻apons Storage	26. Salt Refinery	48. Bevatron
⁻ ⁻al Fleet	27. Candlestick Park	49. Barn
⁻ ⁻vel Quarry	28. Solar Observatory	50. Golden Gate Bridge
⁻ ⁻mming Pool	29. Food Terminal	51. Modern Windmills
⁻ ⁻ervatory	30. Pedestrian Overpass	52. Baylands Nature Preserve
⁻ ⁻on	31. Electrical Plant	53. Gas Plant
10 ⁻ping and Receiving	32. White Plaza	54. Auto Wreckers
11 ⁻enhouse	33. Space Shuttle	55. Fishing Fleet
12 ⁻c Area	34. Coastal Battery	56. Radio Towers
13 ⁻ellite Dishes	35. Train Terminal	57. Vineyard
14 ⁻ Warehouse	36. Sawmill	58. Pharmaceutical Laboratory
15 ⁻al Air Station	37. Pond	59. Toxic Waste Storage
16 ⁻r Refinery	38. Wind Tunnel	60. Airport
17 ⁻ground	39. Grain Terminal	61. Car Wash
18 ⁻arium	40. Submarine	62. Old Windmill
19 ⁻ Yard	41. Cogeneration Plant	63. Nuclear Accelerator
20 ⁻aft	42. Park	64. Reservoir
21 ⁻age Treatment Plant	43. Linear Accelerator	65. Train Station
22 ⁻er Tower	44. Dump	

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⁻   (U) Fuzzy Set Element List

⁻⁻⁻⁻⁻⁻) In FY 1989, we developed a prototype analysis system for analyzing targets an⁻ ⁻⁻enses in⁻   ⁻remote viewings. A list of elements, based on target function (i.e., the ⁻⁻⁻on specification), is arranged in levels from relatively abstract (information poor) to the rel⁻⁻ ⁻ complex (information rich). Having levels of elements is advantageous in that each can be ⁻⁻⁻ted separately in the analysis.

(U) This universal set of elements (included as Appendix A) represents primary ele⁻⁻⁻ in the existing target pool of 65 targets. The set was derived exclusively from this know⁻ ⁻rget pool. In an actual RV session, however, a viewer does not have access to the ele⁻⁻⁻ ⁻st, and thus is not constrained to respond within its confines. An accurate RV analysis mus⁻ ⁻⁻⁻de any additional data that may be provided in the response; therefore, additional spac⁻ ⁻⁻ been provided on the analysis sheets (see Appendix A) to include elements that are par⁻ ⁻ ⁻e response but not initially included as part of the universal set.
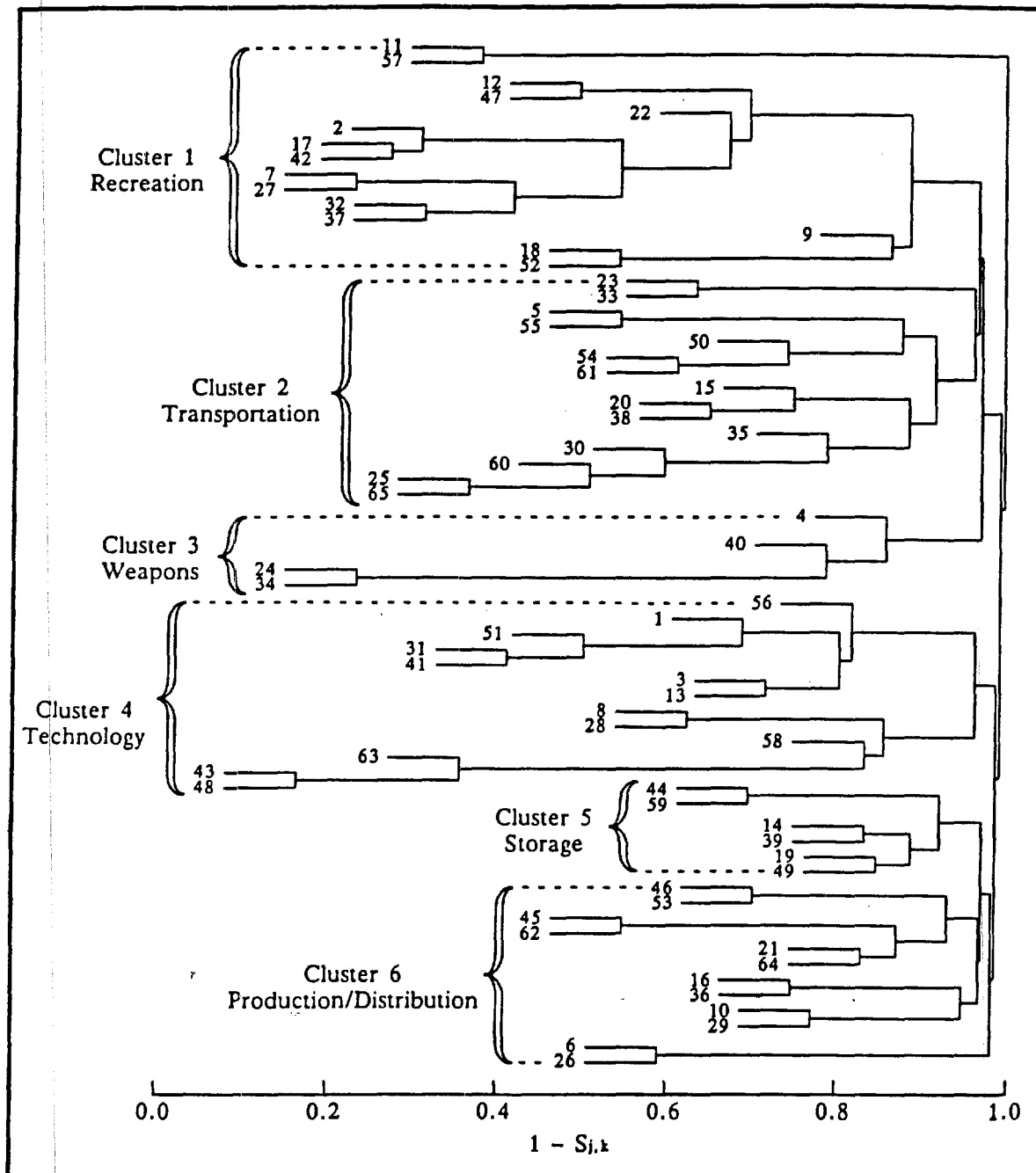
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Figure 1. Cluster Diagram for Targets

(U) We used the technology cluster (i.e., number 4 in Figure 1) to apply Equation 4 to construct a technology target template. Table 2 shows the targets in this cluster, where the horizontal lines indicate the subclustering within the technology group shown in Figure 1.

(U) As a self-consistency check, we included the technology template in the total target pool and recalculated the clusters. As expected, the technology template was included within the subgroup of targets 3 and 13, and well within the technology cluster as a whole.

D. (U) General Conclusions

The goal of this effort was to develop an analysis system that would prove effective in providing a priori assessments of   remote viewing tasks. If the proper mission-dependent universal set of elements can be identified, then, using a viewer-dependent reliability archive, data from a single remote viewing can be used to prioritize a set of alternative target templates so as to chose the most likely one for the mission.

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I INTRODUCTION (U)

Through work at SRI International and other laboratories, a number of individuals have demonstrated an apparent ability to accurately perceive information, which is inaccessible through the "conventional" senses and to convey their impressions in words and symbols. At times these individuals can apparently describe events, places, people, objects, and feelings with very high quality. At SRI, the particular ability to provide detailed descriptive information has been termed remote viewing (RV). Although latent ability and motivation undoubtedly play a significant role, some accomplished remote viewers have claimed that this ability can be taught and learned to varying degrees. In FY 1986, SRI awarded a subcontract to Consultants International (CI) to assemble a detailed report of subjective experience that might lead to a testable RV training methodology. CI was selected because of the long and successful remote viewing experience of its founder, Mr. Gary Langford. CI's reports detailing the suggested training methodology and the concepts upon which the procedure is based are given in Appendices A and B.

(U) SRI's overview* contains, in condensed form, the basic concepts and techniques that CI proposed and a critique of them. Selected RV examples will be shown to clarify and demonstrate the ideas involved. Certain figures appearing in this overview have been abstracted from the CI report. Because the contents of this document are subjective and exploratory in nature, we will not examine RV from an experimental protocol or evaluation perspective.

(U) *We emphasize strongly that these concepts and hypotheses have been arrived at almost entirely through personal observation, introspection and informal experimentation. Almost none of these concepts have been rigorously tested with sufficient data collection to*

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* (U) This report constitutes Objective D, Task 1: Design, develop, and improve training protocols and methodologies for all RV subjects.

1

III RESULTS AND DISCUSSION (U)

(U)   Whether the percipient is a novice, advanced or expert viewer the foregoing procedure applies. With rare notable exceptions, CI asserts that correct descriptions of targets are always built out of much smaller data bits that are gradually assembled into a whole.* As the viewer progresses from novice to expert, the amount of time spent on the various steps of the procedure changes. For example, an expert should find access routine and focus the most attention on details of form and function. A detailed discussion of the division of effort as a function of expertise may be found in Appendix A.

A.   (U) Anatomy of a Viewing

(U)   An example of how the foregoing process is applied by an expert may be found in Figures 4(a) through 4(f). These six figures comprise the entire response of the viewer for a given session. Other than the labeling, the transcripts have not been edited in any way. Where the viewer's handwriting was illegible or where an abbreviation was used, we have provided a "translation."

1.   (U) Figure 4(a)--Initial Access Period.

```
     ▬ : Note that the uniqueness requirement of the target
     has been satisfied by writing down name, date, time and
     session number.  This is the access phase.  Need and
     motivation for a description were provided by informing
     the viewer this RV was one of a series intended to
     calibrate the viewer's proficiency.  The objectify phase
     is indicated by the primary and multiple bits.  The
     initial primary bits are of a steep angle drop-off and a
     flat area.  Multiple bits (a series of connected
     impressions) serve to fill in the gap between the two
     primary bits.  Access is brought to an end by writing
     "break."  This amount of data is much greater than that
     which a novice would perceive during an initial access
     period.
```

---

*(U) Experienced viewers do report very occasional sessions where detailed descritions of the target are possible during the initial access period.

2.   (U) Figure 4(b)—Second Access Period

.   At this point, the viewer was overwhelmed by a vivid
impression of cliffs with water and other features. The
viewer correctly recognized this as IO and labeled it as
such. IO is not considered valid data in subsequent
analysis.

3.   (U) Figure 4(c)—Third Access Period

[More primary bits are presented, and the viewer
enters the Qualification phase for the first time (e.g.,
hard surface). For purposes of visual clarity, we will
not routinely label the objectify and qualify phases in
subsequent figures. However, the distinction can be
easily made by the reader because primary and multiple
bits always represent objectification, while any further
description of form or function is qualification.

4.   (U) Figure 4(d)—Fourth Access Period

) As the viewing proceeds, more time is spent on
describing form and functional aspects.

5.   (U) Figure 4(e)—Fifth Access Period

At this point in the session, the viewer has made use
of a technique in which he retraces a bit to acquire more
information. These advanced procedures are discussed more
thoroughly in Appendix A. Note that the viewer has begun
to arrange bits perceived during previous access periods
into a more nearly pictorial representation.

6.   (U) Figure 4(f)—Sixth and Final Access Period

Note the detailed description of the elements of
target. The bits have now been arranged into a more
coherent whole (sometimes called a composite), and the
viewer has provided a summary word that characterizes the
entire target "ruins."

The actual target is shown in Figure 5. Aside from the obviously
correct assessment of the target as ruins, it is very important to note
that all of the other data bits are also correct. Furthermore, the session
required only approximately 15 minutes to complete. Such a result is
particularly compelling when compared with other free-response techniques.

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For example, telepathy experiments using the so-called Ganzfeld technique of sensory isolation typically require one-and-one-half hours, during which time the percipient produces extensive stream-of-conscious descriptions.The sheer mass of data and dreamlike quality of the responses prevent any effective transcript analysis that might separate signal from noise.

(U)   In early RV experiments at SRI (c. 1975), unstructured free-response descriptions were used, but were limited to 15 minutes. Even with that restriction, discrimination between the product of imagination, memory, and RV was a burdensome analysis task.

(U)   The twin insights that mental noise can be briefly suppressed and that correct data appear in fleeting, indistinct, and sometimes symbolic form has resulted in an enormous increase in viewing efficiency.

B.   (U)   Applications to RV Training

(U)   As the preceding example demonstrates, the procedure described earlier works well when used by the expert who invented it. The task that CI addressed in FY 1986 was to supply sufficient detailed instruction so that individuals with no prior exposure to RV could be trained. A test of this training methodology is presently underway.

009
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2010 - Gary

ACCESS

Tar
(Target)

PRIMARY BITS

stup.

OBJECTIFY

MULTIPLE BITS

flat.

break —END ACCESS
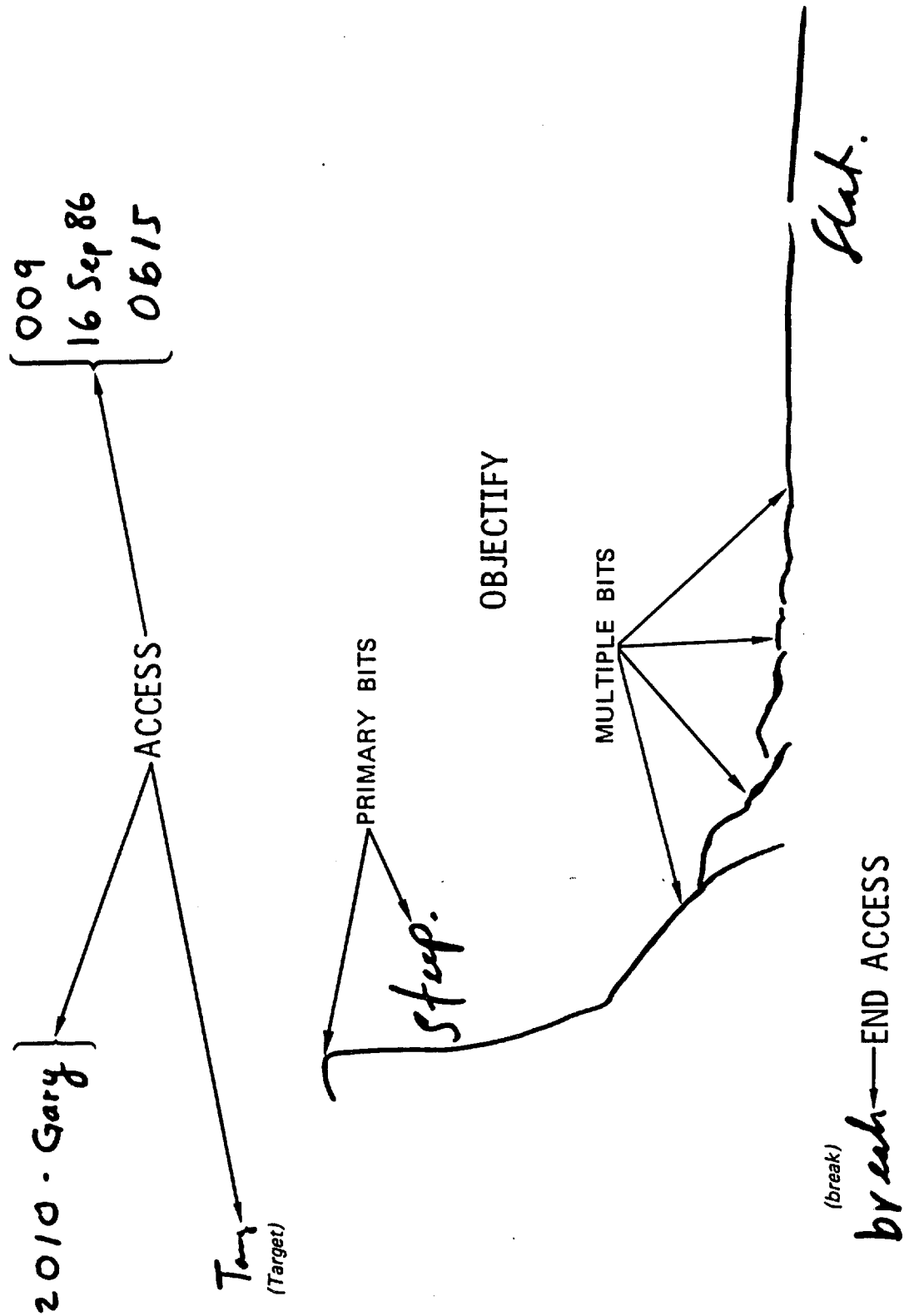
(break)

FIGURE 4(a)   (U)   INITIAL ACCESS PERIOD

FIGURE 4(b)   (U)   SECOND ACCESS PERIOD

INTERPRETIVE OVERLAY

well bowler

flat

長 1mm
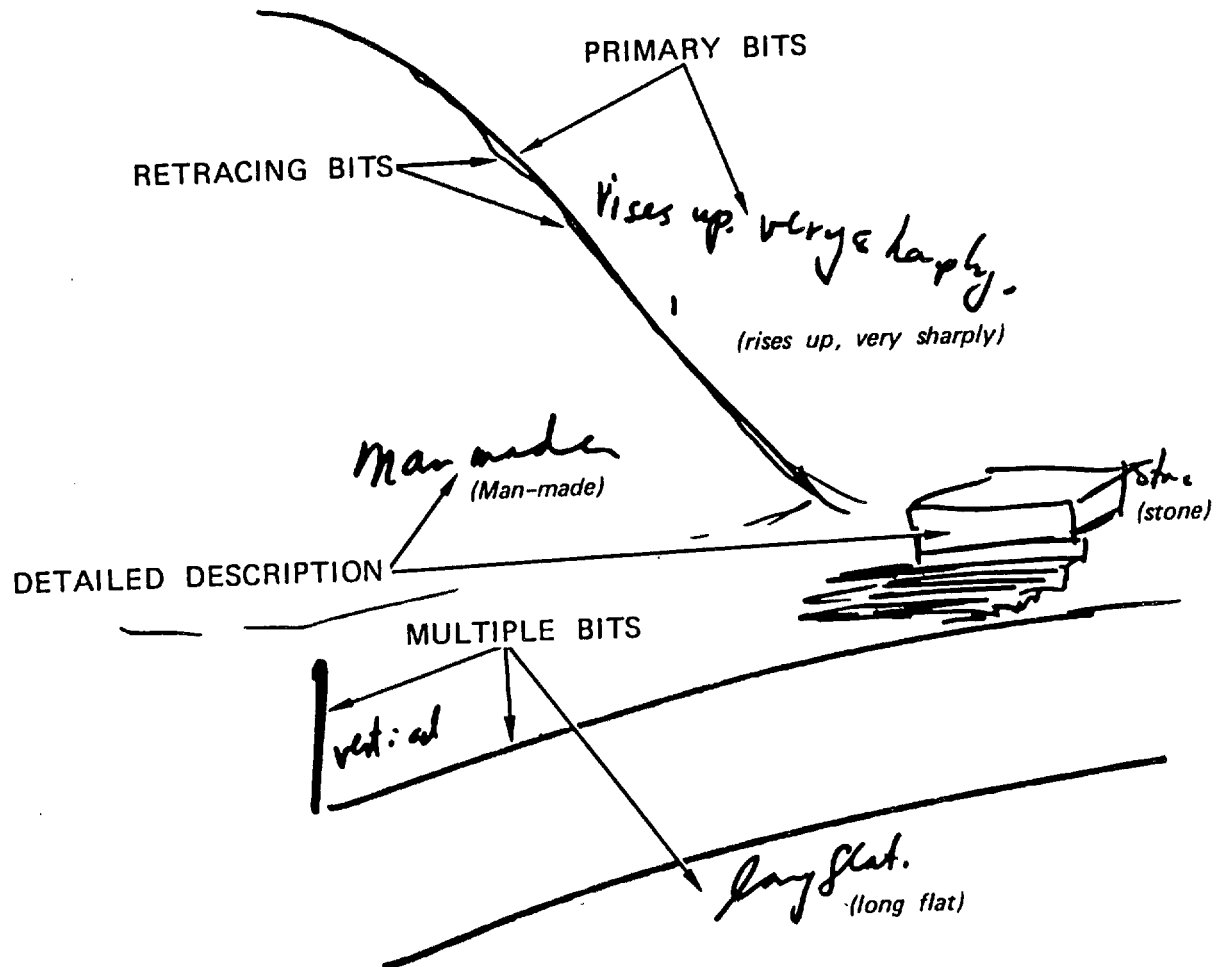
OBJECTIFY → PRIMARY BITS

hard surface

QUALIFY → TEXTURE

Target → ACCESS
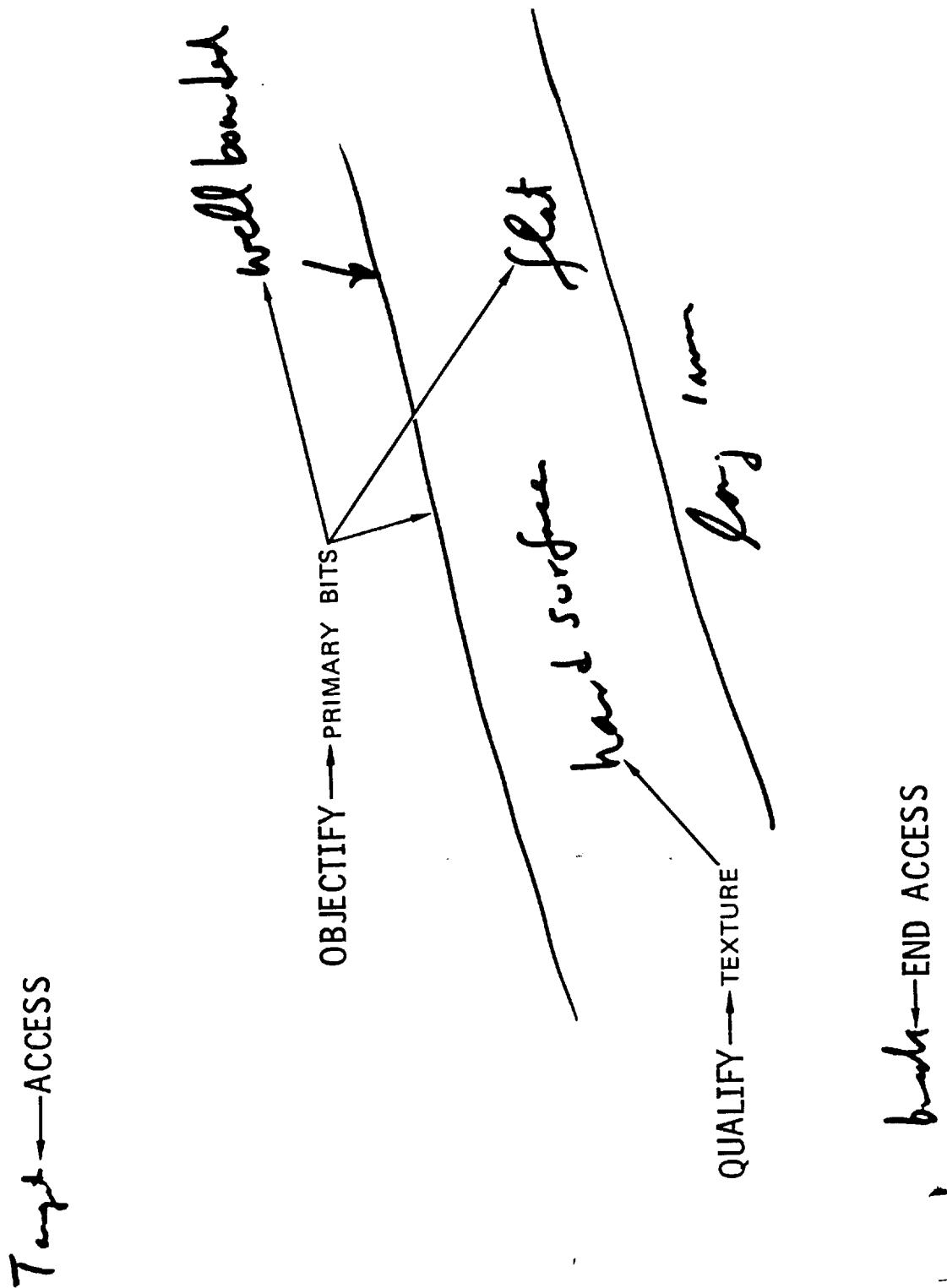
bush → END ACCESS

FIGURE 4(c)   (U)   THIRD ACCESS PERIOD
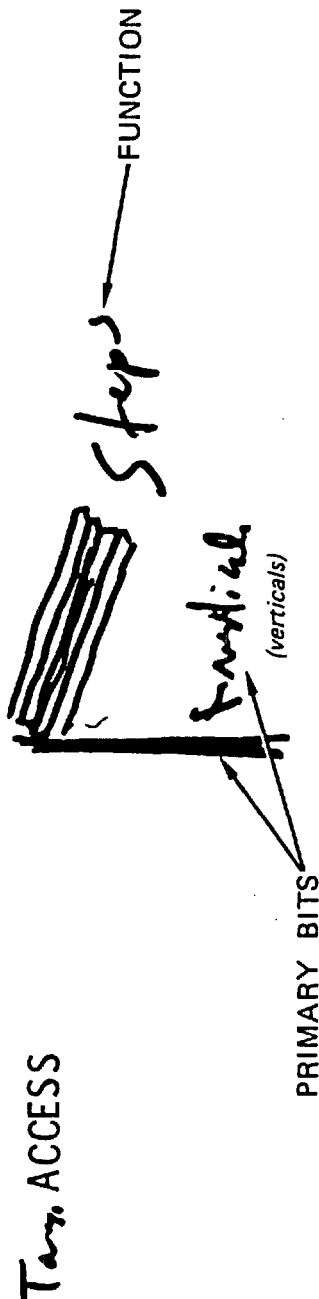
FIGURE 4(d)   (U)   FOURTH ACCESS PERIOD

Target ACCESS

PRIMARY BITS

RETRACING BITS

rises up, very sharply
(rises up, very sharply)

Man-made
(Man-made)

stone
(stone)

DETAILED DESCRIPTION

MULTIPLE BITS

vertical

long flat
(long flat)

END ACCESS

break

FIGURE 4(e)   (U)   FIFTH ACCESS PERIOD

18

Target ACCESS

bond

bonded.

flat/area

PRIMARY BITS

str-
(structure)

structure
(structure)

main pathway

ruins.
(ruins)

FUNCTIONAL DETAILS

End of session

END OF SESSION (END ACCESS)
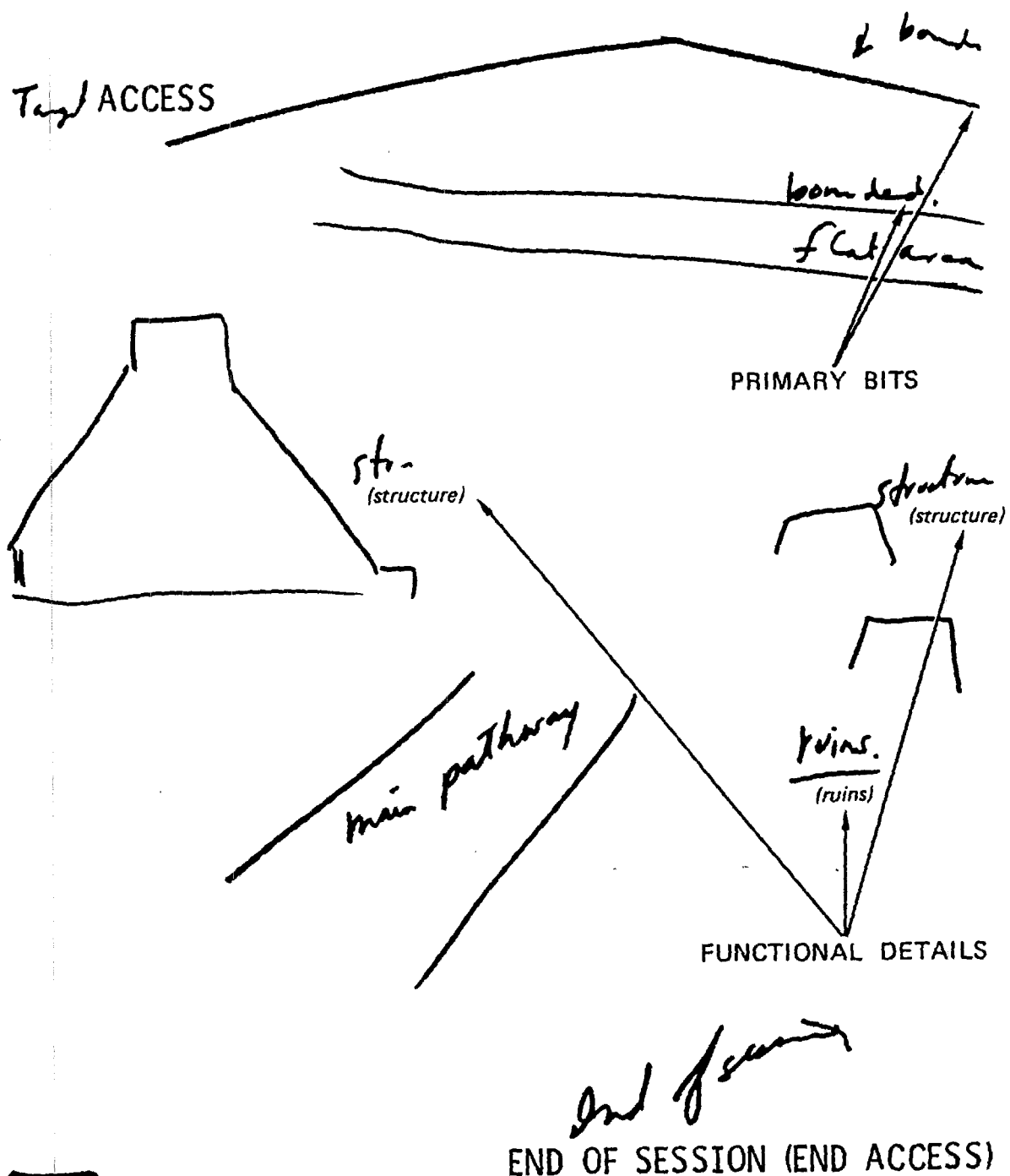
FIGURE 4(f)   (U)   FINAL ACCESS PERIOD (Composite)

Along the old road to
Petra, a Nabataean
mausoleum in Saudi
Arabia was hewn from
a massive outcrop
around the first
century A.D.

480
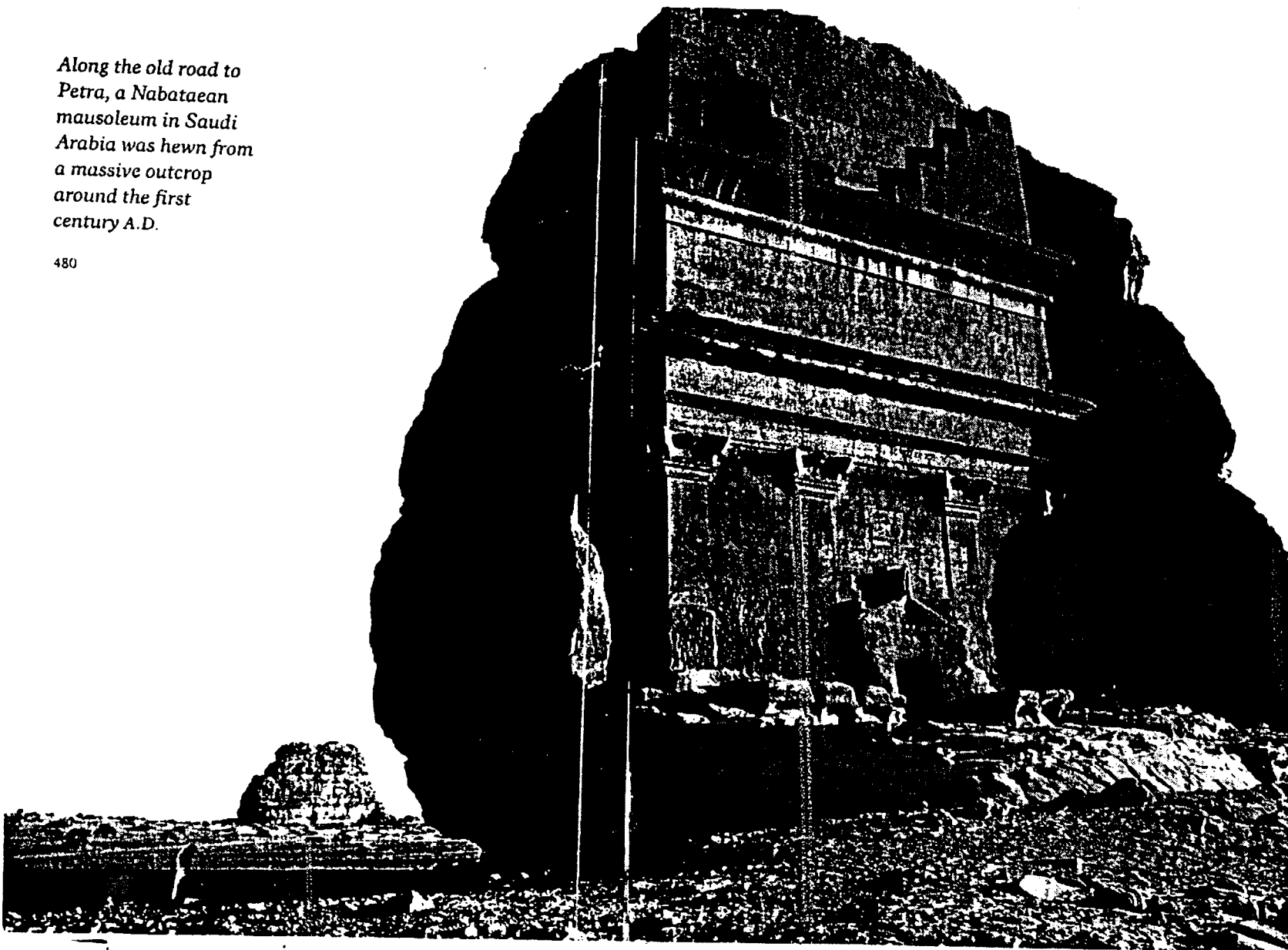
FIGURE 5   (U)   THE RUINS

(U)   Some indication of the previous success of the training method can be found in existing data. In FY 1984, CI first began to outline the basic elements of an RV novice training program. Six individuals with limited or no exposure to RV were selected on the basis of interest and subsequently participated in a series of lectures and experimental sessions that served as the model for the FY 1986 program. Two of the participants in the FY 1984 program demonstrated independent statistically significant evidence of RV ability.

(U)   During FY 1986, three of the best viewers from the FY 1984 program and CI's expert viewer participated in a series of 6 RV sessions each for another Task in the program. As of the time of the FY 1986 experiment, all three previous novice viewers had participated in a total of approximately 100 viewings each. All of those viewings followed the procedure proposed by CI.

As shown in detail in another report,* 3 of the 4 viewers independently scored statistically significant in that 6 session series. (If the probability of a successful series is 0.05, the binomial probability of three out of four successful series is 4.8×10^{-4}). Two of the 3 FY 1984 novices scored significantly, one scoring slightly better than the expert viewer. This result suggests that, at least for certain individuals, the viewing ability can be learned. Whether these particular viewers learned successfully as a result of practice, motivation, latent ability, CI's "technology," or a combination of all four elements is at this time unclear. Considerable future experimentation will be required to begin to determine the relative importance of each element.

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*Hubbard, G. S., and May, E. C., "An Experiment to Explore Possible Anomalistic Behavior of a Photon Detection System During A Remote Viewing Task," Interim Report, SRI Project 1291, SRI International, Menlo Park, California (December, 1986)

Interim Report—Objective E, Task 1
Covering the Period 1 October 1985 to 30 September 1986

December 1986

AN EXPERIMENT TO EXPLORE POSSIBLE ANOMALISTIC BEHAVIOR OF A PHOTON DETECTION SYSTEM DURING A REMOTE VIEWING TEST (U)

Prepared for:

SRI Project 1291

Approved by:

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III RESULTS (U)

A. (U) Remote Viewing Results

(U) Four viewers were asked to contribute six viewings each. In this experiment, the personnel consisted of four of the best viewers participating in ongoing RV programs at SRI.

(U) Each RV session was judged using a figure of merit analysis. The FM is defined as the product of two measures: accuracy and reliability. The accuracy of an RV response is the fraction of the target material that is described correctly. Reliability is the fraction of the response that is correct.[1,2] Tables 1 through 4 show the RV results for each trial. The session number (9001.cr, etc.) incorporates a code for each viewer as well as the chronological sequence of viewings.

Table 1

(U) REMOTE VIEWING RESULTS FOR VIEWER 009

Session	Figure-of-Merit	p-value
9001.lg	0.5714	0.0238
9002.lg	0.3810	0.1961
9003.lg	0.4444	0.0497
9004.lg	0.3333	0.3650
9005.lg	0.0667	0.9233
9006.lg	0.3556	0.2697
Overall p $\leq$ 0.0450		

Table 2

(U)   REMOTE VIEWING RESULTS FOR VIEWER 105

Session	Figure-of-Merit	p-value
9001.rs	0.4571	0.0412
9002.rs	0.1667	0.3486
9003.rs	0.1600	0.3618
9004.rs	0.3333	0.1039
9005.rs	0.0000	1.0000
9006.rs	0.3810	0.0475
Overall p $\leq$ 0.0488		

Table 3

(U)   REMOTE VIEWING RESULTS FOR VIEWER 177

Session	Figure-of-Merit	p-value
9001.hs	0.4444	0.2430
9002.hs	0.1143	0.9579
9003.hs	0.3810	0.2978
9004.hs	0.5000	0.2392
9005.hs	0.5952	0.0677
9006.hs	0.6429	0.0136
Overall p $\leq$ 0.0385		

Table 4

(U)   REMOTE VIEWING RESULTS FOR VIEWER 807

Session	Figure-of-Merit	p-value
9001.cr	0.0000	1.0000
9002.cr	0.3333	0.2267
9003.cr	0.5208	0.0240
9004.cr	0.0833	0.7494
9005.cr	0.3750	0.1321
9006.cr	0.1333	0.5911
Overall p $\leq$ 0.1895, n.s.		

(U)   From the FM analysis performed for our FY 1984 experiment, we determined that by computing the p-value for each FM we could determine an average p for each viewer and for all sessions combined. The overall probability of obtaining that average p-value was then calculated, either by an exact method for small numbers of sessions[7] or by using the central limit theorem for greater than 20 sessions.[8] In the current analysis, an additional test of significance, the Fisher Chi-square technique, has been added to supplement the probability associated with average p-value for a given series.

The overall p-values given for each viewer's series as shown in Tables 1 through 4 were calculated using the Fisher Chi-square technique. Averaging all p-values for all sessions yielded p(avg.) = 0.3437. Using the central-limit theorem, the probability associated with that average value is p $\leq$ 0.004. Using the Fisher Chi-square method, a p-value of $\leq$ 0.0036 was calculated for all 24 sessions, indicating good agreement between techniques. We observed that three out of the four viewers independently produced significant results. This outcome is an extremely rare event. If the probability of success is p $\leq$ 0.05, the binomial probability of obtaining three out of four successful results is p $\leq$ 0.00048. These individual and overall results are substantially better than achieved in the FY 1984 study.[3]

Final Report—Objective F, Task 1.
Covering the Period 1 October 1987 to 30 September 1988

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APPLICATIONS OF FUZZY SETS TO REMOTE VIEWING ANALYSIS (U)

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II TECHNICAL DISCUSSION (U)

A. (U) Retrospective Analysis

We have reanalyzed all of the remote viewing experiments conducted during FY 1987 that used *National Geographic* magazine targets. There were a total of 292 sessions from the tachistoscope, real–time versus precognition, and hypnosis experiments. Using an overall p–value < 0.05 as a definition of statistical evidence of RV, only the real–time versus precognition experiment failed to meet that criterion.

During FY 1987, the analysis of these data used a subjective rank–order technique. For each RV response, the intended target and 6 decoys were ranked in order from most to least correspondence. The combined average sum–of–ranks was 3.781, where the expected average was 4.00 ($z = 1.87$; $p \leq 0.031$). Thus, even including the real–time versus precognition experiment, the total RV effort for FY 1987 showed statistical evidence of an information transfer anomaly.

It is possible that a mechanism other than psychoenergetics could account for this overall result. Suppose that analysts tended to rank the target packs in order of complexity––the most complex first, the least last. That is to say, a target with an abundance of elements would have more correspondence with any response, psychoenergetically mediated or not. To examine this hypothesis, complexity was defined as the total number of target elements such that their membership (in the target fuzzy set) was non–zero.* Two distributions were then constructed:

(1) The distribution of complexities for the targets ranked first by the analyst

(2) The distribution of complexities for the correct target regardless of rank.

Figure 1 shows these two distributions. The black histogram clearly demonstrates a bias ($x^2 = 11.30$, df = 6; $p \leq 0.08$) on the part of the analysts to favor the most complex target as the best match to a given response. This is to be expected, in that the instructions to the analysts are to find the *best* match between target and response. Thus, especially for noisy data, it is not surprising to find such a bias. On the other hand, the complexity distribution shows no

---

*(U) The universe of elements for the target fuzzy sets was described during FY 1987,[7] but is repeated here in the Appendix.

3

such bias for the intended target ($X^2 = 9.29$, df = 6; $p \leq 0.16$). In other words, since the intended target is chosen by a random number generator, the cross–hatched histogram is a simple test of the randomization algorithm. To test the null hypothesis that the proportions are the same in the two distributions, a chi–square was computed where the expected value in each cell was the row–total times the column–total divided by the grand–total. The proportions are significantly different for these distributions ($X^2 = 15.35$, df = 6; $p \leq 0.018$). Thus it is unlikely that judging bias in favor of the most complex target can account for the overall significant evidence of RV during FY 1987.
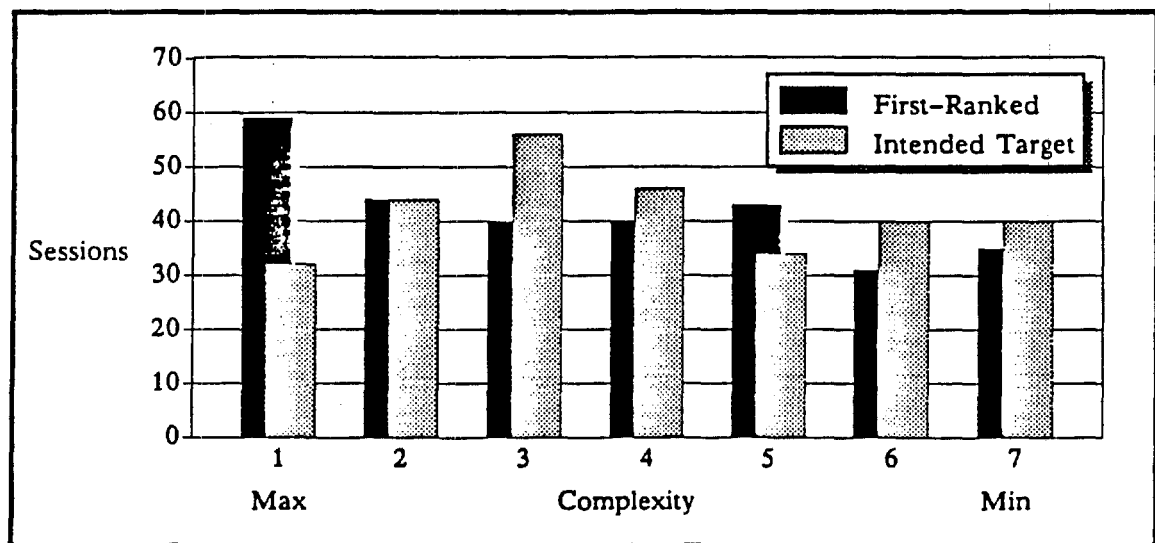
FIGURE 1   (U) COMPLEXITY DISTRIBUTIONS FOR FIRST–RANKED
AND INTENDED TARGETS

B.   (U) Target Pool Reduction

(U) To provide a more manageable target pool for rank–order judging, we reduced the original *National Geographic* magazine target pool from 200 to 100 targets. The fuzzy set approach, in conjunction with cluster analysis, was used to produce 20 sets of 5 orthogonal targets. These sets were "fine tuned" by visual inspection to provide the best possible target sets. Approximately 20 percent of the targets required changing. The set of 100 targets was photographed and duplicated to form to identical target pools, one for analysis purposes only and the other for target purposes only. Separating these functions into two separate pools ensured that there could be no inadvertent handling cues (i.e., the experiment team "marking" the intended target so the analyst could recognize it).

(U)

(i.e., responses assigned to targets that were not the intended target for the session), we were able to explore a number of options. If the information channel is not saturated, then it is reasonable to assume that the more information available in the target, the more information could be received via remote viewing. The criterion that was adopted was that the information calculated from a set of randomly selected cross–matches could not show significant correlations with the complexity (defined by the sigma count) of the associated targets.

Unfortunately, this method failed. A strong correlation was found between the cross matches and target complexity. In retrospect, the problem is obvious. Even using the modified responses, the probability of a match with a random target increases with target complexity (i.e., the more that is said, the more likely that there is a match to a random target).

We explored a number of different variations on the above formalism. To date, however, we have been unable to arrive at an appropriate formulation that meets the above or other criteria for a measure of information transfer during remote viewing experiments.

III CONCLUSIONS AND RECOMMENDATIONS (U)

(_____) It is extremely likely that there is an even more fundamental reason why the various procedures failed as a measure of information transfer during remote viewing. The elements from which the target and response sets are drawn are not of equal weight in information space. For example there is considerably more information (in any sense of that term) contained in an element such as church compared to an abstract element such as horizontal lines. Yet in this first attempt, the μ-values were all weighted equally.

(U) One direction that deserves exploration is limiting the target descriptions (by the weighting factors for each element in the fuzzy set) to sets of targets that appear to have constant "information" content. This might allow for a more systematic search for an appropriate information representation.

(U) Another problem was that the most uncertainty in a response was assumed to be a blank page. In the final days of FY 1988, Dr. L. Gatlin, a specialist in biological information systems, suggested that we approach the problem from a different point of view. The most uncertain situation is that in which a viewer is completely driven by his/her own response biases. Thus, H_0 should be calculated from the bias set, B, or something like it.

(U) It is very important to continue along these lines. Until a meaningful encoding of the information transferred during remote viewing experiment is found, there is little hope of success for quantitative modeling. We recommend that a consultant be found who is a specialist in applying information theory to natural scenes and natural language.

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May 1985

Final Report
Covering the Period October 1983 to October 1984

BACTERIAL MUTATION STUDY (U)

SRI Project 7408-10

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EXECUTIVE SUMMARY (U)

The experiment presented in this document was a conceptual replication of reported work in the parapsychological literature, claiming positive statistical evidence for psychoenergetic interactions with biological systems. Both the energetic and informational aspects of human interaction with bacteriological systems were examined, with the ultimate objective of determining, to first order, whether biological systems can be employed as psychoenergetic "intrusion detectors."

(U) There were two principal experimental hypotheses under consideration. The first, which will be referred to as the Intuitive Data Sorting (IDS) hypothesis, posits that individuals are able to identify or "sort out" locally–deviant subsequences contained within a larger random sequence using psychoenergetic means. In our experiment, an IDS hypothesis predicted that individuals would be able to identify psychically––from a set of test tubes with a normal statistical spread of mutation rate––subsets of test tubes either with slightly higher or slightly lower average mutation rates than the overall mutation rate for the entire set. Because an IDS mechanism appears to be predicated on an individual's ability to gain information about a system psychoenergetically, it is thought to involve *informational processes* primarily.

(U) The second experimental hypothesis, which will be referred to as the Remote Action (RA) or IDS Unfavorable (IDSU) hypothesis, postulates that certain individuals are able to effect either a predetermined increase or decrease in a given samples's mutation rate, by somehow "mentally" causing physical (e.g., genetic) changes in the bacteria. Because an RA mechanism appears to be predicated on an individual's ability to effect physical changes in a system psychoenergetically, it is thought to involve *causal or energetic processes* primarily.

A total of seven subjects contributed six sessions each: three sessions were designed to test the IDS hypothesis, and three were designed to test the RA hypothesis. In all sessions, the subject was confronted with nine test tubes, which were visible inside a locked, environmentally–stable ice chest. The tubes contained dilute solutions of the bacterium *Salmonella typhimurium*. The bacteriological preparations were carried out by SRI's Microbial

Genetics Department, which routinely uses the Ames *Salmonella* assay that was adapted for use in this study.

(U) In the IDS sessions, the subjects were able to choose three test tubes in which they wished to promote the mutation rates psychoenergetically (high aim), three tubes in which they wished to inhibit mutation rates (low aim), and three that they wished to leave "uninfluenced" as controls (no aim). In all of the RA sessions, Tubes 1, 2, and 3 were predetermined as the low–aim tubes (the subject would attempt to inhibit mutation rates); Tubes 4, 5, and 6 were the no aim controls; and Tubes 7, 8, and 9 were the high–aim tubes (the subject would attempt to promote mutation rates). The basic premise in comparing the IDS and RA conditions is that the subjects were given the opportunity to **select** high–versus–low mutation rates from a natural spread of nine in the IDS sessions. Given the **predetermined** tubes of the RA sessions, however, the subjects were required to cause physical changes in the bacteria, in order to achieve the desired high–versus–low mutation rates.

(U) The overall result of the experiment showed weak statistical evidence that individuals are able to sort bacteriological samples according to mutation rate—that is, a $p \leq 0.05$ was obtained overall in the IDS sessions for the mutation rates of the low–aim test tubes being lower than the no–aim controls. Statistical significance was not achieved in any of the other IDS conditions (i.e., for no–aim mutation rates being less than high aim or for low aim being less than high aim). There were no significant differences for various aims observed in the RA condition. It must be concluded, therefore, that while there was some evidence that subjects are able to gain information psychoenergetically about the mutation rates of *Salmonella*, there was no compelling evidence that subjects are able to cause physical perturbations in these bacteria.

_____' According to criteria set forth in the beginning of this study, a physical system will not be considered a candidate intrusion detector unless there is clear evidence that it is registering energetic effects (i.e., physical perturbations) concomitantly with psychoenergetic intent. To first order, therefore, it must be concluded on the basis of this one experiment that the *Salmonella* bacterium does not appear to be a promising intrusion detector.

‾ Because this is the only known experiment of its kind using *Salmonella* bacteria as the target biological system, replication is strongly recommended––both to verify the

2

robustness of the IDS capability, and to evaluate definitively the efficacy of using *Salmonella* as an intrusion detector.

I OBJECTIVE (U)

The objective of this subtask was to determine the veracity of the claims in the parapsychological literature regarding psychoenergetic interactions with biological systems. A conceptual replication of the most promising of these earlier claims was undertaken, as a means to examine whether biological systems register physical effects concomitantly with psychoenergetic "intent" by an observer. This initial experimental effort was an attempt to determine, to first order, whether biological systems can eventually be employed as psychoenergetic "intrusion detectors."

4

II INTRODUCTION (U)

One of the ultimate applications goals of psychoenergetic phenomena is the determination of whether psychoenergetic intrusion can be detected, and whether counter-measures exist against such intrusion. From a phenomenological perspective, the term *psychoenergetic intrusion* can entail what appears to be either energetic or informational processes, or both, as indicated by the following set of operative definitions:

- The direct perturbation of physical systems that appear to be well shielded against, or otherwise inaccessible to, human influence (energetic).

- The psychoenergetic acquisition of information thought to be secure against access (informational).

- The perturbation of a physical system that occurs indirectly as a result of an individual's attempts to acquire information through psychoenergetic means (energetic and informational).

Only those intrusions that entail causal interactions with physical systems are likely to be detected. A physical system will not be considered a candidate intrusion detector, therefore, unless it registers energetic effects directly (as a result of intentional perturbation), or indirectly (as a result of concomitant acquisition of information).

In the parapsychological literature, the energetic manifestations of psycho-energetic intrusion are variously referred to as remote action (RA), remote perturbation (RP), psychokinesis (PK), telekinesis (TK), and so forth; informational processes are most often referred to as remote viewing (RV), clairvoyance, precognition, and the like. The term *countermeasures* may be defined as the shielding or jamming of psychoenergetic intrusion by either physical or mental processes.

Before the higher-order problem of countermeasures can be addressed, experimental verification of the existence of psychoenergetic intrusion must first be obtained. Detection of the putative energetic aspects of psychoenergetic intrusion can be accomplished most directly by designing experiments in which an individual's primary task is to actively attempt to cause perturbations in various types of physical systems. Numerous RA

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experiments of this type, using a wide variety of physical systems, have been cited in the parapsychological literature.

(U)   One category of candidate target physical systems is biological systems; the precedent for using these in RA experiments has been well established.   Of particular interest (because of its similarity to the experiment detailed in this document) is Carroll B. Nash's experiment involving the psychokinetic control of bacterial mutation.*   The published abstract of the Nash experiment is provided here:

> *Three experimenters each tested 20 subjects not known to be psychically gifted.   Because of procedural errors, results were obtained for only 52 subjects.   Each subject was tested in a single run with a separate set of nine tubes of a mixed culture of lac–negative and lac–positive strains of Escherichia coli.   Mutation of lac–negative to lac–positive was mentally promoted in three of the tubes, mentally inhibited in three, and three of the tubes served as controls.   The mutant ratio of lac–positive to total bacteria was greater in the promoted than in the inhibited tubes, with two–tailed $p < 0.005$; less in the inhibited tubes than in the controls, with two–tailed $p < 0.02$; and greater in the promoted tubes than in the controls, although not significantly so.   The results are interpreted to suggest that the rate of bacterial mutation was psychokinetically affected.*

The experiment described in this report also undertook to investigate psychokinetic influence on bacterial mutagenicity, but it differs significantly from the Nash experiment in certain of its experimental protocols and underlying theoretical assumptions. The overall objective was also different than that of the Nash experiment in that the SRI study is concerned with providing a "first order" examination of the existence of psycho-energetic intrusion detection with biological systems,

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*(U) Nash, C. B., "Psychokinetic Control of Bacterial Growth," *Journal of the Society for Psychical Research,* Vol. 51, pp. 217–226 (1982).
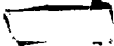
(U)

with medium containing histidine), and selective minimal glucose plates (i.e., plates with medium lacking histidine) to allow for the growth and appearance of bacterial colonies.

2. (U) Procedural Terms

The following are the most common procedural terms:

- Subject—One of seven volunteers who undertook to psychoenergetically influence the mutagenicity of the bacterial samples.

- Monitor—The individual recording the events that transpired during an experimental session, and supervised the subject's activities.

- Technician—The microbiologist who was responsible for all aspects of the pre- and post-session preparation of the biological samples.

- Session—A single sitting in which the subject attempted to (1) increase the mutation rate of bacteria placed in three test tubes, (2) decrease the mutation rate of those placed in three different test tubes, and (3) leave yet a different group of three uninfluenced as "controls." Each of the seven subjects contributed six such sessions.

- Trial—An attempt by a subject to psychoenergetically influence (or not influence, as in the case of control test tubes) the bacterial culture in a single test tube. There were nine such trials in each experimental session.

- Controls—Two types of controls were employed in this experiment: intrasession and extrasession. Intrasession control test tubes consisted of three bacterial test tubes, which the subject was instructed not to attempt to actively influence, from among the set of nine session test tubes. Extra-session controls consisted of two tubes per session that were prepared by the technician in exactly the same manner as the session test tubes, but were not used as part of the experimental session set of nine tubes. The extrasession controls remained at all times in the Microbial Genetics Laboratory, and provided the requisite data for establishing an independent measure of mutation rate.

- Feedback—A drawing presented to the subject that indicated his/her performance on a given session. Feedback for a given session was typically administered prior to the start of the subject's next session.

B. (U) Biological Background

In this section, we will give a general overview of the Ames *Salmonella* assay that is used routinely by SRI's Microbial Genetics Department, and that was adapted for use in this experiment to study psychoenergetic effects on mutation frequency.

(U) The heritable material of living organisms is contained in the DNA (RNA in some viruses), a large molecule so constructed that it can replicate itself in a most exact fashion one cell generation after another. This is the basis of biological continuity and unity. It is also, however, the basis for biological diversity, which occurs through mutations. Each mutation alters the action of a specific gene, which is a genetic entity with its own specific end product, or protein. Genes are very stable structures, but each has its own spontaneous mutation frequency. The probability that a spontaneous mutant cell will be obtained every time a cell divides is constant, provided the environmental conditions are unchanged. Changes in the environment are known to influence the mutation frequency. Such changes include the presence or absence of certain trace elements (e.g., selenium), plus the presence of physical or chemical agents (mutagens).

Bacteria provide a convenient way to study mutations because millions of cells can be grown in a very short period of time. Over the past few years, several bacterial assays have been developed to screen chemicals for their ability to induce mutation. Because there is a close correlation between mutagenesis and carcinogenesis, such mutagenicity assays are very often used together with the *in vitro* tests that employ single microbial and/or mammalian cells, as well as *in vivo* tests that employ multicell organisms from insects (fruit fly) to mammals (rodents). One of the best known bacterial mutagenesis assays is the *Salmonella/* mammalian microsome histidine reverse mutation assay developed by Dr. Bruce Ames at the University of California in Berkeley. The Microbial Genetics Department at SRI International is using this assay system on a daily basis for Government agencies and commercial clients to determine the mutagenic potential of chemicals; they have performed such testing over a period of more than 10 years.

(U) The *Salmonella* assay employs several tester strains of *Salmonella typhimurium*, each with a unique specificity for detecting chemical mutagens. The *Salmonella* strains, under optimum conditions, have a generation time of less than 30 minutes. The bacterial strains are unable to grow in the absence of the essential amino acid histidine because of a mutation in one of the genes that is needed for histidine synthesis. When these bacteria are plated on defined selective medium having little or no histidine, little or no growth occurs except those few bacteria that spontaneously mutate back to histidine independence (ability to grow in the absence of histidine). In this case, a nonfunctional gene product is reverted back to a functional one. This event allows the mutant cells to grow and divide. Because a mutation is stably inherited, all progeny of the mutated cells retain the ability to grow in the absence of

(U)

histidine. Distinct individual colonies will appear on the solid selective growth medium, with each colony containing billions of progeny of the spontaneously mutated cells. Exposure of the bacteria to a chemical mutagen will result in an increased number of colonies appearing on the solid selective growth medium, due to an increase in mutation induction.

(U) In the Ames *Salmonella* assay, a small amount of histidine is added to the growth medium to allow for a few cell divisions of all the plated histidine requiring mutants ($\sim 10^*$). Such growth is often necessary for chemical mutagenesis to occur. The results of the *Salmonella* assay are usually expressed in terms of the number of revertant colonies per amount of chemical added to the selective growth medium, which is usually delivered to the plate in 25-ml volumes. Because of the presence of limited histidine in the selective medium, the results of the Ames *Salmonella* are considered "semiquantitative," since residual growth on all plates (control as well as chemical treated) does not allow for quantitative survival determination. A quantitative mutation frequency, however, can be determined. It is more labor intensive than the standard Ames assay, because survival determination requires diluting of the cell cultures, and a different growth medium is needed for determining (1) the mutant fraction and survivors for each of the controls, and (2) the different exposure concentrations of the test chemical. The mutation frequency is defined in terms of number of mutants per given number of surviving cells, usually per 10^6 cells.

Because of its simplicity and the rapid response time of about two days, the Ames *Salmonella* assay can readily be adapted to study the effect of RA on the mutation frequency. Such an adaptation was established by SRI's Microbial Genetics Department for use in this experiment; a detailed discussion of the specific biological procedures that were followed can be found in Section D, *Protocols*.

C. (U) Experimental Design

1. (U) Conceptual Replication

The experiment undertaken in this study represents a conceptual replication of the Nash experiment described in our Introduction chapter. The replication presented here is termed **conceptual**, because several of the experimental details of the Nash experiment have been changed and improved. First, two potential mechanisms have been postulated that could account for the acquisition of a statistically significant effect—that is, an IDS hypothesis has been advanced, in addition to the more established RA hypothesis. Second, *Salmonella*

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typhimurium rather than *Escherichia coli* were used as the target bacterial cultures. Because this particular species of *Salmonella* is used most frequently by SRI's Microbial Genetics Department in toxicity studies, its behavior is particularly well understood in terms of assay conditions and experimental protocols. Finally, the Nash analysis was extended to include multiple analyses of variance.

As in the Nash experiment, nine test tubes filled with dilute bacterial culture were used per session. Mutation from histidine dependence to histidine independence was mentally promoted by the subject in three of the tubes, mentally inhibited in three, and the remaining three tubes served as controls. For the purposes of obtaining baseline data, two additional control test tubes (for a total of eleven altogether per session) were prepared in the same manner as the session test tubes, but were kept in the Microbial Genetics Laboratory.

2. (U) Model Testing Criteria

a. (U) The IDS Model

(U) As mentioned previously, there were two primary models under investigation in this experiment. A pivotal concept to the first, or IDS favorable model, is **freedom of choice**: namely, that by using some type of psi–mediated informational processes, subjects have the opportunity to select out locally–deviant subsequences from a larger random sequence. For example, in half of the sessions, the subjects were allowed to select the three test tubes in which they wished to promote mutation, and the three test tubes in which they wished to inhibit mutation. A statistically significant deviation from mean chance expectation (MCE) in this condition, therefore, could be interpreted theoretically in two ways: (1) the subjects somehow mentally "forced" genetic changes to occur in the bacteria in accordance with their desires to either promote or inhibit mutation rates (the RA hypothesis); or (2) given the natural spread of mutation rates in a biological system, the subject was able to psycho-energetically **sort** those test tubes containing bacteria with high mutation rates from those tubes containing bacteria with low mutation rates (a session–by–session IDS hypothesis).

b. (U) The RA or IDSU Model

(U) The second model under investigation has been termed the Remote Action (RA) or Intuitive Data Sorting Unfavorable (IDSU) model. In this condition, the conduits by which either the subject or experimenter are able to **select** test tubes are rendered

(U)

the seven had been participants in previous psychoenergetic experiments--i.e., all four had demonstrated some ability in remote viewing. One of these four subjects also scored significantly in an earlier SRI random number generator PK experiment, and another had demonstrated some ability previously in Computer-Assisted Search (CAS) tasks. All of the participants were SRI employees: one was a statistician, two were secretaries, and the remainder were research professionals in either physics or computer science.

b. (U) **Experiment Site Locations**

For reasons stated in Section C.2.a, it was determined that the biological technician should be kept entirely blind as to all facets of the experiment, and that, in order to facilitate this situation, the psychoenergetic testing should occur in a location that was different from the one used for the biological preparations. The Microbial Genetics Laboratory, therefore, was used for all aspects of preparation of the biological cultures, and a room in another building at SRI was used for the psychoenergetic sessions.

c. (U) **Hardware Construction**

Once it had been determined that two separate facilities were necessary for conducting the experiment, a container had to be constructed that was suitable for transporting the biological samples from the Microbial Genetics Laboratory to the psychoenergetics facility. There were three primary factors that dictated the design of the container: (1) the biological samples had to be protected from extreme variations in temperature; (2) the samples had to be protected from sunlight; and (3) the container had to be lockable.

To control against extreme variations in temperature, which can greatly affect the mutagenicity of *Salmonella*, a Coleman® ice chest was chosen as the transport container. Triple-paned insulated glass windows were specially installed in the top and front side of the ice chest to allow an unobstructed view of the experiment test tubes. Because sunlight also affects the mutagenicity of the bacteria, a tarpaulin was used to completely cover the cooler during transport between the biological laboratory and the psychoenergetics facility. A lock was installed; the key was retained exclusively by the biological technician, to preclude the possibility of tampering with the biological samples once they had been removed from the Microbial Genetics Laboratory.

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2. (U) Presession Protocols

(U) A series of activities took place prior to the start of every experimental session. First, the experiment monitor identified the session type from the fixed session sequence, "aababb," (cf. Section C.2.b), to determine whether the session would be an IDS favorable or an IDS unfavorable (RA or IDSU) condition.

Second, the technician in the Microbial Genetics Laboratory prepared the bacterial cultures for the session (see Appendix). Eleven numerically-labelled, sterile, 16-X-150-mm test tubes were aseptically filled with 2.5 ml of glucose minimal broth. Fifty μl of a 37°C overnight culture of strain TA100 of *Salmonella typhimurium* was then added to each tube.* In a standardized manner, the first nine tubes were arranged in a test-tube rack, which was placed in the specially designed ice chest, and then locked. The remaining two control cultures were shielded from visible light by a covering of aluminum foil, and were maintained at room temperature in the Microbial Genetics Department laboratory.

(U) The ice chest, with its enclosed cultures, was placed on a cart and covered with a tarpaulin to ensure that the mutation rate of the cultures was not affected by sunlight during transportation from the laboratory to the experimental facility.

(U) Third, the experiment monitor transported the covered ice chest on the cart from the biological laboratory to another facility at SRI, where the psychoenergetic portion of the experiment was performed. Prior to the arrival of the subject, the monitor wheeled the ice chest into a room equipped with a table and two chairs. The ice chest was then uncovered and positioned in such a way that a seated subject could readily view the nine numbered test tubes through the glass.

3. (U) Session Protocols

(U) For other than the first session for each subject, a session usually commenced with feedback to the subject of the previous session's results (to be discussed in "Postsession

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*(U) It should be noted that there was no visible evidence of "cloudiness" caused by the bacterial culture in any of the prepared test tube solutions. The appearance of the liquid was uniformly that of clear tap water. Thus, there were no visual cues available to the subject, as to which test tubes might contain greater amounts of the bacterial culture.

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the appropriate test-tube-selection numbers. The order of selection and an estimate of the duration of effort per each test tube were noted in the "Comments" section. Upon debriefing the subject at the end of a session, the monitor also recorded any comments the subject wished to make regarding possible strategies employed in the performance of the task, and any personal statements the subjects wished to volunteer pertaining to their state-of-mind, health, and so forth.

4. (U) Postsession Protocols

At the conclusion of the session, and after the departure of the subject from the psychoenergetics facility, the monitor once again covered the ice chest, then transported it on the cart back to the Microbial Genetics Laboratory.

(U) The microbiologist removed the nine bacterial cultures from the ice chest and placed them, together with the additional two *extrasession* control cultures, in an incubator (G24 Environmental Incubator Shaker, New Brunswick Scientific Company, Inc., Edison, New Jersey). The bacterial cultures were shielded from visible light by aluminum foil, and grown with gentle shaking (100 rpm) for about 24 hours.

(U) Following the incubation period, testing of the eleven bacterial cultures to determine the extent of mutation induction was initiated. The testing was divided into two parts:

- Quantitation of number of cells plated, which measures the number of plated cells that are able to form colonies (CFU) on medium containing histidine (yeast complete medium).

- Quantitation of mutant cells, which measures the number of cells that are able to grow in the absence of histidine.

(U) The quantitation of CFU was accomplished according to a standardized set of laboratory procedures. First, each of the eleven bacterial cultures (i.e., the cultures contained in the nine-session test tubes plus the two controls) was serially diluted by combining 0.20 ml of the culture with 1.80 ml of sterile saline until an overall million-fold dilution was obtained (10^{-6}). Complete medium plates were then divided into three sections with a marking pen, and a 10-μl aliquot of the 10^{-4}, 10^{-5}, and 10^{-6} dilutions were then delivered in triplicate to the appropriate sections on the plate. The 10-μl spots were allowed to dry on the surface of the solid medium in the plates. The plates were then incubated at 37°C for up to 24 hours

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There was no compelling evidence, however, that subjects are able to interact causally with this particular biological system.

(U) Tables 2 through 8 display the data contained in Table 1 in a subject-by-subject format. One subject (310) produced strong effects in the IDS condition: his low-aim condition was significantly lower than his high-aim condition ($p \leq 0.003$), and his low-aim condition was also significantly lower than the no-aim condition ($p \leq 0.018$).

(U) In addition to the various t-tests, a multiway analysis of variance (ANOVA) was conducted as a second form of analysis (post hoc). Aim (low, no, and high) and condition (IDS and RA) were used as the two "main effects" for the analysis. When the ANOVA examines one "main effect," it sums all the data in the other "main effects." For example, to examine the IDS and RA condition, the ANOVA sums across all aims. Likewise, to examine an aim effect, the ANOVA sums across the IDS and RA conditions. No significance was anticipated in these two dimensions, and none was observed. Significance was observed, however, in the interaction term between the IDS and the RA condition ($p \leq 0.05$), which may indicate that there is some difference between the IDS and RA conditions when examined as a function of aim. This does not imply that IDS or RA is "more significant." It should be noted that the interpretation of the ANOVA interaction term has been traditionally difficult, and Rosenthal has suggested that ANOVA with more than one "main effect" should not be used in the social/psychological sciences.* The analysis has been included here merely for the sake of completeness.

In summary, this experiment has produced a relatively weak, but statistically significant effect, which most readily supports the conclusion that subjects are able to acquire information, psychoenergetically, about the mutation rates of *Salmonella*, but are unable to cause physical perturbations in these bacteria. To reiterate the criteria set forth in the *Introduction*, a physical system will not be considered a candidate intrusion detector unless it registers energetic effects directly (as a result of intentional perturbation), or indirectly (as a result of concomitant acquisition of information). To first order, therefore, it must be concluded on the basis of this one experiment, that the *Salmonella* bacterium does not appear to be a promising intrusion detector.

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*(U) R. Rosenthal and R. Rosnow, *Essentials of Behavioral Research*, p. 254 (McGraw Hill Book Co., New York, 1984).

Table 2

(U) NORMALIZED MUTATION RATES $\times$ 10^{-6}
(Subject 164)

Condition	Aim		
	Low	No	High
Remote Action (RA)	3.00	2.76	3.54
Remote Action (RA)	3.69	2.90	2.59
Remote Action (RA)	3.06	3.09	3.09
Mean	3.25	2.92	3.07
Statistics*	t (Low < No) = −1.430 n.s. t (No < High) = 0.484 n.s. t (Low < High) = −0.475 n.s.		

Condition	Aim		
	Low	No	High
Intuitive Data Sorting (IDS)	2.99	2.89	3.26
Intuitive Data Sorting (IDS)	2.79	3.54	2.93
Intuitive Data Sorting (IDS)	3.57	2.68	2.83
Mean	3.11	3.04	3.01
Statistics*	t (Low < No) = −0.310 n.s. t (No < High) = −0.112 n.s. t (Low < High) = −0.475 n.s.		

* Degrees of freedom = 16.

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_| Given the weak statistical nature of the effect and the potential importance of intrusion detection, replication is recommended for a variety of compelling reasons. First, there are a number of proposed methodological changes to this experiment (as discussed in Chapter V) that would in all likelihood enhance the robustness of the effect. From this perspective, the experiment might legitimately be considered a pilot study. Second, this is the first experiment of its kind that has used *Salmonella* as the target biological system;

Table 3

(U) NORMALIZED MUTATION RATES $\times$ 10^{-6}
(Subject 240)

Condition	Aim		
	Low	No	High
Remote Action (RA)	2.91	3.45	2.87
Remote Action (RA)	3.48	3.09	2.68
Remote Action (RA)	3.45	2.58	3.16
Mean	3.28	3.04	2.90
Statistics*	t (Low < No) = −0.809 n.s. t (No < High) = −0.543 n.s. t (Low < High) = −1.443 n.s.		

Condition	Aim		
	Low	No	High
Intuitive Data Sorting (IDS)	2.59	3.23	3.40
Intuitive Data Sorting (IDS)	3.40	2.87	2.98
Intuitive Data Sorting (IDS)	2.98	3.20	2.92
Mean	2.99	3.10	3.10
Statistics*	t (Low < No) = 0.345 n.s. t (No < High) = −0.004 n.s. t (Low < High) = 0.317 n.s.		

* Degrees of freedom = 16

UNCLASSIFIED

thus, at least one attempt at replication would be appropriate, before any definitive statements could be made regarding the efficacy of *Salmonella* as an intrusion detector. Finally, the statistically significant result in the IDS condition--the informational ability to obtain a desired outcome using intuition--demonstrates the existence of a psychoenergetic ability that has numerous [   ] applications; replications could be designed to further explore and enhance this potentially useful psi talent.

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December 1986

Final Technical Report
Covering the Period 1 July 1986 to 15 November 1986

ENHANCED HUMAN PERFORMANCE
INVESTIGATION (U)

SRI Project 1291

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I INTRODUCTION (U)

A. (U) Overview

❨ In accordance with the requirements set forth under the program, "Enhanced Human Performance Investigations" ⌐ this document provides a progress update for work performed by SRI International and its subcontractors during Fiscal Year 1986. The aim of the five-year program (FY 1986–1990) is to provide research and development in the area of psychoenergetics as a means to enhance human performance

B. (U) Definitions

(U) Psychoenergetic phenomena are defined here as direct interactions between human consciousness and the environment, which, although the mechanism is unexplained, can be observed and recorded. These human capabilities fall into two main categories: (1) the acquisition of information, and (2) the production of physical effects. These can be further defined as

- Remote Viewing (RV)/Extrasensory Perception (ESP)—The ability to gain access, by mental means alone, to concealed data or remote sites.
- Remote Action (RA)/Psychokinesis (PK)—The ability to influence, by mental means alone, physical or biological systems.

C. (U) Program Scope

The program is designed to provide the necessary foundation to assess various aspects of psychoenergetics❨ The program is highly diverse and interdisciplinary; it spans many fields and involves academic and research facilities, subcontractors, and consultants. Furthermore, it initiates an in-depth investigation into the life sciences aspects of psychoenergetic phenomena.

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D.   (U)   **Program Objectives**

(U)   Basically, there are three program objectives: (1) to document that psychoenergetic phenomena are real and reproducible, (2) to determine the mechanism(s) underlying these phenomena, and (3) to bring the field of psychoenergetics into the mainstream of human performance research, by providing a scientific foundation equivalent to the rest of the performance research field.   In the minds of some, there is no doubt that psychoenergetic phenomena are real and reproducible.   In the minds of many others, both scientific professionals and informed lay persons, this is not the case.

The categories of research interest under consideration form a hierarchy ranging from basic research on fundamental mechanisms to methodologies for applications, including

- Identifying explanatory mechanisms (e.g., electromagnetic effects, neurophysiological mechanisms).
- Specifying phenomenological properties (e.g., the effects of distance and shielding).
- Determining physical, physiological, and psychological correlates (e.g., geophysical environment, EEG and GSR measures, and personality profiling).
- Developing optimal strategies for use in applications (e.g., statistical averaging).

E.   (U)   **Program Resources**

(U)   To meet the above objectives, the SRI program is using both in-house and external expertise.   For over a decade, a core group of researchers at SRI has been studying a wide variety of subjects in psychoenergetics--augmented by access to specialty centers such as our neurosciences and our microbial genetics laboratories.

(U)   Some of the work is being subcontracted to institutions, groups, and consultants who have a demonstrated track record in this research area.   Other subcontractors may have had no association with this field but, because of their specific area of expertise, can make valuable contributions to our program goals.   Thus, the widest possible interdisciplinary viewpoints are available to the program, and the mixture of resources will ensure that peer group review and scientific interactions are maximized.   Subcontractors and consultants currently include personnel from Princeton University, Syracuse University, John F. Kennedy University, the Palo Alto Medical Clinic, MARS Measurements Associates, the Parapsychology

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III PROBLEM AREAS (U)

As a result of the SOC comments at the commencement of the FY 1986 program, substantial criticism was directed toward the Time Research Institute (TRI) subcontract. An extensive review of TRI's proposed Statement of Work, facilities, techniques, and qualifications was subsequently carried out by SRI, and three major problem areas were revealed: (1) tenuous overall scientific justification for pursuing this area of investigation; (2) inaccurate measurement techniques employed by TRI; and (3) questionable statistical approaches proposed by TRI for data analysis.

As a result of this review, the decision was made to terminate TRI's subcontract. This termination was effective 19 May 1986. At the time of the termination, approximately $25,000 remained in this subcontract. TRI has provided an initial estimate of approximately $9,800 in termination expenses. According to   , however, TRI has until one year after the termination date to formalize its claims. In addition, a determination must be made as to the disposition of the equipment purchased by the subcontractor under the present contract and the one immediately preceding. Therefore, a final settlement on the TRI subcontract is still pending.

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4. (U) Objective A, Task 4--Gross Physiological Correlates to RV

One of the persistent problems in deploying RV _____ is the lack of an *a priori* method for assessing the quality of a particular RV session. The present exploratory investigation was an attempt to discover whether external physiological cues could be used to discriminate accurate from inaccurate sessions.

(U) In an exploratory attempt to learn more about this aspect of the RV process, 20 RV sessions, comprising the output of one subject from a separate experiment, were videotaped and analyzed by a behavioral psychologist to discover if accurate sessions could be blindly separated from inaccurate sessions by gross external physiological changes which occurred during the RV session. Behaviors defined and coded included latency to first response, head movements, hand gestures, and interactive and descriptive verbalizations. Frequency counts of each behavior were made and correlated with a measure of the quality of the RV.

(U) Unfortunately for this analysis, the measure of RV quality showed no significant RV function. Thus, correlation between RV quality and the behaviors rated could not be expected to show a significant relationship. Results matched this expectation; there were no significant correlations between the measure of RV quality and the behaviors noted. There was a non-significant trend in the positive direction for latency to first response which is similar to the measurement of latency from stimulus to response time measured in another pilot experiment (see Task F-3). It should also be noted that two behaviors of particular interest, namely eye movement and facial expression, were not analyzed in this study because facial expression was considered too subjective without multiple observers while the quality of the video recordings did not permit accurate observation of eye movement.

(U) In conclusion, this study does not rule out the possibility that external physiological cues may give important clues to the quality of RV. It would be necessary to conduct a similar study with a sample of known high-quality remote viewing.

5. (U) Objective B, Task 1--Resource Library

(U) The Parapsychology Sources of Information Center (PSIC, Rhea A. White, Director) has completed two years of a multi-year effort intended to provide and maintain an extensive data base facility for parapsychological literature, described in a separate report. The overall goal is to have the data base, called PsiLine, include bibliographic information and abstracts of the entire literature of parapsychology and related disciplines. During the first year of a multi-year effort, PSIC purchased the necessary hardware and software, and then

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13. (U) Objective F, Task 1--Fundamental Parameters of RV

, Two different precognition experiments were conducted during FY 1987. The first of these involved a well-calibrated viewer (Viewer 372) and used natural Bay Area sites as targets. Ten real-time and ten precognitive trials (counterbalanced) yielded no statistical evidence for remote viewing. In the second experiment, 4 viewers contributed approximately 30 trials each in a similar counterbalanced real-time versus precognition protocol. In this experiment, however, the target material was photographs from a national magazine. No statistical evidence for remote viewing was observed in this experiment. In a third experiment designed to explore the role of feedback upon remote viewing quality, two of four viewers produced independently highly significant evidence for remote viewing. There was no correlation between the quality of RV and the intensity of the feedback for either of the significant viewers. These data do not generally support the precognition model. To confirm this, we must examine the validity of the assumption that the actual feedback is related to the consciously perceived feedback. In other words, we question what constituted "enough" feedback to saturate the RV signal.

14. (U) Objective F, Task 2--Video Disk Training Technology

(U) The FY 1987 effort was aimed at developing a technology for enhancing the acquisition of remote viewing skills. One important factor in the development of a new skill is the ability to practice the skill under conditions similar to a test situation. Until now, practice was a time-consuming effort that required the services of a monitor and an assistant in order to ensure a double-blind protocol. With the advent of video disk technology coupled with the random number capability of a personal computer, it has become possible to develop the capacity to do multiple RV sessions at a single sitting as well as work on specific target features with the ease and timeliness of a forced choice task.

(U) Assembling the components of the system involved the purchase of a video camera, a video disk recorder, and a MacIntosh computer. The heart of the system is the video disk recorder, a specialized machine making possible the recording of both static and dynamic targets from a variety of video inputs. Access to any target is on the order of one-half second. Each 10-inch disk can store 24,000 still targets or up to 15 minutes of a motion target.

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(3) Cost effectiveness, i.e., individual subject session times should be kept manageably brief to facilitate rapid turnover; this approach would also tend to sustain the subject's interest in the task, thereby maximizing the potential for success in the screening process.

(U) A preliminary survey of the extant technology for attaining these objectives indicates that the most feasible option would include a video camera, a video disk recorder, a video monitor, and a MacIntosh computer. The video camera would be used to photograph a variety of target materials for frame–by–frame inclusion on the video disk. Random access to the target photographs would be computer–controlled and therefore very rapid––i.e., on the order of 0.5–second display time. The disk, monitor, and computer would comprise the equipment actually deployed to the screening site. Overall, this equipment is relatively inexpensive, portable, and durable.

c. (U) Target Selection

A wide variety of target materials should be incorporated onto the disk to exercise the full potential range of the subject's abilities. Candidate target materials would include photographs drawn from the following categories: (1) natural scenes, (2) alphanumerics, (3) technical sites   , (4) Zener cards, and (5) the Maimonides target set. A selection of dynamic (i.e., moving video) targets has also been suggested.* A small subset of approximately five targets would be selected from each category for inclusion on the disk: this would tend to minimize the potential for deviation from prescribed screening procedures; it would also enable greater standardization for RV performance across the screened population.

d. (U) Subject Populations

(U) Judicious selection of candidate subject populations is recommended over the less–efficient and more labor–intensive "shotgun" approach. One possible guideline, which has been derived primarily from the observations of RV monitors, is that a certain richness of the subject's vocabulary may be important for a comprehensive debrief of the RV signal. This would

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* (U) This is not intended to be a comprehensive list of target categories: some may be deleted or others may be added as the mass screening protocol is developed, deployed, and refined. The same caveat applies to other research items mentioned in this discussion.

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tend to imply that subjects should be sought out from groups that have members with superior verbal abilities.

(U) Other candidate populations might include groups whose members exhibit superior skills in drawing, draftsmanship, or other visual abilities. This approach is suggested because pictorial representation is another rich modality for debriefing the RV signal.

A third approach might center on drawing from populations whose members excel at pattern recognition or in the ability to discern a tenuous signal line in a noisy background.

Also subsumed under this category are groups whose members show an aptitude for institutional decision-making--i.e., what might be referred to in the vernacular as "playing hunches." Such groups might include, for example, police detectives, businessmen who make consistently correct decisions in risky or problematical ventures, or individuals with a special proclivity for locating oil.

(U) These are but a representative few of the kinds of populations that might be targeted for screening initially. It is anticipated that other promising populations will emerge empirically as the screening system is deployed on a pilot basis.

e. (U) Methodology and Deployment

(U) Research issues pertaining to screening methodology and deployment fall into two principal categories: (1) manipulation of *intra*-session variables for arriving at the most meaningful and efficient screening procedure, and (2) standardization of *inter*-session guidelines for deploying that procedure in a variety of settings. The first area focuses primarily on the most profitable use of the hardware, while the second area emphasizes standardization across screening sessions.

(U) Primary research issues concerning the design of the optimal screening package include (1) determination of feedback conditions (e.g., whether there should be a "no feedback" target in each screening session), (2) identification of the optimal number of targets per session and their randomization (e.g., whether targets should be presented on a gradient of complexity, or whether they should be randomly selected), and (3) determination of the analysis techniques to be employed (e.g., forced-choice guess by the subject versus detailed verbal and

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visual assessment by an independent analyst). Recent developments in the uses of fuzzy set theory and cluster analysis show promise for affording "on-line" analysis of RV on *National Geographic* Magazine targets.

(U) In the second major area of investigation, several preliminary guidelines have emerged with respect to optimizing *inter*-session standardization. First, screening settings must be chosen with the aim of mitigating a subject's performance anxiety: a one-on-one private or semi-private session with a trained monitor is indicated. Second, a series of general instructions must be devised that serve to inform the naive subject as to what the RV task entails. These instructions must be specific enough to elicit RV performance without biasing the subject towards any particular RV technology. Third, monitors must be thoroughly conversant with a standard set of screening procedures, in order to minimize idiosyncratic variability in such areas as feedback to the subject. Monitors may be required, for example, to memorize *scripts* that dictate the nature of subject/monitor interactions for each target. Scripts might also serve the function of providing the framework for the systematic elicitation of RV data along a number of predetermined dimensions—e.g., visual, conceptual, functional, depending on the nature of the target material. Fourth, a standardized questionnaire must be devised to address psychological parameters. It would include a section for standard biographical data and a section for questions drawn from the MBTI and the Psychophysical Research Laboratory's PIF. The purpose of the form would be to investigate, across a large population, whether psychological self-report correlates with RV ability. If such correlations were obtained, then the questionnaire might profitably be used as an initial pre-screening device.

(U) All of the research issues presented in this discussion will be most profitably determined and refined from actually using the system. If possible, the optimal approach would entail successive pilot deployments of the screening device in a variety of settings.

20. (U) Objective F, Task 8—Host Physiology Conference

⏴ __ , On 28 July 1987, SRI International hosted a ⏵ physiology conference. In attendance were D. Arthur, Ph.D., and E. Flynn, Ph.D from Los Alamos National Laboratory; S. Kornguth, Ph.D. from the Neurology Department of the University of Wisconsin; R. Murray, M.D., Chairman, the Department of Medicine, Michigan State University; R. Dickhaut, Spectra Research Institute; M. Hecker, Ph.D., SRI International,

T. Piantanida, Ph.D., SRI International, E. May, Ph.D., SRI International;

The goal of the conference was to determine the proper direction for investigating possible correlates to psychoenergetic functioning, and to recommend specific experiments to search for correlates. The primary emphasis was on neurophysiology. Attendee comments are available upon request.

After an overview of the Enhanced Human Performance Investigation project by May, the discussions centered upon metabolic measurements (PET) and possible physiological indicators of psychoenergetic functioning with visual evoked response.

Other topics that were discussed were other possible physiological areas of investigation, including technical voice analysis. It was generally decided, however, that except for PET, and certain button-pressing experiments, physiological correlates to the subtle forms of psychoenergetic functioning would be difficult to find.

As a direct result of the conference, the Los Alamos group will use visual evoked response techniques with the MEG to replicate earlier successful experiments demonstrating physiological responses to a remote stimulus.

(U) A number of the participants responded to the conference in letter form. These letters are contained in Appendix B.

21. (U) Objective F, Task 9--Neuropsychological Assessment

(U) During FY 1986 exploratory work was begun to attempt the discovery of neuropsychological correlates of psychoenergetic function. As part of that effort, Dr. Ralph Kiernan of the Stanford Medical School developed a battery of tests designed to test the function of the frontal lobes which he hypothesized to be involved in psychoenergetic function. As a follow-on to his theoretical formulation and hypothesis generation, Dr. Kiernan tested 37 subjects who had participated in previous RV and Search/Dowsing studies. His test battery was composed mainly of scales from Guilford's measure of intelligence, and scales were combined to give a score for productive ideation, a component directly related to positive frontal function.

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placed it on a small empty table, and then rang a bell into the telephone, signaling to the viewer to perceive the target. The viewer than declared "yes," "no," or "?" and gave his response; he then received immediate feedback from the experimenter. For every trial, the experimenter made a written record of the possible targets, actual target, declared condition, and viewer response, as well as date and time of the trial.

(U) The hypothesis being tested was whether Viewer 002 is able to recognize "contact" with the target. If this hypothesis is true, we would expect above-chance, below-chance, and chance results in the "yes," "no," and "?" conditions, respectively. The reason that we would expect below-chance results in the "no" condition is that psychoenergetic functioning is required by the viewer if he "knows" that he is not in contact with the target. In other words, the viewer is willing to declare that he is likely to be wrong.

The trials took place at approximately the same time every day between January 5 and February 20, 1987, with a varying number of trials per day. Of 147 trials in the "yes" condition, 88 were hits, where 74 would be expected by chance. Of 59 trials in the "no" condition, 23 were hits, where 30 would be expected by chance. Of the 121 trials in the "?" condition, 66 were hits, where 61 would be expected by chance. The p-values for these three conditions are 0.01, 0.05, and 0.23, respectively. From p-values alone, it appears that the hypothesis is supported. The trend in the psychological sciences is to use some measure of "effect size" in conjunction with p-values. The reason is that p-values are sample-size dependent and, therefore, may mask important results. The "effect size" for the three conditions is 0.20, 0.21, and 0.09, respectively. This result indicates that the equivalent amount of psychoenergetic functioning was used by Viewer 002 to determine his degree of contact with the target. We are encouraged by this result because it represents a modest success toward the goal of recognizing the source of "noise" in forced-choice experiments.

(U) During the second half of FY 1987, we conducted another series of trials of the forced-choice format, using the same protocol as described above but with slightly different conditions and testing a slightly different hypothesis. These trials took place from 23 February through 21 September 1987, a total of 82 sessions (one session per day at approximately the same time every day), with a varying number of trials per session. Before each session the viewer declared how he felt, and he assessed how successfully he would contact the targets in the coming

In FY 1987, an experiment was conducted which successfully replicated this finding. Of eight participants (six experienced and two novices), one scored significantly in the space condition, and none in the time condition. However, the two subjects who scored the best in the space condition had previously been successful in that condition, and the subject who scored best in the time condition had previously been successful in that condition. This suggests that participants are likely to consistently do well in one condition or the other, but not both.

Since this is the third successful laboratory replication of this experiment, it suggests that this technique for finding a hidden target may be robust enough to use in applications for which such information is needed, such as locating a kidnap victim. The best subject in the FY 1987 experiment showed a reduction in the area that would need to be searched in 72% of the trials in the space condition, with an average reduction in area of 33%. Previous experiments showed even greater reductions. In real-world applications, this could represent a substantial savings in resources.

(U) A second search experiment was conducted in FY 1987 to see if self-proclaimed dowsers could find a lost ship by searching a grid overlaid on a map. The object of the search was a sunken Spanish galleon called The Atocha, which was actually found in 1985. The experiment was preceded by a real-world search in which one of the participants successfully located another sunken ship by choosing the correct locations on an unmarked grid. Accompanied by SRI personnel, the participant was in a vessel anchored over the site of the wreck at the time of the experiment. The Atocha experiment was carried out with two sets of 25 trials for each of five participants, but failed to produce a single significant result.

25. (U) Objective H, Task 1—RA Effects on Single Alpha Particles

(U) Due to unforeseen circumstances, the alpha particle experiment never reached a point where it was stable enough to collect data from human participants. After careful consideration of the cost to continue and the results of the other RA experiments for FY 1987, it was decided to stop work on this task. What follows is an engineering summary of the state of the system at close-out.

(U) During FY 1987, SRI developed a novel, position-sensitive system to detect alpha particles. In order to reduce the cost and complexity of the system, we elected to employ

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32. (U) FY 1986 Objective E, Task 1--PMT Final

We conducted a replication of work published in FY 1984 in which we experimentally examined the possibility that light is emitted in the vicinity of correctly identified remote viewing target material. In that earlier experiment, a state-of-the-art, ambient temperature, photon-counting system was used to monitor the target material (35-mm slides of *National Geographic* photographs). The statistical measure derived from the photon counting apparatus in that study showed a significant positive correlation with the RV results ($p \leq 0.035$). That is, when the remote viewing was good, there was an increase in the signal detected by the photon-counting system. In addition, we observed two anomalous pulses having a signal-to-noise ratio of about 20 or 40:1. In the present experiment (FY 1987), we improved all hardware aspects of the previous work, substantially reducing the background noise level and improving shielding against artifact. In addition, analysis of the remote viewing indicates that three out of the four viewers produced independently significant results.

Our analysis of the PMT data shows no evidence of any anomalous high-count-rate pulses, no evidence of any effect on the PMT output during the RV session, and no evidence of any significant correlation between RV performance and PMT output. We conclude that (1) the effect proposed by the Chinese is artifactual in nature, and (2) suggest that the significant correlation observed in our 1984 study is either a statistical anomaly or the result of Intuitive Data Sorting on the part of the experimenters.

33. (U) Objective J, Task 1--Administrative Support

(U) There are no deliverables required for this Task.

34. (U) Objective J, Task 2--Publications

(U) There are no deliverables required for this Task.

35. (U) Objective J, Task 3--Computer Hardware/Software Maintenance

(U) SRI has negotiated a contract with Sun Microsystems that offers software maintenance and support coverage at a greatly reduced rate to all Sun users at SRI. The overall

Final Technical Report
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ENHANCED HUMAN PERFORMANCE

INVESTIGATION (U)

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I INTRODUCTION (U)

A.   (U) Overview

In accordance with the requirements set forth under the program "Enhanced Human Performance Investigations"   , this document provides a progress update for work performed by SRI International during Fiscal Year (FY) 1988. The aim of the five-year program (FY 1986-1990) is to provide research and development in the area of psychoenergetics as a means for enhancing human performance

B.   (U) Definition

(U) Psychoenergetic phenomena are defined here as direct interactions between human consciousness and the environment which can be observed and recorded although the mechanism is unexplained. These human capabilities fall into two main categories: (1) the acquisition of information, and (2) the production of physical effects. These can be further defined as:

- Remote Viewing (RV)/Extrasensory Perception (ESP) – The ability to gain access, by mental means alone, to concealed data or remote sites.

- Remote Action (RA)/Psychokinesis (PK) – The ability to influence, by mental means alone, physical or biological systems.

C.   (U) Program Scope

This program is designed to provide the necessary foundation to assess various aspects of psychoenergetics   . The program is highly diverse and interdisciplinary; it spans many fields and research facilities, personnel, and consultants. Furthermore, it initiated an in-depth investigation into the neurophysiological aspects of psychoenergetic phenomena.

D.   (U) Program Objectives

The program has four basic objectives: (1) to document that psychoenergetic phenomena are real and reproducible; (2) to determine the mechanism(s) underlying these

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phenomena; (3) to develop practical applications and (4) to bring the field of psychoenergetics into the mainstream of human performance research, by providing a scientific foundation equivalent to that of the rest of the performance research field. In the minds of some, there is no doubt that psychoenergetic phenomena are real and reproducible. In the minds of many others, both scientific professionals and informed lay persons, this is not the case.

E.   (U) Program Resources

(U) To meet the above objectives, the SRI program uses both in-house and external expertise. For over a decade, a core group of researchers at SRI has been studying a wide variety of subjects in psychoenergetics—augmented by access to centers that specialize in related topics.

(U) Some of the work is subcontracted to institutions and consultants who have a demonstrated track record in this research area. Other subcontractors may have had no association with this field but, because of their specific area of expertise, can make valuable contributions to our program goals. Thus, the widest possible interdisciplinary viewpoints are available to the program, and the mixture of resources ensures that peer group review and scientific interactions are maximized. Subcontractors and consultants currently include personnel from Psychophysical Research Laboratories and Los Alamos National Laboratory (LANL),* plus consultants having expertise in specific areas of interest to the program.

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*   (U) The project does not have a technical subcontract with LANL for administrative reasons only. The sponsor has let a separate contract that is technically supervised by SRI.

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C.   (U) Progress to Date for Each Objective/Task

(U) The progress to date for each Objective and Task in the Statement of Work is described below.

1.   (U) Objective A, Task 1--Statistical Protocols and Research Design

(U) In June, we sent four separate protocols to the Scientific Oversight Committee (SOC) for review. They were:

(1) An RV experiment to be conducted at Los Alamos National Laboratory.

(2) A hypnosis experiment to be conducted at SRI.

(3) A mass screening procedure.

(4) A neurophysiological investigation using magnetoelectroencephalography techniques.

Because we did not receive any comments back from the SOC on these protocols, we proceeded with the various experiments as stated.

2.   (U) Objective A, Task 2--Access to Ongoing Experiments

(U) During the year, three members of the SOC, Dr. M. Wartell, Dr. B. Skyrms, and Dr. R. Morris, paid site visits.

3.   (U) Objective A, Task 3--Critical Review.

(U) In order to review the year's work, SRI International hosted a two-day conference for the SOC on November 3 and 4, 1988. Their comments and SRI's responses can be found in the Appendix.

4.   (U) Objective B, Task 1--Identify New and "Excellent" Remote Viewers

(U) During FY 1988, SRI screened a total of 196 individuals from SRI, , the U.S. Geological Survey, and the Society for Scientific Exploration for remote viewing ability. The video disk technology and protocol that were developed during FY 1987 were used in this effort.

Of the 196 individuals who participated in the first-level screening, 16 were selected for a second-stage screening that involved 8 trials under SRI's normal remote viewing protocol. Of these, 2 produced excellent results and have subsequently been invited to join the research effort as part-time viewers.

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5.   (U) Objective C, Task 1—Obtain Successful Replications Of RV

(U) This task was abandoned by agreement with the sponsor in order to focus more attention on Objective D, Task 1.

6.   (U) Objective D, Task 1—Determine Physiological Indicators Of RV

(U) A contract was let to Los Alamos National Laboratory in order to determine whether there are neurophysiological indicators of remote viewing. Two protocols were designed that represented replications of earlier work. One was a remote–conditioning design where a viewer received a direct stimulus (light) after a remote light had flashed. The second was a replication of earlier SRI work in which it was found that one individual exhibited significant alpha blocking as the result of a remote stimulus (light).

Six individuals participated in experiments conducted at Los Alamos. Some of them exhibited a response to a remote stimulus approximately 100 ms after the onset of the stimulus. Given the shielding environment, it remains possible that the central nervous systems of these individuals are sensitive to high–frequency electromagnetic radiation. High–frequency radiation should be shielded in any further investigations.

All of the three individuals who participated in the SRI replication attempt demonstrated significant changes in alpha power across the remote stimulus boundary.

7.   (U) Objective E, Tasks 1 and 2—Determine The Effects Of Robust Feedback On RV Quality

(U) We have used the data from the second–level screening screening task (Objective B, Task 1) to examine the role of robust feedback on RV performance.

The data from 85 second–level screening remote viewings were used in the analysis. One of the target categories, Natural, showed a significant tendency over the other categories [   ] Science/Industrial, and Projects) to produce better remote viewing. One single target in the Projects category (Deep Quest—an underwater scene and submersible) also showed a significant tendency to be "visible."

We have examined the possibility that such results could arise because of a judging preference for more interesting targets. In one case, there was bias against one of the less interesting targets, but judging biases are unable to account for the target preferences. As was found in other laboratories, it appears that moving targets with complete (video and audio) feedback provide the best RV targets, static images with no audio feedback the worst.

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8. (U) Objective E, Task 3--Determine The Effects Of Hypnosis On RV Quality

(U) During FY 1987, we found that significant remote viewing was observed after a hypnotic recall of an earlier viewing against the same target. In FY 1988, remote viewing sessions were conducted while the viewers remained in trance. The idea was to determine if factors that lead to noise in the response could be reduced or eliminated using hypnosis.

Two viewers (one experienced and one not) participated in the experiment. The results failed to meet statistical significance, and the qualitative assessment of the viewings was in agreement with the statistical result. We conclude that conducting remote viewing experiments with the viewers in trance does not decrease or eliminate the confounding noise.

9. (U) Objective E, Task 4--Determine The Source Of "Mental Noise" In Binary Psychoenergetic Tasks

During the FY 1986 effort we conducted a formal series of 50 binary trials using a forced-choice protocol. One selected viewer (V002) produced a hitting rate of 64% ($p \leq 0.033$) and an effect size of $r = 0.26$. These data were collected after a number of exploratory trials that were conducted earlier in that year, but this formal result was declared to be a fiducial point (i.e., relative baseline) with which to measure any future progress.

During FY 1987, 327 binary trials were conducted to see if V002 could sense if he were in psychoenergetic contact with the intended target, and 1341 trials were conducted to if V002 could predict in advance his hitting rate. V002 was unable to accomplish the latter task, but but he was able to sense contact with the target in the former task. The effect sizes (i.e., a measure of psychoenergetic magnitude) that were observed for the in-contact and not-in-contact conditions were identical ($r = 0.2$), while for the uncertain case chance hitting was observed ($r = 0.09$).

During FY 1988, 477 binary trials were conducted with the same viewer, in order to determine (subjectively) the source of mental noise in binary remote viewing. The excess hitting rate involved periods of growth followed by periods of consolidation. One period (68 trials) showed a marked decline. This was the only period during which V002 attempted a large number of trials at one sitting. V002's hitting rate (computed in trial increments) showed a strong, but not significant, increase. According to V002's subjective impression of his own internal mental processes, the sources of noise include (but are not limited to) beliefs about the target, imagination, and comparison with past experiences.

At the end of FY 1988, V002 participated in another formal series of 50 trials each. He produced a hitting rate of 76% ($p \leq 1.53 \times 10^{-4}$) for an effect size of 0.51.

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Assuming that the fiducial value of 64% hitting rate was the true rate in FY 1986, then the FY 1988 result is significantly greater (p $\leq$ 0.038).

Given that there was a significant enhancement in hitting rate during the formal trials, and that in FY 1988 there was a strong improvement in hitting rate during the exploratory phase, it is possible, then, to conclude that some of the sources of noise found by V002 might be valid. Although it is unlikely (because of the decline effect) that practice can account for the improvement, we are unable to rule it out with the current protocol. The challenge for future research is to develop a protocol to test specific sources of noise.

10. (U) Objective F, Task 1--Determine Appropriate Parameters For Fuzzy Set RV Analysis

, All of the remote viewings conducted during FY 1987 that used *National Geographic* magazine have been reanalyzed during FY 1988. The analysis of these data used a subjective rank-order technique. For each RV response, the intended target and 6 decoys were ranked in order from most to least correspondence. The combined average sum-of-ranks was 3.781 where the expected average was 4.00 (z = 1.87; p $\leq$ 0.031). Thus, even including the real-time versus precognition experiment which failed to reach independent statistical significance, the total RV effort for FY 1987 showed statistical evidence for remote viewing.

(U) One of the most pressing problems in remote viewing is to determine the quantitative amount of information that is transferred. Before any basic physics model of remote viewing can be developed, it is critical to know the amount of information. There have been a number of attempts to quantify the information content in natural scenes in the past, but none of them appeared to work as a description of even that target portion of the remote viewing. It is an even more difficult problem to codify the information content in natural language (i.e, the response).

(U) A number of attempts were made during FY 1988 to use various entropy encodings in order to discover what is required for more precise determinations. None of the attempts produced satisfactory results. We speculate that there may by a fundamental limit to information encoding of an RV experiment. The limit arises in that is appears impossible to tell whether a particular target element is sensed by RV techniques or is simply due to a natural bias on the part of the viewer. It may be possible, however, to construct an information encoding based on a measure of average response bias. Much more work is needed before an accurate encoding is possible.

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Final Report
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I.   (U) Objective

(U) The objective of this program was to provide an overview of the current psychoenergetics research and, based upon this assessment, to recommend avenues of approach for future investigations.

II.   (U) Background

(U) Psychoenergetic research can be divided into two major areas of interest:

(1) Informational Processes

(2) Causal Processes.

Each of these areas can be subdivided further into training, screening, and fundamentals such as various type of functional correlates (e.g., psychological, physiological, and physical).

       During FY 1985, SRI International completed a retrospective analysis of a substantial body of open and classified literature in order to assess existence issues, research questions and potential applications of the previously reported activity in these areas. Subsequently, part of this analysis produced two reports that outlined an improved remote viewing analysis technique and provided a meta-analysis of the random number generator literature. (These two reports are included as Appendix A and B, respectively.) What follows are the recommendations, for a three-phase multi-year research effort.

III.   (U) Recommendation

A.   (U) Phase I—Knowledge Building

(U) Phase I is considered to be a knowledge building effort. During this phase, SRI recommends that some form of technical oversight be included in order to provide guidelines on research protocols, to assess the credibility of the research, and to provide insight into new directions for future research. This phase should be as wide in scope as resources allow. More focused research should be delayed until a knowledge base is established. Table 1 shows the specific areas that are recommended for consideration as research items for Phase I.

1

Table 1
(U) PHASE I RECOMMENDED RESEARCH AREAS

Topic	Description
Informational Processes	
Analysis	A quantitative remote viewing (RV) analysis technique.
Training	Novice and advanced RV training methodologies.
Screening	Techniques to identify good remote viewers.
Physical Correlates	A search for RV correlates to the physical environment.
Personality Correlates	A search for personality traits in good remote viewers.
Physiological Correlates	A search for physiological correlates to RV.
Medical Correlates	Monitor medical conditions of all viewers.
Feedback	Determine the role of feedback in RV experiments.
Spatial Search	Determine if items can be located in space.
Temporal Search	Determine if events can located in time.
Causal Processes	
Micro-remote Action	Remote action (RA) on random number generators.
Intuitive Data Sorting	Test the Intuitive Data Sorting Model.
Macro-remote Action	Test a variety of physical systems as RA targets.
Correlates	As above, determine correlates to RA.
General	
Information Services	Develop a user-accessible library system.

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(U) While some of the items shown in Table 1 can be considered beyond existence issues and thus should be considered during Phase II, the predominant effort is toward knowledge building.

B.   (U) Phase II—Development

(U) During Phase II, research areas from the Phase I effort that yielded incontrovertible evidence for their existence, will be expanded.   With the assistance of a technical oversight committee, hypotheses will formulated and tested.

Those areas under Phase I that showed the most promise, will be expanded toward a potential application area. For example, if a physiological measure could be found that correlated strongly with excellent remote viewing, then that measure could be used to improve applications.

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C. (U) Phase III—Applications

While continuing Phases I and II on specific items of interest, Phase III will be devoted toward applications.

· This activity should include at least two parts:

(1) Applications research—Formulate and test hypotheses that are specific with regard to potential applications.

(2) Application testing—Under actual conditions, conduct psychoenergetic activity to assess field utility.

IV. Financial Report

During FY 1985 a total of $1,240 K was allocated to contract for the psychoenergetic investigation and review. All moneys were expended in accomplishing the stated objective.

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Final Report—Objective E, Tasks 1 and 2
Covering the Period 1 October 1987 to 30 September 1988

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FEEDBACK AND TARGET DEPENDENCIES IN REMOTE VIEWING EXPERIMENTS (U)

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I INTRODUCTION (U)

(U) One of the intriguing questions about remote viewing (RV) and similar kinds of experiments is the extent to which feedback influences the results. For example, in FY 1987 SRI International conducted an experiment which showed that subject performance did not seem to be dependent on the intensity of the feedback provided.[*] The feedback intensities in that experiment, however, were all minimal and did not allow for detailed study of the target.

(U) In FY 1988 we created a new target pool. This pool is contained on video disks and consists of short movie segments, natural scenes, and other composite target material. Some of the targets have no sound; some contain music only but no words; and some have complete conversations. Thus, various targets differ in both visual and audio complexity.

(U) In all of the experiments for which this target pool has been used, the subjects have been given feedback by viewing the video disk segment selected as the target. For all of the experiments covered in this report, feedback was vivid in the sense that the subjects could view the target segment as many times as desired.

(U) The purpose of the task covered by this report was to see if the quality of these remote viewings (as measured by rank–order judging) differed based on an amalgam of target type and feedback complexity. Because the target pool was not constructed specifically with this task in mind, we were unable to differentiate between the effects of target type and feedback complexity.[†]

⌐‾‾‾⌐ We examined the ranks assigned by judges when each video disk segment was the intended target, compared with the ranks assigned when that segment was not the intended target. We found that the targets in the "natural" category, which were more homogeneous than the other targets, tended to result in better remote viewings. Further, of the individual targets, one resulted in a significant sum of ranks. That particular target did not receive higher than

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[*] (U) May, E. C. and Lantz, N. D., "Feedback and Precognition Dependent Remote Viewing Experiments (U)," Final Report, Objective F, Tasks 1a and 1b, Project 1291, SRI International, Menlo Park, California (December 1987)

[†] (U) This report constitutes the deliverable for Objective E, Tasks 1 and 2. Due to project priorities, separate experiments were not performed for these Objectives.

1

chance ranks when it was not the intended target, so the result is not due to bias on the part of the judge.

The series of remote viewings was not significant overall, but the significant findings in the previous paragraph allow us to make some tentative conclusions (Section IV). In addition, many of the subjects in this experiment were novices who were being tested to see whether or not they had any special abilities. Therefore, the trends observed in this report may be enhanced when working with subjects who are able to produce higher quality remote viewings overall.

III RESULTS (U)

(U) The remote viewing trials were scored by assigning ranks to the actual target and the three other possible targets within the same category. For example, if the intended target was the Greek temple, then the response would be compared with the four targets in the natural category and a rank would be assigned to each one. For the analysis in this report, the Greek temple would be designated as the intended target, and the other three natural targets would be designated as unintended targets.

|Table 1 shows the distribution of ranks that were assigned to the intended target by an RV analyst. For example, the aircraft–carrier–takeoff target in the military category was randomly chosen as the intended target 5 times. It was ranked first 2 times, and it was ranked second, third and fourth once each. Table 2 shows similar data, but for the unintended targets. Suppose that the Greek Temple is the intended target; then for that trial, the ostriches, skiing, and waterfall targets are unintended. Thus, for each trial in the series there is one entry in Table 1, and there are three entries in Table 2. There are a total of 85 remote viewings represented.

| The most interesting result is that the sum of ranks for the trials in the natural category is independently significant. Out of 16 trials, the sum of ranks is 32, p = 0.046. For the other three categories, the rank sums are nonsignificant. For the projects, military and science/industrial categories the (sum of ranks, number of trials, p–value) are (70, 28, 0.53), (46, 19, 0.42), and (56, 22, 0.43), respectively. Thus, it appears that the targets that were the most homogeneous and were set to music with few or no words were the easiest to remote view and/or to match correctly in judging.

The only individual target for which the sum of ranks was significant is Project Deep Quest (8 trials, sum of ranks = 12, p = 0.007). This is the only target in the projects category that has a dynamic segment; the others consist of a series of still photographs. Also, the main theme of this target is water. We were concerned that the significance might be due to a bias toward choosing this target on the part of the judge, whether or not it was the intended target. To check this, we computed the rank sum for Project Deep Quest when it was the unintended target. The sum was 46, for 20 trials, p = 0.24, so the bias hypothesis can not explain the significant result.

5

In contrast, judges did appear to be biased against Project Ultra. Out of the 28 times it was included in either table, it was ranked last place 16 times, including 5 of the 10 times it was the intended target and 11 of the 18 times it was the unintended target. This target is quite different from Project Deep Quest because the theme is unclear even after observing the target, unless one is already familiar with Project Ultra.

Table 1

(U) RANKINGS FOR INTENDED TARGETS

Category	Rank 1	Rank 2	Rank 3	Rank 4
Projects				
Manhattan Project	1	1	1	1
Project Blue Book	2	1	0	3
Project Deep Quest	5	2	1	0
Project Ultra	1	1	3	5
Totals	9	5	5	9
Military				
Aircraft Carrier Takeoff	2	1	1	1
Atomic Blasts	2	1	2	1
Control Room	0	0	3	0
Russians in Space	0	3	2	0
Totals	4	5	8	2
Natural				
Greek Temple	2	1	1	0
Ostriches	2	0	4	0
Skiing	1	0	0	0
Waterfall	2	2	0	1
Totals	7	3	5	1
Science/Industrial				
Bottling Factory	0	2	3	1
Building Construction	4	2	1	0
John Glenn Launch	3	0	0	2
Tacoma Narrows Bridge	0	0	3	1
Totals	7	4	7	4

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Table 2

(U) RANKINGS FOR UNINTENDED TARGETS

Category	Rank 1	Rank 2	Rank 3	Rank 4
Projects				
Manhattan Project	7	9	6	2
Project Blue Book	7	5	7	3
Project Deep Quest	5	7	5	3
Project Ultra	0	3	4	11
Totals	19	24	22	19
Military				
Aircraft Carrier Takeoff	5	5	2	2
Atomic Blasts	3	2	2	6
Control Room	3	3	1	9
Russians in Space	4	4	6	0
Totals	15	14	11	17
Natural				
Greek Temple	1	1	1	9
Ostriches	1	1	5	3
Skiing	7	4	2	2
Waterfall	0	7	3	1
Totals	9	13	11	15
Science/Industrial				
Bottling Factory	3	4	4	5
Building Construction	5	4	2	4
John Glenn Launch	3	5	2	7
Tacoma Narrows Bridge	4	5	7	2
Totals	15	18	15	18

IV CONCLUSIONS (U)

The results of this analysis are intriguing, since they suggest that the complexity of the target and/or the feedback may affect the quality of the results. The natural targets, the only group to achieve a significant sum of ranks, differed from the others in a few respects. First, they tended to be more homogeneous visually than the targets in the other three categories. Second, they were accompanied by music but few or no words. Third, they tended to represent more pleasant situations than the other target categories.

Two of these three features distinguishing the Natural target category also applied to the Project Deep Quest target. It represented a more pleasing situation than the other targets in the projects category, and it was also more homogeneous.

In conclusion, while we are not able to identify a single distinguishing factor from these results, it does appear that certain characteristics may enhance remote viewing quality. The targets for which significant results were achieved were those that were visually homogeneous. Further, from subjective reports of the viewers, they were the most appealing targets in the pool.

II METHOD OF APPROACH (U)

A.   (U) Objectives

(U) The primary long–term objective of this effort is to improve the single–bit hit rate in binary psychoenergetic experiments significantly beyond baseline or fiducial values.   One secondary and one tertiary objective are of interest as well.

- Secondary—To track the various internal mental techniques used, in order to develop hypotheses for later testing.

- Tertiary—To determine if the binary remote viewing techniques can be expanded to choices greater than two (i.e., for between 3 and 6 possible targets).

(U) The specified objective for FY 1988 was set forth under Objective E, Task 4 of the SOW for that year, "Determine the source of 'mental noise' in binary psychoenergetic tasks."

B.   (U) Viewer Selection

In discussions, one of SRI's longstanding remote viewers V(002), reported a desire to renew his/her interest in this area and to address the general problem of single–bit hit rate enhancement.   Since V002 had demonstrated a willingness to address difficult psychoenergetic research problems in the past, SRI decided that he/she would be an appropriate candidate for this effort.

C.   (U) General Approach

(U) A number of problems arise in studying internal mental processes. It is not yet possible to determine the neurological sources of such processes, so we must rely upon subjective techniques in order to begin to understand them. Progress has been made in understanding one area of subjective experience: internal mental imagery. Kosslyn describes successful techniques involving relative internal versus relative external imagery measures to begin to understand this robust mental process.* However, even those techniques cannot yet be applied to remote viewing research, because much of the subjective impressions are reported to precede imagery.

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* (U) Kosslyn, S. M., *Ghosts in the Mind's Machine—Creating and Using Images in the Brain,*
W. W. Norton & Company, New York and London (1983) UNCLASSIFIED.

III RESULTS AND DISCUSSION (U)

(U) Throughout this section p–values have been computed for various experiments in exploratory phases. Since the number of trials was not declared in advance in these cases, the results for the exploratory work are to be interpreted only as indicators rather than as estimates of the probability that, upon repeating the experiment, the data would be as deviant as the original set (i.e. Type I error). In the formal tests described below, the total number of trials was declared in advance, and, thus the quoted statistics are measures of Type I error.

A. (U) Early Similar Experiments

Viewer 002 has been involved in psychoenergetic experiments since the mid 1960s. The earliest record SRI has for V002 in any forced–choice experiments were those conducted for a different sponsor during FY 1976.* While a number of different experiments were tried during an exploratory period, none produced significant results. Effect sizes are not available from that period. However, data from a formal, automated one–in–four forced–choice experiment are available. V002 produced 167 hits in 500 trials for a hit rate of 33.4% ($p \leq 1.59 \times 10^{-5}$) and an effect size of 0.19.

In later forced–choice experiments involving binary and one–in–ten target systems, V002's results did not produce significant deviations from mean chance expectation.† Because V002 has been involved in this type of research for such an extended period of time, these data possess historical value and interest, and can serve as a long–term baseline. However, because of the general approach described above, it is more appropriate to use newer data as a fiducial point for the differential measures.

B. (U) Exploratory and Formal Efforts—FY 1986

1. (U) Results

During FY 1986, and using a protocol similar to the one described above, V002 contributed 479 binary trials as part of an exploration phase—exploratory because of a

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* (U) Puthoff, H. E., and Targ, R., "Advanced Threat Technique Assessment (U)," Interim Engineering Report 1, Project 5309, Stanford Research Institute, Menlo Park, California (September 1976)

† (U) Puthoff, H. E., Targ, R., and May, E. C., "Advanced Threat Technique Assessment (U)," Final Report, Project 5309, Stanford Research Institute, Menlo Park, California, (October 1978)

(S/NF)

possible sensory leakage path. Of these, 276 were hits for a hit rate of 57.6% ($p \leq 5.01 \times 10^{-4}$) and an effect size of 0.15. In a one–in–three target system, V002 contributed 142 trials with a hit rate of 47.9% ($p \leq 2.30 \times 10^{-4}$) and an effect size of 0.30. In a one–in–four target system, 58 trials were conducted with a hit rate of 29.3% ($p \leq 0.27$) and an effect size of 0.02.

Under formal conditions (described in Section II, D.3.) between 15 September and 13 October, 1986, V002 contributed 50 binary trials. The hit rate was 64%, $p \leq 0.033$, and the effect size was 0.26 (corrected for continuity).

2. (U) Discussion

Keeping in mind that during FY 1986 this was part of a larger search effort and extremely preliminary, the results looked quite encouraging. Even on those few trials (one–in–four target system) where the results failed to meet the 0.05 significance level, the effect size was typical of those seen during the historic Rhine investigations. The remaining exploratory trials produced effect sizes an order of magnitude larger.

This exploratory effect size was confirmed by the formal series. The effect size, 0.26, is somewhat larger than that in the exploratory phase, but not significantly so. Two main conclusions can be drawn from these results:

(1) Because there was chance hitting, there was no evidence for subliminal cuing during the exploratory phase; therefore, its protocol should be kept intact.

(2) The formal result, which cannot be considered as a formal baseline (i.e., a large number of pilot trials before the formal series), can, however, serve as a fiducial point for comparison with later efforts.

C. (U) FY 1987 Exploratory Experiments—Results and Discussion

(U) Encouraged by the FY 1986 effort, and in accordance with the FY 1987 SOW, SRI initiated a second exploratory phase of forced–choice experiments with V002. Rather than conducting a simple forced–choice paradigm as in FY 1986, SRI designed this effort was designed to be more sensitive to the subjective internal states of the viewer.

(U) All trials for the year were binary, and two principal subjective internal states were investigated. The first of these was to determine if the viewer could "tell" (sense) in advance of feedback when he/she was in contact with the remote target. The second internal state was related to the overall subjective feeling of the viewer.

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1. (U) Exploratory Series

_____ The 1668 trials collected in FY 1987 can be divided into two separate segments—the first half reported in the Mid-Year Technical Report,* and the second half reported in the Final Technical Report.† This division is a natural one, in that V002 used two different internal strategies.

_____ During the first half of FY 1987, V002 felt he/she could sense being in psychoenergetic contact with the target material. To test this concept, V002 was required to register, in advance of each trial, whether he/she was in psi contact, definitely not in psi contact, or not sure. The hypothesis under consideration in this protocol was that V002 would be able to sense contact with the remote target and would score significantly positive in the contact condition, score significantly negatively in the no-contact condition, and score at chance in the uncertain condition. Table 1 shows the results of 327 trials collected under this protocol.

Table 1

(U) RESULTS FOR FIRST HALF OF FY 1987

Condition	Trials	Hits	p-value	Effect Size	Fractional Hit Rate
Contact	147	88	8.40×10^{-3}	0.20	0.60
No Contact	59	23	9.55×10^{-1}	-0.22	0.39
Uncertain	121	66	1.52×10^{-1}	0.09	0.55

_____ Although we must acknowledge that there was a remote possibility of inadvertent cuing, these results suggest that V002 was able to sense contact with the remote target. In a formal test of this hypothesis, it would be stated *a priori* that the trials during the no-contact condition would be automatically inverted in the analysis (i.e., V002's remote viewing would be used to reject one of the targets). It is important to note that the amounts of psychoenergetic functioning required to sense contact are similar to those required to sense no contact with the target. Since the effect sizes a under these two conditions are so similar (i.e., the minus sign for the no-contact condition reflects the fact that V002 scored below mean

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* (U) May, E. C., "Enhanced Human Performance Investigation (U)," Mid-Year Technical Report, Project 1291, SRI International, Menlo Park, California (June 1987)

† (U) May, E. C., "Enhanced Human Performance Investigation (U)," Final Technical Report, Project 1291, SRI International, Menlo Park, California (December 1987)

chance expectation—the expected direction if the hypothesis is true), it forms the basis for a strong hypothesis for formal testing.

The directional effect sizes are statistically equivalent to a fiducial condition value of 0.26. Thus, V002 did not exhibit a decline effect, but there was no indication of improvement either. If a direction is specified in advance of an experiment, it is appropriate to use one-tailed tests. From this perspective, the hitting rate was 61%, $p \leq 1.37 \times 10^{-3}$, and the effect size was 0.21—results that are statistically equivalent to the fiducial data, but with the added feature of possible directional control.

The conditions for the second half of FY 1987 were defined at the session level. V002 defined three types of sessions – positive days, negative days, and unknown days – that had to be specified in advance of any trials during a session, reflecting the overall subjective state of being of V002. If these *a priori* statements correlated with performance, they could be used as a filter to reject part of the data. Table 2 shows the results for 1341 trials collected under this protocol.

Table 2

(U) PRELIMINARY RESULTS FOR SECOND HALF OF FY 1987

Session Condition	Trials	Hits	p–value	Effect Size	Fractional Hit Rate
Positive	311	174	1.82×10^{-2}	0.12	0.56
Negative	484	243	4.63×10^{-1}	−0.04	0.50
Uncertain	546	322	1.37×10^{-5}	0.18	0.59

The positive–day and negative–day data did not exceed mean chance expectation. The uncertain case scored similar to the fiducial data. Yet, the effect size changes are small and not statistically meaningful. To be consistent with the calculations for the data collected in the first half of FY 1987, the one–tailed combination of the data yields a fractional hit rate of 52%, $p \leq 1.00 \times 10^{-1}$, and the effect size is 0.045. Thus, it appears that V002's perception of good and bad days may interfere with good functioning (earlier performance was replicated only during V002's uncertain days). Since there was no evidence for a decline effect for 546 trials during the uncertain days, it is unlikely that the decline effect is responsible for the reduced scoring for the other data.

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2. (U) **Formal Test**

\The experiment coordinator decided to cancel the formal test at the year's end for two reasons:

(1) One main objective of the year-end formal test was to protect against possible cuing. The hit rate for the year was 55%, $p \leq 2.97 \times 10^{-5}$ and the effect size was 0.10. Thus, if inadvertent cuing was present, it resulted in a decrease in effect size—an unlikely circumstance. This is consistent with one of the main conclusions drawn from the results of the FY 1986 test.

(2) V002 requested that we postpone formal tests until FY 1988, because V002 felt he/she was concentrating and beginning to understand something about his/her internal processes. According to V002, a formal test at this time would seriously interrupt the discovery activity at a critical juncture.

In the experiment coordinator's opinion, canceling the formal year-end test did not detract from the FY 1987 results, since they were marginal to begin with and, it was felt that if insights were being gained, they could be tested during FY 1988. As shown below, this decision was justified.

D. (U) **FY 1988 Experiments**

1. (U) **Theoretical Constructs**

(U) Viewer 002 has been working for over 20 years in attempting to understand his/her own internal, subjective awareness. What follows is a summary of V002's current understanding with regard to the specific task of determining the source of mental noise in forced-choice experiments.

(U) The fundamental idea is quite straightforward. Forced-choice remote viewing perception* is susceptible to massive overlay by memory (e.g., from earlier trials) and/or expectations (e.g., the target was number one ten times in a row, this time it *must* be number two). To understand the source of these difficulties requires the understanding of the development of thought itself.

(U) As a starting point, V002 followed the ideas of Dr. N. Dixon, a well-known investigator of subliminal perception. Figure 1 summarizes Dixon's concepts of the processing of preconscious information.† It is beyond the scope of this report to describe all the processes

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* (U) These problems arise in traditional remote viewing; however, they are particularly troublesome in the forced-choice arena.

† (U) Dixon, N. E., *Preconscious Processing*, John Wiley, Chichester and New York, p. 25, (1981) UNCLASSIFIED.

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final level of the hierarchy is to perceive the meaning of different conditions of similar objects. For example, the difference between a piece of blank paper with UNCLASSIFIED printed top and bottom and one with ___ top and bottom lies only in the meaning of the words. If this last stage could be realized, it would have obvious ___ significance.

RV Output

Noise Overlay

Intellectual Decisions

Idea Making

Random Uncontrolled Thoughts

Imagination

Creative Additions

Memory Comparisons

Labels

Beliefs

Sources of Noise

Feelings

Subliminal Level

Psychoenergetic Input
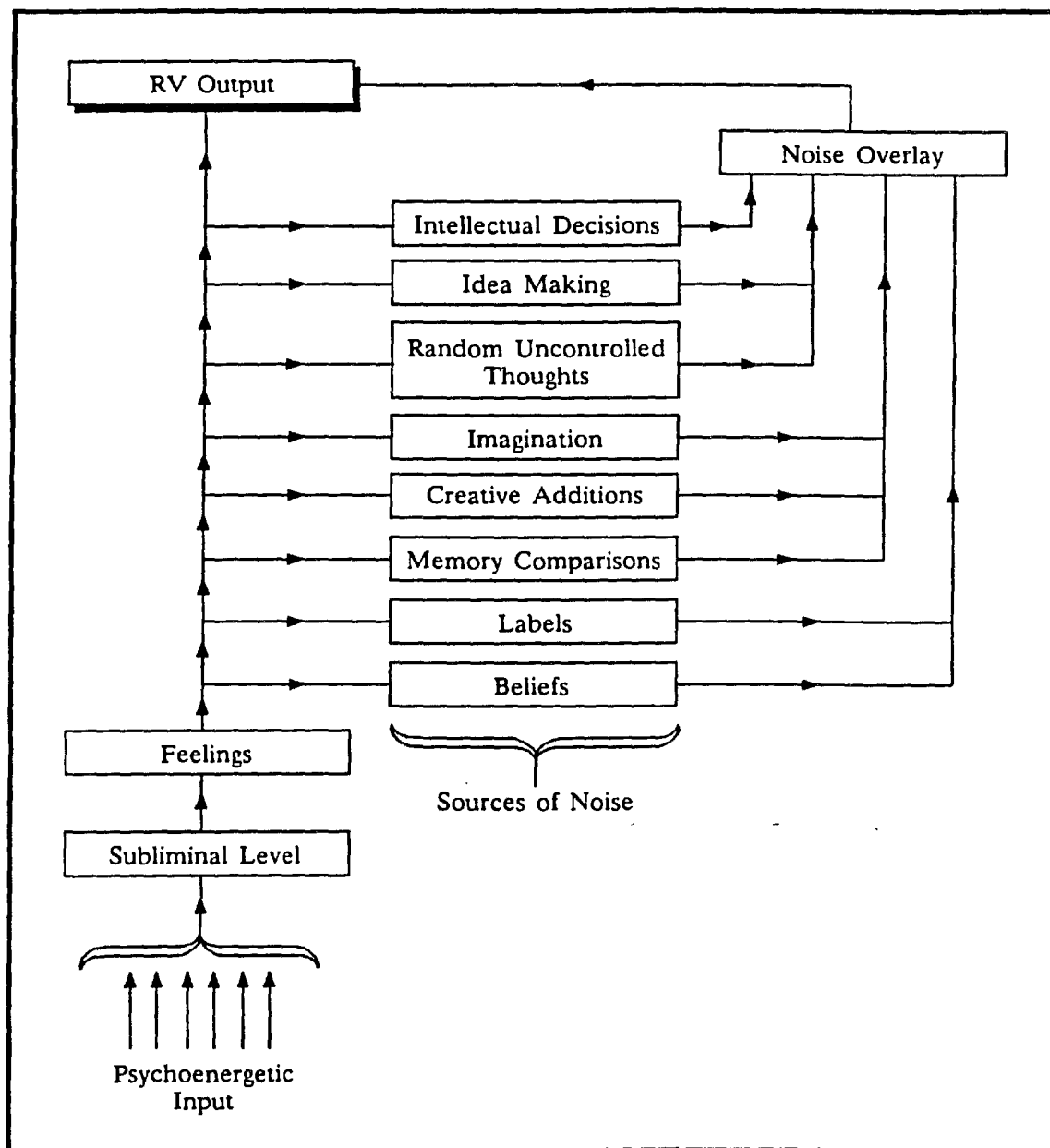
UNCLASSIFIED

FIGURE 2 (U) SCHEMATIC REPRESENTATION OF ANALYTICAL OVERLAY

degrees of freedom. Clearly, this is different from the expected value of zero, and thus on the average, there was not a constant hit rate.
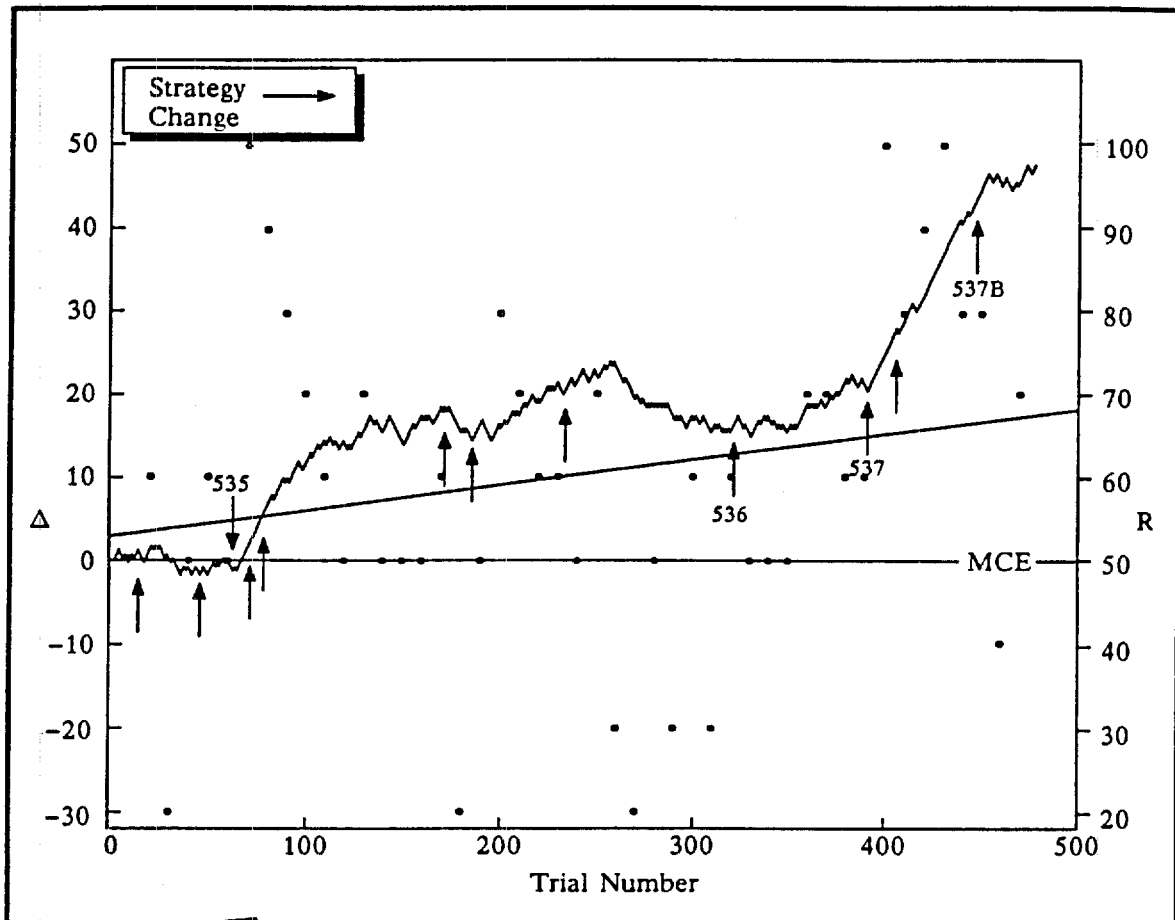
FIGURE 3 (U) EXCESS HITTING DURING EXPLORATORY TRIALS—1988

_____ Shown also in Figure 3 is the "instantaneous" hit rate, R, calculated over 10 trial segments (open circles). The first point, at 10 trials, represents the average hit rate from trial 5 to trial 15; the second point at 20 trials represents the average hit rate from trial 15 to trial 25 and so on. The line labeled MCE (mean chance expectation) corresponds to a 50% hit rate. The unlabeled line ($R = 0.529 + .003\ n$) is the regression line for the instantaneous hit rate. While the curve demonstrates a clear trend toward performance enhancement, the linear correlation coefficient is not significantly ($r = 0.203$, $p \leq 0.09$) greater than chance ($r = 0.0$).

_____ Figure 3 shows periods of significant growth followed by periods of consolidation. Major strategy 535 fits this model, but major strategy 536 does not. Yet, major strategy 537 produced another period of growth. Strategy 537B is also labeled because it was the

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one that was used in the formal test (see Section 3 below), and V002 claimed that it represented a transition from three–dimensional to two–dimensional targets. In V002's theoretical construct, this also represents a change from perceiving object conditions to perceiving object meaning.

As can been seen from both the hit rate and accumulated excess hits, there was one period (approximately 14.3% of the total number of trials—trials 254 through 321) that corresponds to a decline in performance. This period is the only time during the exploratory sessions in which a large number of trials (68) were attempted during a single session (average hit rate of 40%). The second longest continuous segment was from trial 335 to 358 (24 trials for an average hit rate of 54%).

In answer to questions about what was occurring with each of these strategy shifts, all V002 could say is that they represent new psychoenergetic contact with some of the noise sources shown in Figure 2 . It is frustrating from SRI's perspective as well as from that of V002 that these strategies remain so subjective.

In addition to the 477 binary trials, 18 were collected, but not included in the record. For these trials, the target was whether or not a second person was in the SRI analyst's office. The hit rate for these 18 trials was 78%, $p \leq 1.69 \times 10^{-2}$, and the effect size was 0.50. These data are not to be considered part of the experimental record, however, since it became apparent that the background noise level was obviously different when a second person was in the office. Thus, it is assumed that the strong scoring could easily be attributed to cuing.

(U) During FY 1988, two smaller series of forced–choice experiments (n = 3 and n = 6) were conducted. The protocol for these was the same as for the binary case except that the target pool was appropriately larger.

V002 contributed 135 trinary (i.e., one–in–three) trials. The hit rate was 48% (expected hitting rate is 33%), $p \leq 1.83 \times 10^{-4}$, and the effect size was 0.31. This effect size is slightly larger than the fiducial binary case and represents an increase from 0.25 for the first half of the data to 0.34 for the second half. With so few trials, it is difficult to interpret this increase. These trials were primarily used to form a fiducial point for later trinary experiments.

V002 contributed 49 trials in a one–in–six experiment. The hit rate was 18%, $p \leq 4.49 \times 10^{-1}$, and the effect size was 0.018. These trials were exploratory for V002, to determine subjectively if some of the binary routines were applicable to a larger pool of target choices. This small effect size and hit rate (expected hit rate is 17%) indicate that more work is needed to understand the forced–choice remote viewing of one–in–six target possibilities.

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3. (U) **Formal Test**

As in earlier years, there is no indication (except where noted) that these results can be accounted for entirely on the basis on inadvertent cuing. However, SRI conducted a formal test of 50 trials as a concluding effort for FY 1988. V002 used strategy 537B throughout the formal series.

(U) The protocol for the formal experiment was designed to eliminate the possibility of any inadvertent cuing. In general, it was similar to the binary procedures that had been in use since the beginning of the binary search program in FY 1986 as described above.

a. (U) **Number of Trials**

(U) The total number of trials for the formal experiment was specified in advance as 50.

b. (U) **Target Material**

(U) For each trial, pairs of targets were selected from the material shown in Table 3. Some of the time V002 suggested a pair, but most of the time the choice was up to the experiment coordinator. These pairs were not chosen randomly. Rather they were chosen in accordance with a subjective opinion as to the difference between the pair. Occasionally, V002 would request a different pair before the trial was initiated.

c. (U) **Computer Link**

(U) To ensure that there was no inadvertent cuing, a computer link was established between the experiment coordinator (EC) and the research assistant (RA). After a target had been generated (see below) the only communication allowed over the computer link from the EC was the single word "Ready." To further protect against inadvertent cuing, the word "Ready" was typed automatically by a special program rather than manually.

d. (U) **Sequence of Events for a Single Trial**

(1) Viewer 002 selected a pair of possible targets from the list shown above, and informed the RA.

(2) The RA informed the EC by computer link of the choices.

(3) The EC used established computerized random procedures to select one of the pair as the actual target and placed it in a predetermined place. The other target of the selected pair was placed in a desk drawer. One

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(U)

minute after Step 2, the EC informed the RA that a target was ready by typing the single word "Ready."

(4) The RA informed the viewer that a target was ready by striking a bell.

(5) The viewer responded, and the RA informed the EC of the choice by the computer link.

(6) The EC recorded the data and informed the RA of the target.

(7) The RA provided feedback to the viewer.

(8) Before a new trial could begin, the EC had to replace the targets in the target pack and signal the RA by typing "Next."

Table 3

(U) TARGET LIST FOR THE FORMAL EXPERIMENT

Number	Description
1	Graph paper: red, circular.
2	Contour map: black, ovals.
3	Contour map: black, concentric circles.
4	Graph paper: black, rectangular.
5	Circular graph paper: Black, concentric circles.
6	Reactance frequency graph paper: orange, rectangular/triangular.
7	Reactance frequency graph paper: green, rectangular/triangular.
8	Circular percentage graph paper: green, 3 circles.
9	Geomagnetic meridian plot paper: black, 3 half circles.
10	Perspective graph paper: blue, rectangular, diagonal lines.
11	Triangular coordinate paper: orange, triangles.
12	Triangular coordinate paper: green, triangles.
13	Square graph paper: green, 10 x 10 to the inch.
14	Square graph paper: orange, 4 x 4 to the inch.
15	Square graph paper: 5 x 5 to the centimeter.
16	Circular, polar coordinate graph paper: orange, 10 parts to the inch.
17	Circular, polar coordinate graph paper: green, 10 parts to the inch.
18	Chart geomagnetic latitude paper: black, 11x18 inches.
19	flag/alert sheet with red–striped border.
20	document cover:
21	SKI document cover: brown beige.
22	manila envelope.
23	mat paper.
24	mat paper.
25	mat paper.
26	NUCLEAR DEVELOPMENT: large sign.
27	PLANS: large sign.
28	: large sign.
29	CODE XLTZ: large sign.

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e. (U) **Record**

(U) The date, target pair, intended target, and the response were tabulated for later analysis (see Table 4).

f. (U) **Analysis**

(U) A single p-value and effect size were calculated from the data shown in Table 4.

g. (U) **Results**

Table 4 shows the targets that were used and the results for the 50-trial formal series. There were 38 hits, corresponding to a hit rate of 76% ($p \leq 1.53 \times 10^{-4}$) and an effect size of 0.51. The hit rate is consistent with that observed using strategies 537 and 537B, and the effect size is nearly double that obtained during the fiducial run at the end of FY 1986. If it is assumed that the hit rate of 64% is the actual hit rate, then there has been a significant increase ($p \leq 0.038$) since FY 1986. The one-sided confidence interval (95%) is 66%, which is greater than the fiducial value of 64%.

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Table 4
(U) RECORD SHEET FOR THE FORMAL EXPERIMENT

Trial	Date	Target Possibilities		Target Choice	Response	Hit
		One	Two			
1	9/20	8	22	8	22	
2	9/20	8	22	22	22	X
3	9/21	12	18	12	18	
4	9/21	12	19	19	12	
5	9/21	12	19	19	19	X
6	9/21	18	22	22	22	X
7	9/22	22	23	22	22	X
8	9/26	18	19	19	19	X
9	9/27	5	24	24	24	X
10	9/28	26	29	26	26	X
11	9/29	27	28	27	27	X
12	9/29	12	19	19	12	
13	9/29	21	27	27	27	X
14	9/30	18	19	18	18	X
15	10/3	26	29	29	29	X
16	10/3	2	19	2	2	X
17	10/3	26	29	26	29	
18	10/3	20	23	20	20	X
19	10/3	5	22	5	5	X
20	10/4	1	20	20	20	X
21	10/4	11	27	27	27	X
22	10/4	19	26	26	26	X
23	10/4	12	16	12	16	
24	10/4	19	24	24	24	X
25	10/5	19	24	19	24	

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Table 4, Continued

(U)   RECORD SHEET FOR THE FORMAL EXPERIMENT

Trial	Date	Target Possibilities		Target Choice	Response	Hit
		One	Two			
26	10/5	26	29	26	29	
27	10/5	19	21	21	21	X
28	10/5	2	27	27	27	X
29	10/5	18	28	18	18	X
30	10/6	2	19	19	19	X
31	10/6	11	12	12	12	X
32	10/6	18	23	23	23	X
33	10/6	18	22	18	18	X
34	10/6	5	26	5	5	X
35	10/6	6	7	7	7	X
36	10/6	19	23	19	23	
37	10/6	18	20	18	18	X
38	10/6	22	29	22	22	X
39	10/6	5	10	5	10	
40	10/6	2	6	2	2	X
41	10/7	2	19	2	2	X
42	10/7	5	29	5	5	X
43	10/7	6	18	6	6	X
44	10/7	12	26	12	12	X
45	10/7	22	24	24	22	
46	10/7	2	20	20	20	X
47	10/7	18	27	27	27	X
48	10/7	1	28	28	28	X
49	10/7	3	22	3	3	X
50	10/7	5	26	26	5	

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December 1988

Final Report—Covering the Period 1 October 1987 to 30 September 1988

FORCED–CHOICE REMOTE VIEWING (U)

SRI Project 1291

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copy 1 of 2

If the problems of forced-choice remote viewing (i.e., remote viewing of a limited and known set of target alternatives) could be solved, a number of potential applications come to mind. First and foremost, standard redundancy coding techniques could be employed to improve the hit rate further. This is not a new idea. In 1964, Ryzl demonstrated the psychoenergetic transmission of 50 binary bits without a single error,* and in 1985 SRI published a white paper describing a program to determine optimum coding parameters.† In that report, SRI showed that if psychoenergetic functioning were stable over time, it would be possible to trade number of trials for reliability. Using techniques similar to the ones described in SRI's white paper, it is possible to increase the single-bit hit rate for a binary experiment from a nominal 60% to over 99%. With such a low initial hit rate, the efficiency (i.e., one divided by the number of trials required to obtain the desired certainty) is of the order of 0.002 or lower. Such a low efficiency might be problematical in an [   ] environment.

One solution to this problem is to increase the single-bit hit rate. To do this, however, requires that longstanding problems with the forced-choice psychoenergetic experiments be solved. As part of the [   ] "Enhanced Human Performance Investigation," (Contract DAMD17-85-C-5130), SRI initiated a pilot investigation of forced-choice remote viewing to address the problem of low efficiency. Since a binary search strategy is one of the most likely applications if an increased single-bit hit rate could be realized, the effort to increase the rate was included as part of the FY 1986 Objective E, Task 2, Search. In FY 1987 and FY 1988, this effort was under Objective F, Task 10, and Objective E, Task 4, respectively.

(U) This report summarizes the work performed from FY 1986 through FY 1988.‡

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* (U) Ryzl, M., "A Model of Parapsychological Communication," *Journal of Parapsychology,* Vol. 30, No. 1, pp. 18–30, (March 1966) UNCLASSIFIED.

† (U) Humphrey, B. S., "Psi Communications Experiments (U)," White Paper, SRI International, Menlo Park, California, (November 1985)

‡ (U) This report constitutes the deliverable for Objective E, Task 4, FY 1988.

2

IV CONCLUSIONS AND RECOMMENDATIONS (U)

The single most interesting outcome during the three-year experiment is that there was a significant enhancement of hit rate in the formal series in FY 1988 over the results from the formal series during FY 1986.

In examining the performance during the exploratory phase in FY 1988, we observed strong enhancement (not significant) of hit rate (see Figure 3). At this point, a number of possible explanations could account for the improvement:

- V002 has correctly identified his/her source of internal noise,

- Although SRI believes it unlikely, V002 may have learned to use weak sensorial cues during the exploratory phase, or

- Due to the complexity of the protocol during the formal series, there is still an unknown sensory leakage path.

While it is impossible to rule out unknown sensory leakage paths, all of the known ones were addressed in the formal protocol. We include this remote possibility for completeness. Because of the protocol complexity, the remote viewing processes are indeterminate at present, but the end-point statistic is valid.*

It is important that this study be continued in order to isolate which of these explanations is more able to explain the results, and to identify a technique to quantify the internal experiences of V002, should that prove to be the proper explanation. Should such a technique be found, specific hypotheses could formulated and tested, and a training procedure and applications could be developed based upon that knowledge.

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* (U) During the Scientific Oversight Committee meeting of 4 November 1988, a number of comments were made concerning the adequacy of the protocols with regard to process. However, there was general agreement about the endpoint statistic. See "Enhanced Human Performance Investigations (U)," Final Technical Report, SRI Project 1291, SRI International, Menlo Park, CA (December 1988).

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December 1986

Interim Report-1
Covering the Period 1 October 1985 to 30 September 1986

LOCATION OF TARGET MATERIAL
IN SPACE AND TIME (U)

I INTRODUCTION (U)

A continuing need ⸺⸺⸺ is determining the location of⸺⸺⸺ targets of interest, whose positions are not known or are known only approximately.

It has been claimed by the parapsychological community that individuals can search for and locate water, oil, minerals, objects, individuals, sites of archaeological significance, and so forth. If this can be demonstrated to be a genuine ability, and if it can be applied, ⸺⸺⸺ then we may have a potential match to the above requirement.

This ability can be contrasted to the related psychoenergetic ability "remote viewing," in the following manner. In remote viewing, the viewer is given location information (e.g., coordinates, a "beacon" agent, or a picture), then asked to provide data on target content ▲ . In "search," the viewer is given information on target content, then asked to provide location data (e.g., position on a map). The two functions thus compliment each other.

(U) The ability to locate targets is most often referred to as "dowsing" in the Western literature, and "biophysical effect (BPE)" in the Soviet/East Bloc literature. In this report,[*] we shall refer to such techniques simply as "search." Although much of the literature is anecdotal,[1][†] attempts to quantify the ability and to determine its mechanisms have been pursued.[‡]

The goal of the present effort is to research the literature, then perform laboratory experimentation to determine whether, and to what degree, such functioning is a viable candidate for applications This includes determining (1) the best methods and efficiencies of various search techniques, and (2) the appropriate statistical analyses for evaluating results.

(U) In attempting to determine if this putative ability can be brought under laboratory control, we have simulated "field conditions" with a computer–assisted–search (CAS) experiment.

(U) Our CAS experiments generally contain the following basic elements:

(1) A finite matrix of possible target locations (e.g., a 20 x 20 graphics matrix grid) from which one cell is randomly selected by the computer as the target.

(2) An individual whose task is to "scan" the graphics display area, and indicate, by pressing a button, his/her choice as to the target location.

(3) A feedback mechanism that displays the response and actual target location.

(4) An *a priori* defined analysis procedure.

(U) Using this general procedure, we conducted an experiment during FY 1984 in which two conditions were tested simultaneously:[1][§]

- Searching for a target that remains fixed in space for the duration of the trial (space condition).

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III RESULTS (U)

⁋   Table 1 shows the p-values for each participant in each condition. Two individuals achieved significant p-values in the space condition and six persons showed significant p-values in the time condition.

Table 1 (U)
(U) p-VALUES FOR PARTICIPANTS IN SEARCH EXPERIMENTS

Subject I.D.	Space	Time
105	0.84078	0.16176
177	0.44148	0.13012
111	0.98868+	0.96894+
274	0.96954+	0.74088
144	0.63678	0.67126
099	0.95199+	0.21685
933	0.70792	0.14378
728	0.26703	0.11501
537	0.34966	0.19182
161	0.44627	0.31385
258	0.43465	0.96682+
594	0.54688	0.41565
677	0.76812	0.49793
653	0.23560	0.81473
636	0.85025	0.36908
570	0.67064	0.26024
393	0.44284	0.49724
255	0.97783+	0.96208+
425	0.74256	0.98615+
989	0.56330	0.80866
498	0.23507	0.84781
790	0.70135	0.63873
642	0.27391	0.03106*
300	0.13345	0.00010*
463	0.16690	0.01473*
428	0.34136	0.03143*
057	0.63092	0.03778*
004	0.99536+	0.04630*
531	0.25078	0.91276
432	0.01245*	0.29625
837	0.04117*	0.69349
003	0.10618	0.19182
580	0.08974	0.53519
763	0.18481	0.26932
038	0.18619	0.35158
164	0.97838+	0.61381

* Significant at < 0.05 in predicted direction
+ Significant at < 0.05 in direction of target avoidance

8

Evidence supporting the tendency for significant subjects to do better on one task over the other (as reported in previous research) can be demonstrated by calculating a z-score for the difference between the z-scores associated with the average (across individuals) p-values of the significant condition versus the nonsignificant condition. We find z = 2.87, which is significant at the 0.002 level.

IV DISCUSSION AND CONCLUSIONS (U)

The results are in line with predictions; eight persons showed significant deviation from chance expectation (probability equals 0.027). In addition, post hoc analysis shows a significant tendency to do better on one condition than ON the other.

(U) In FY 1987, the seven best individuals in each condition will participate in a formal CAS study, in which the conditions will be separated and the number of trials increased.

Final Report—Objective D, Task 1
Covering the Period 1 October 1987 to 30 September 1988

December 1988

NEUROPHYSIOLOGICAL CORRELATES TO
REMOTE VIEWING (U)

Prepared for:

SRI Project 1291

Approved by:

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This document consists of 38 pages
~~SRI/GF=0916~~

COPY 1 OF 2

(U) LIST OF TABLES

III RESULTS (U)

(U) Viewers 002, 007, 009, 372, 531, and 908 from SRI International, and viewers 262 and 734 from Los Alamos National Laboratory participated in the effort. Viewers 002, 009, and 372 were experienced while viewers 007, 262, 531, and 734 had not previously participated in remote viewing trials. As described in Section II, the output from the MEG consisted of seven channels of data recorded simultaneously from different physical locations. These data were stored either in average mode (i.e., signal averaging was accomplished in real time) or as single passes (i.e., the signal averaging was accomplished during later processing).

A.   (U) Vassy Protocol

(U) Since there was no initial hypothesis (other than a possible response to remote stimuli), the following analyses are, by definition, post hoc. In the signal–averaged condition, the data from each viewer and each series were visually inspected for prominent peaks regardless of the data channel. Candidate peaks for a possible response to the remote stimuli were identified for later comparison. See Figure 1 for a schematic representation of a candidate peak.

(U) This particular post hoc approach is problematical. Because the data across viewers are especially ill behaved (statistically), it is difficult to estimate the degree to which the timing of candidate peaks is fortuitous.

As shown in Figure 3, the response (in channel 1) to direct stimuli for V002 exceeds 400 ft. The arrows in each channel mark a candidate peak for response to remote stimuli. This peak appears approximately 100 ms after the onset of the remote stimulus, and is most prevalent in channel 1. (The peak is the left–most component of a broader response.) This peak can be seen in channel 2, but is absent from channels 4, 5, and 6 and is sharply reduced in channel 3. This candidate peak, by itself, is not particularly compelling. Yet data from the next session, one day later, show a strong peak with the identical timing.

On that day, 23 August, the detector array was placed as close as possible to the location on the previous day. This new placement resulted in a sharply reduced response to the direct stimulus (see Figure 4) from that shown in Figure 3. In fact, all channels show a reduced response to the direct stimulus indicating that the detector array might have been moved away from the CNS site that was responding to the direct stimulus. The arrows indicate a peak in each channel that corresponds (± 2 ms) to the peaks indicated in Figure 3. In all channels the

12
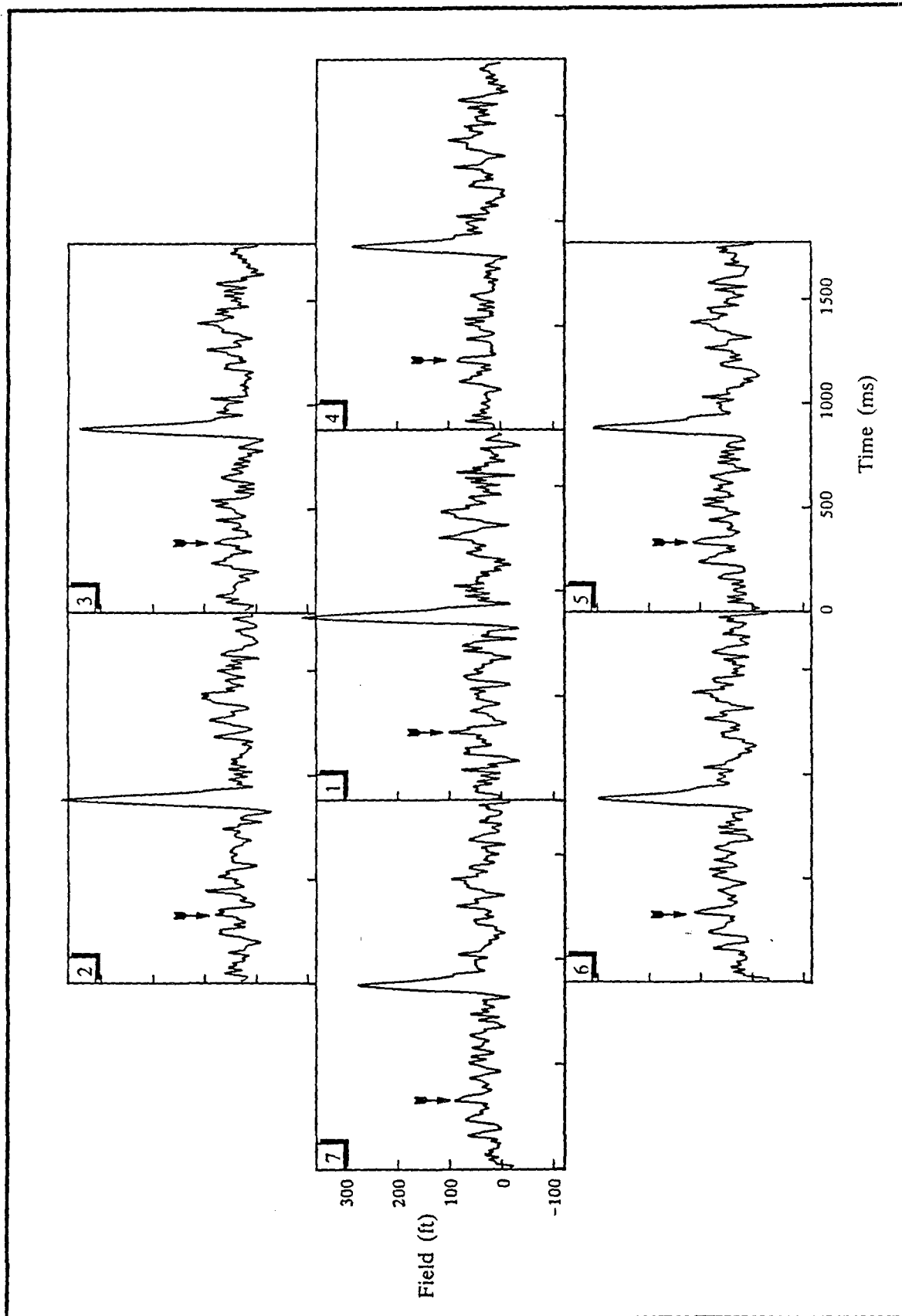
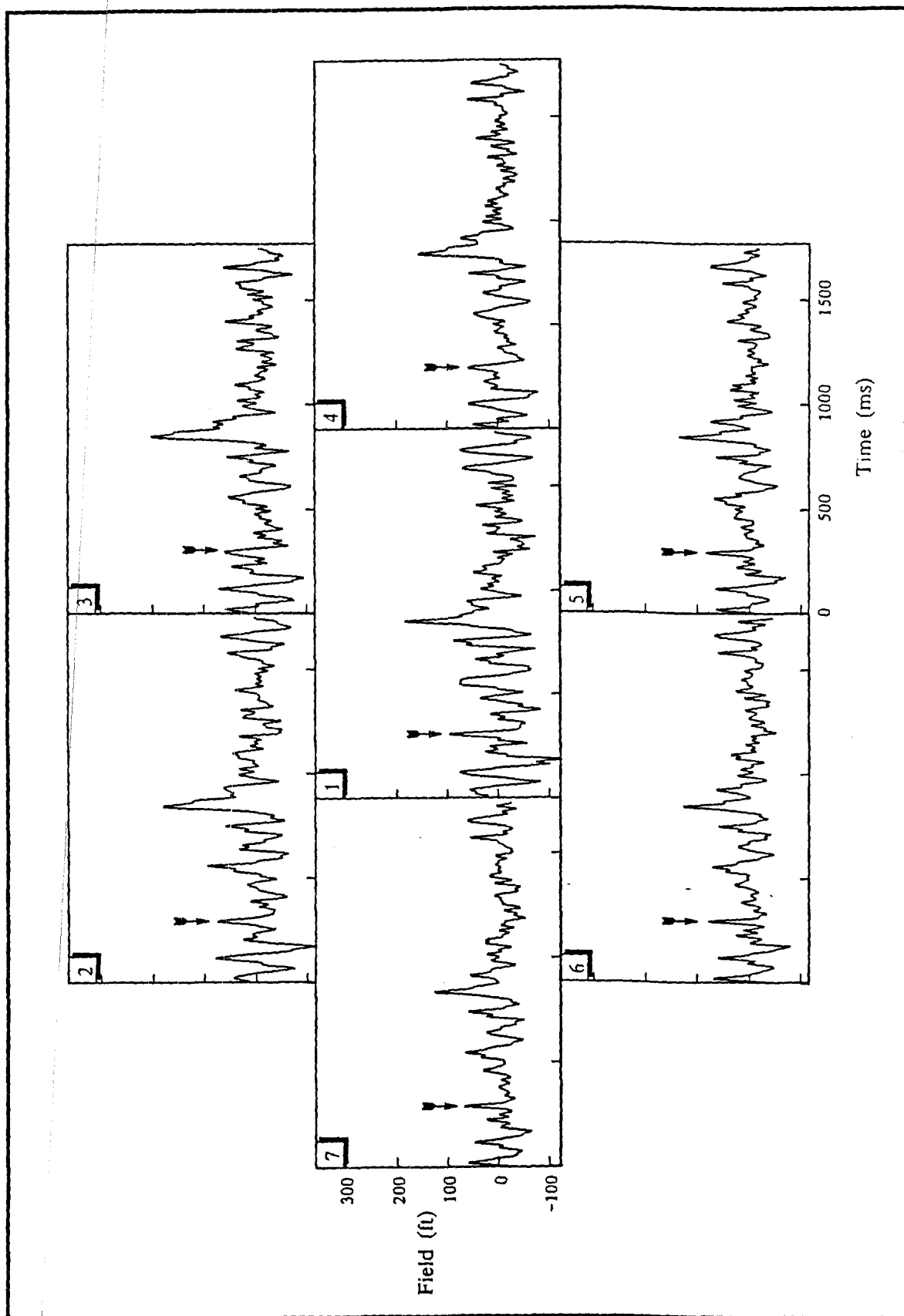FIGURE 3   (U) VASSY PROTOCOL: 0 TO 1700 MS — V002, 8/22/88

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FIGURE 4 (U) VASSY PROTOCOL: 0 TO 1700 MS — V002, 8/23/88

14

amplitude of the peak is greater than its earlier amplitude; and in channel 1, its amplitude approaches one-half of the response to the direct stimulus.

(U) Figure 5 shows MEG data from one run and one detector for all participants in the Vassy protocol. Since the baseline recording period varied among viewers in length (designated "Long" and "Short" in Figure 5), the data, displayed at 5-ms intervals, are shown with the onset of the remote stimulus as a common point.

The peak labeled "ERF—RS" can be seen in data from all participants. The mean time of the peak (one detector per run) identified in the Vassy protocol is 98.2 $\pm$ 7.1 ms (three data channels) after the onset of the remote stimulus.

Figure 6 shows averages across viewers for long, short, and both ("All") timings. They are normalized by the individual run with the largest spread in magnetic field.

V009 participated in four separate runs: One in the psi protocol and three in the Vassy protocol. The candidate peak across all four runs has a mean of 102.25 $\pm$ 1.70 ms. No peaks are observed in the baseline period for four runs with similar timing constraints.

Several peaks in the remote stimulus (RS) poststimulus region appear to be present for all viewers; however, the candidate peak is the first one after the remote stimulus.

Some peaks shown in Figure 5 are responses to high-frequency (6-cpd) stimulus, and others are responses to a low-frequency (2-cpd) stimulus. No participant responded to both frequency stimuli.

The two protocols under consideration (Vassy and psi) are identical in one respect: They both contain a remote stimulus, and a putative response to that stimulus is sought. Therefore, one might expect a candidate peak identified in the Vassy protocol should be observed in the psi protocol as well. We have indicated that this is the case for V009 (this is discussed further in Section III.C).

While the averages shown in Figure 6 appear to provide evidence for a strong response to the remote stimulus, we must recognize that the data shown in Figure 5 could be examples of fortuitous peak selection. If so, then the averages shown in Figure 6 are the *expected* result.

Given the caveat about the approach, at least one candidate peak for a response to the remote stimulus appears to have been identified. More analysis and/or research is needed before a definitive statement can be made.
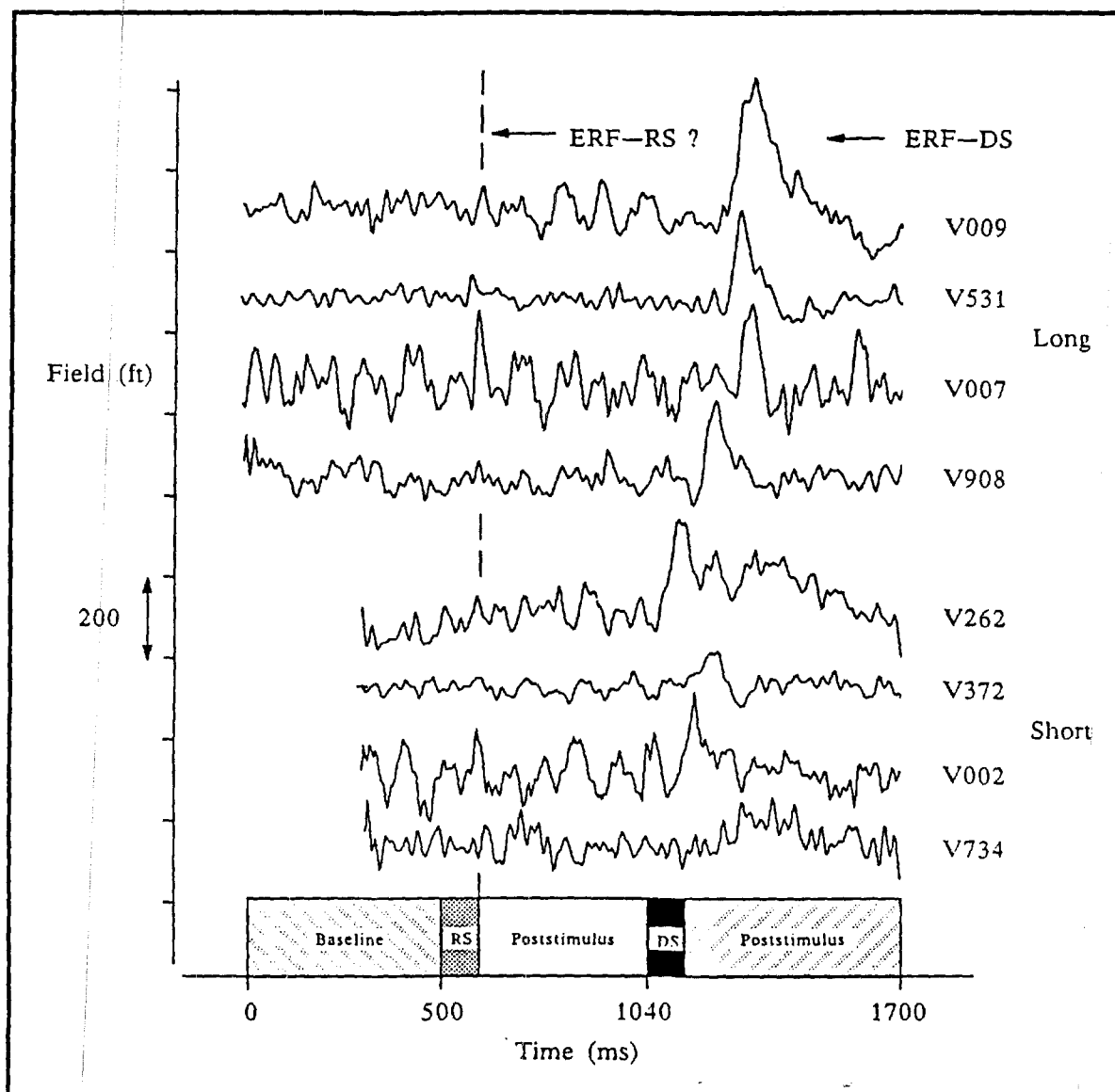
15

FIGURE 5   (U) VASSY PROTOCOL—50—TRIAL AVERAGES FOR EACH VIEWER

Should this peak be a response to a remote stimulus, then at least one alternative (to the psychoenergetic interpretation) must be considered. Since the shielded room for the MEG is nearly transparent at frequencies above 100 Hz, the observed peak might result from a CNS response to an electromagnetic signal related to the display of the stimuli on a standard television monitor.
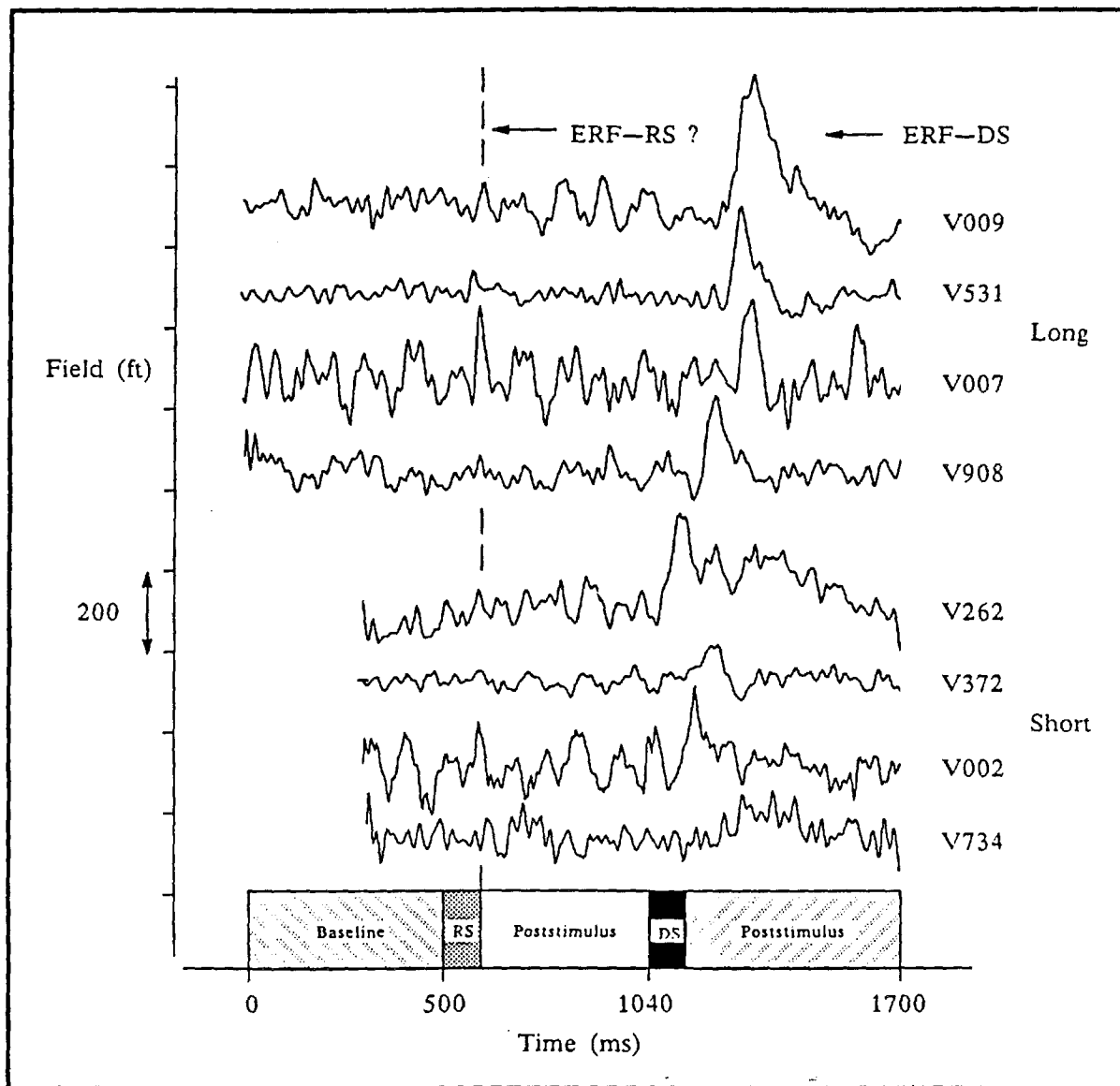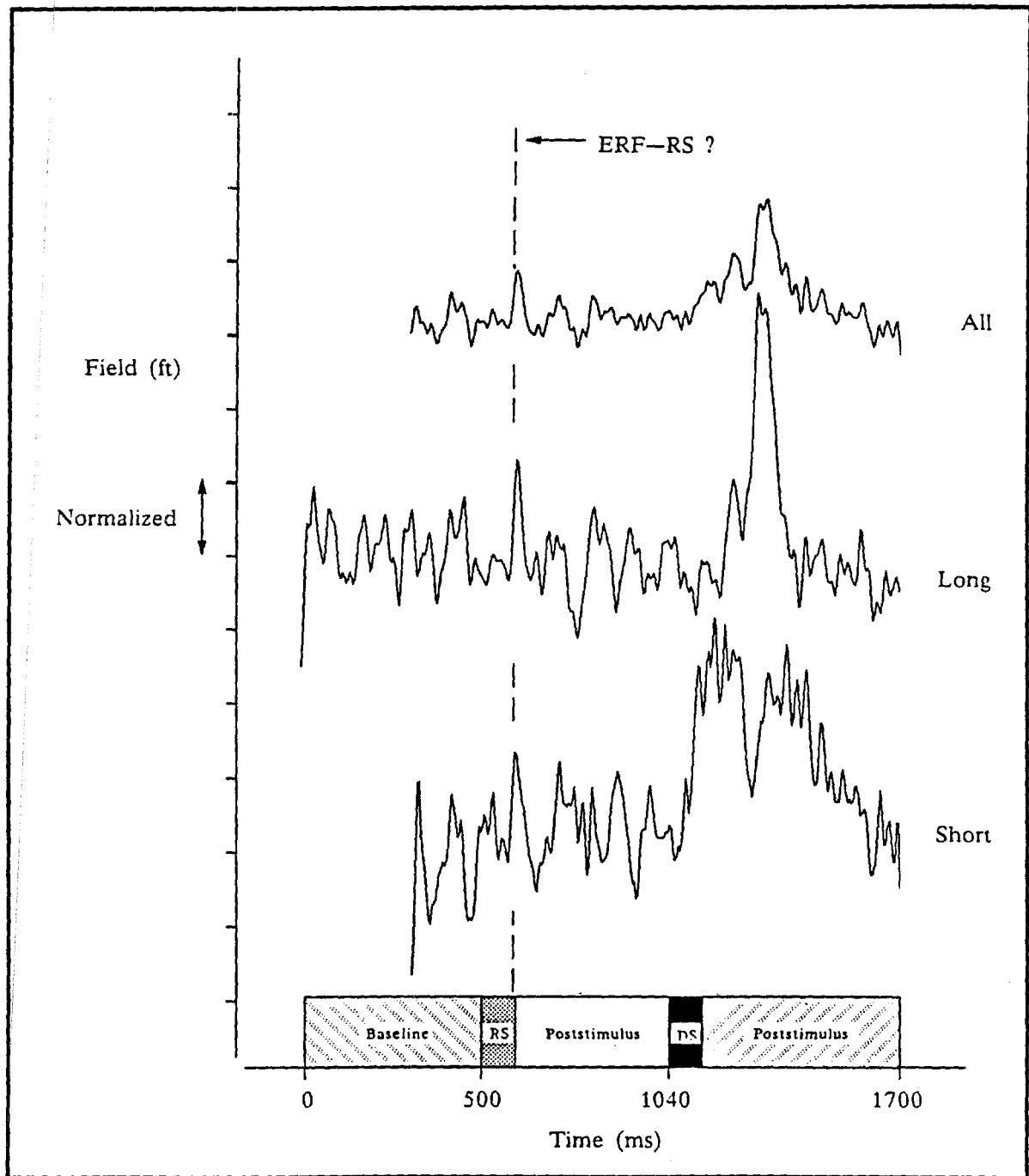
16

FIGURE 5 (U) VASSY PROTOCOL—50—TRIAL AVERAGES FOR EACH VIEWER

Should this peak be a response to a remote stimulus, then at least one alternative (to the psychoenergetic interpretation) must be considered. Since the shielded room for the MEG is nearly transparent at frequencies above 100 Hz, the observed peak might result from a CNS response to an electromagnetic signal related to the display of the stimuli on a standard television monitor.

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FIGURE 6   (U) VASSY PROTOCOL—AVERAGES

B.   (U) Psi Protocol Results

(U) Viewers 002, 009, and 372 participated in the psi protocol experiment. Seven channels of MEG data, one channel of stimuli data, and one channel of button—response data were stored for each run of 120 seconds for later analysis. A series consisted of 10 such runs.

(U)

The complete protocol (described in Section II) was used for V002 and V372. Since V009 was the first viewer to participate and the experiment was mostly exploratory, no pseudostimuli were present, nor were postsession control runs conducted.

1.   (U) Viewer 002

Viewer 002 visited Los Alamos National Laboratory from 22–26 August 1988. During that time V002 participated in three separate series in the psi protocol experiment. Figures 7 and 8 show the time series and power spectra, respectively, for the average of 118 pre- and poststimuli for all channels on 25 August. These data were chosen for display because this series was the first using the complete psi protocol. For the remote stimuli (Figure 7), channels 1, 4, and 7 show a qualitative change of activity in the time series across the stimulus boundary. All channels show a decrease of power in the prominent 10-Hz peak (Figure 8). Figures 9 and 10 show the same data for 74 pseudostimuli.

(U) To determine if the qualitative changes are exceptional, we analyzed the data by the Monte Carlo procedure outlined in Section II. We simulated the remote stimuli by generating 2000 sets of 118 Monte Carlo stimuli having the same timing as the original data. For each set, the data were averaged, detrended, and filtered, and the 10-Hz and total power were calculated for the pre- and poststimulus periods. The ratio of pre- to poststimulus power was also calculated, as were p-values (defined as the ratio of the area equal to or greater than the specified value, divided by the total area under the histogram).

(U) Figure 11 shows the resulting histograms of the 2000 sets for the 10-Hz peak in channel 4 (Figure 8); the ratio histogram is not shown. While separate histograms were generated for 74 pseudostimuli, for convenience the results shown on the histograms are for the remote stimuli—the histograms are nearly identical. The p-values shown, however, are derived from their appropriate histograms.

For this case (channel 4), the prestimulus 10-Hz power is not exceptional ($p \leq 0.093$) when compared with the rest of the data in this series. The postsession 10-Hz power is exceptionally small—94.4% of the 2000 Monte Carlo cases produce 10-Hz power larger than the observed value. The ratio of pre- to poststimulus 10-Hz power is significant ($p \leq 0.093$). In other words, the change in 10-Hz power across the stimulus boundary primarily results from a large drop (relative to the rest of the data) in power just after the stimulus.

Significant changes in 10-Hz power are also observed in channel 7 ($p \leq 0.038$), while no significant changes are observed for the pseudostimuli. Channels 4 and 7
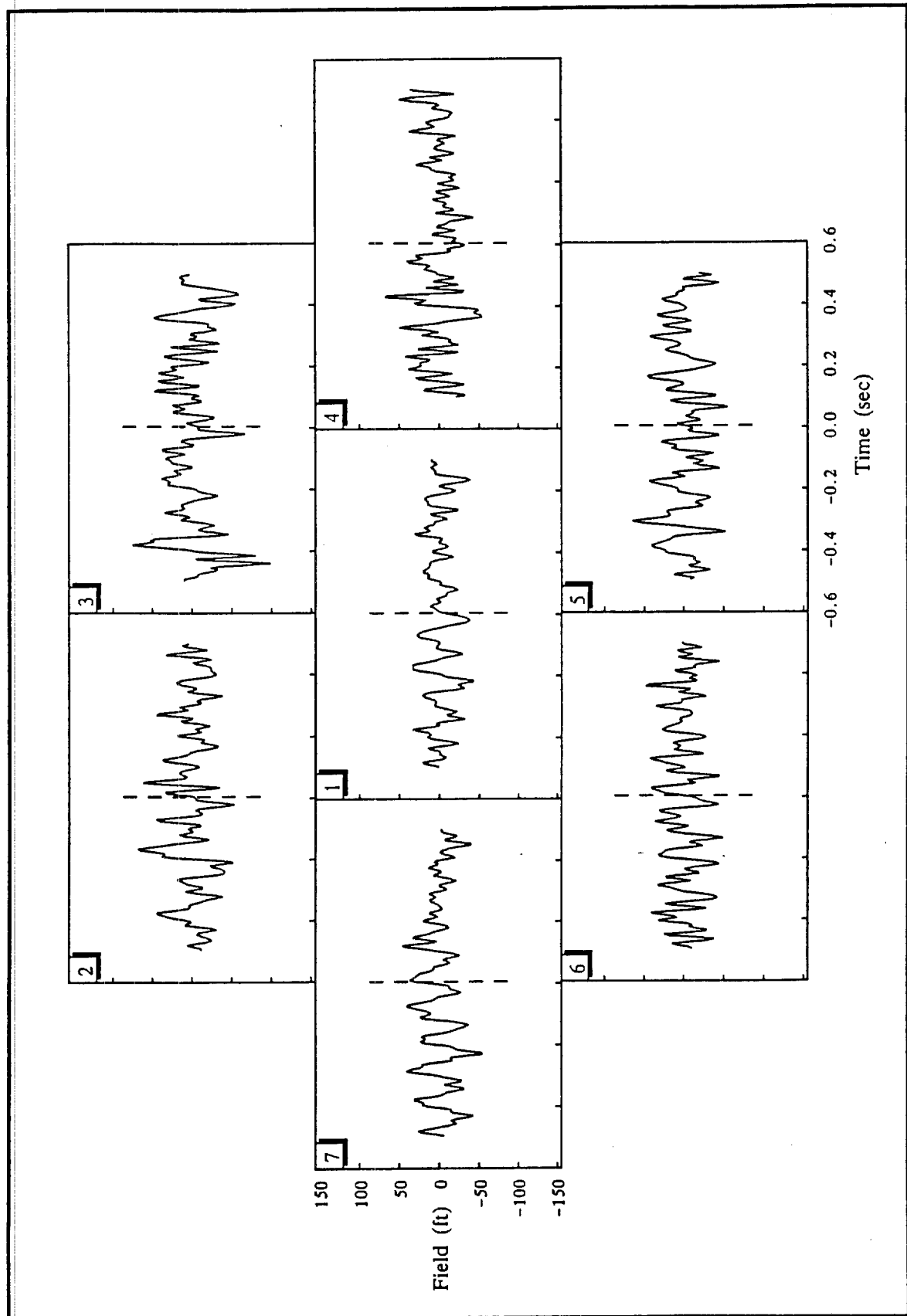
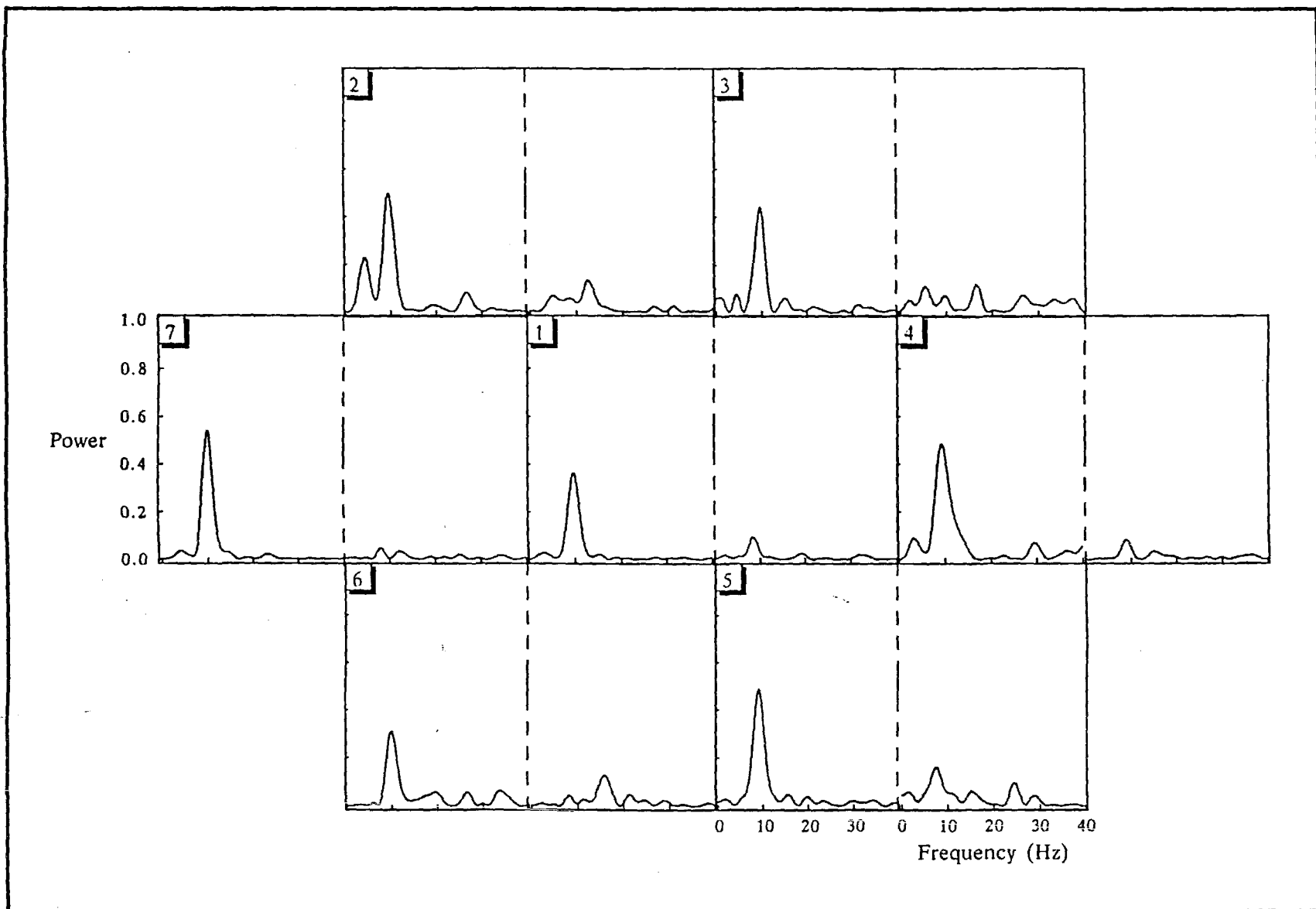FIGURE 7   (U) TIME SERIES: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V002, 8/25/88

20

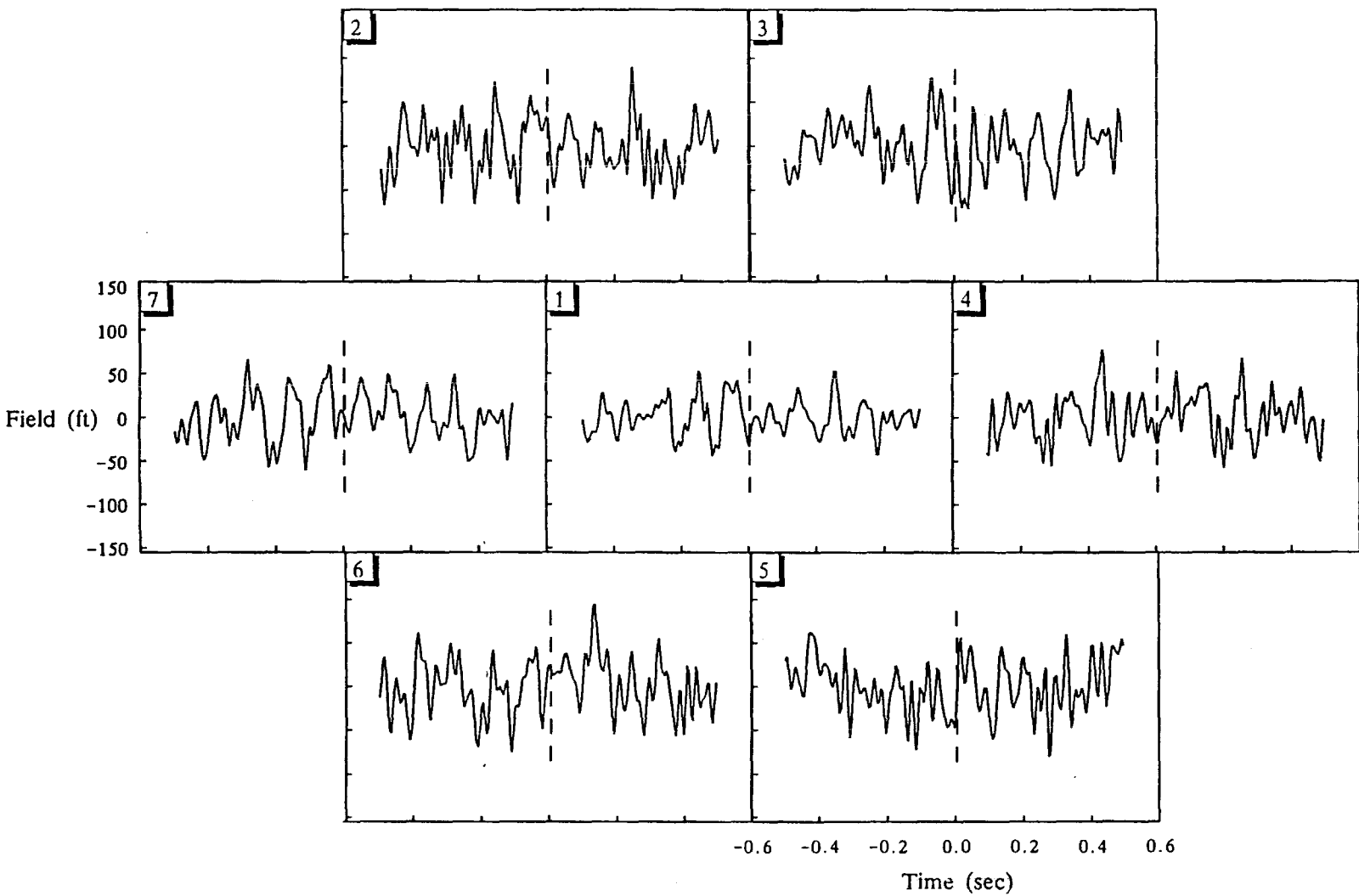FIGURE 8 (U) POWER SPECTRA: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V002, 8/25/88

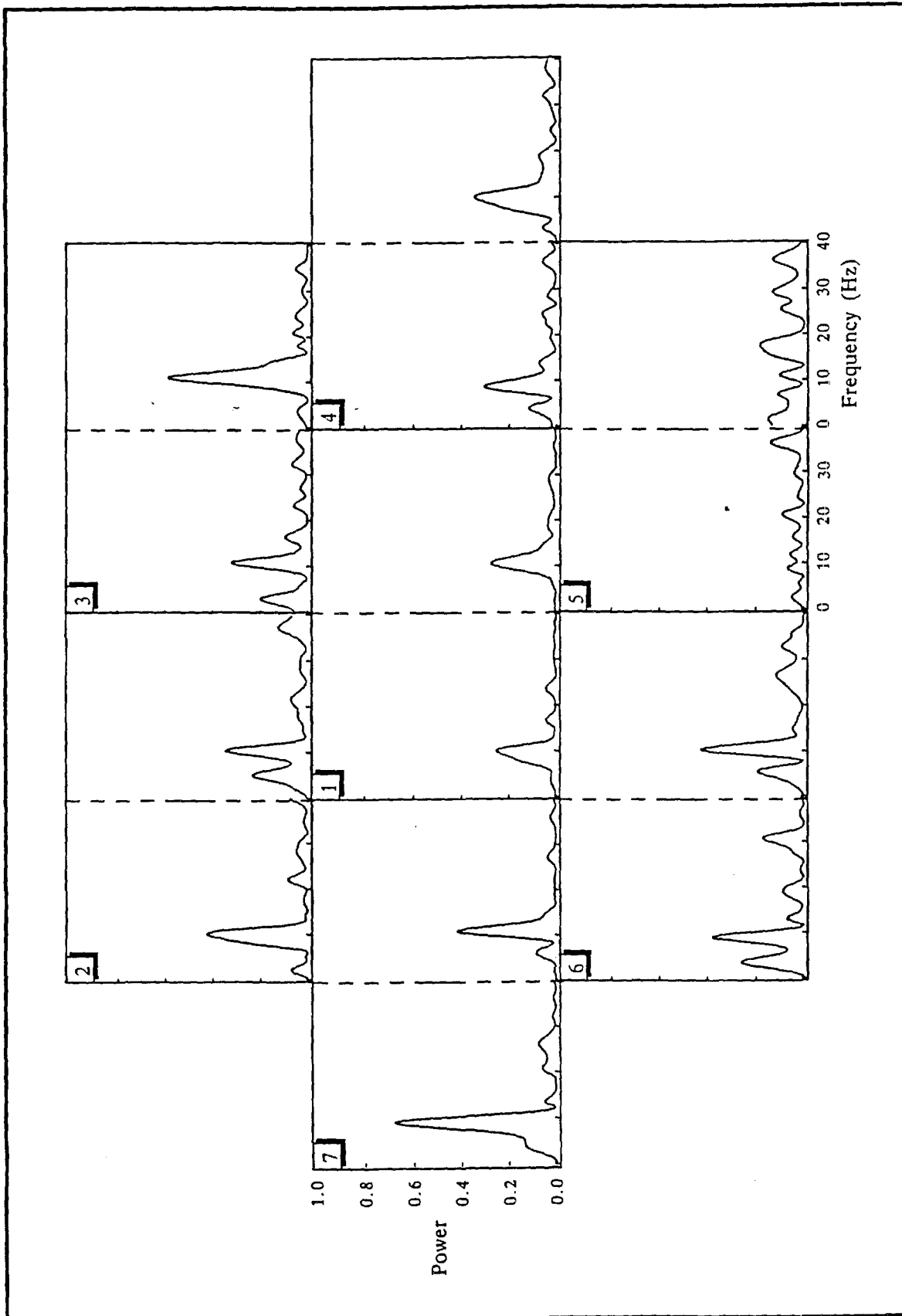JRE 9   (U) TIME SERIES: −0.5 TO +0.5 SECONDS FROM PSEUDO STIMULI — V002, 8/25/88

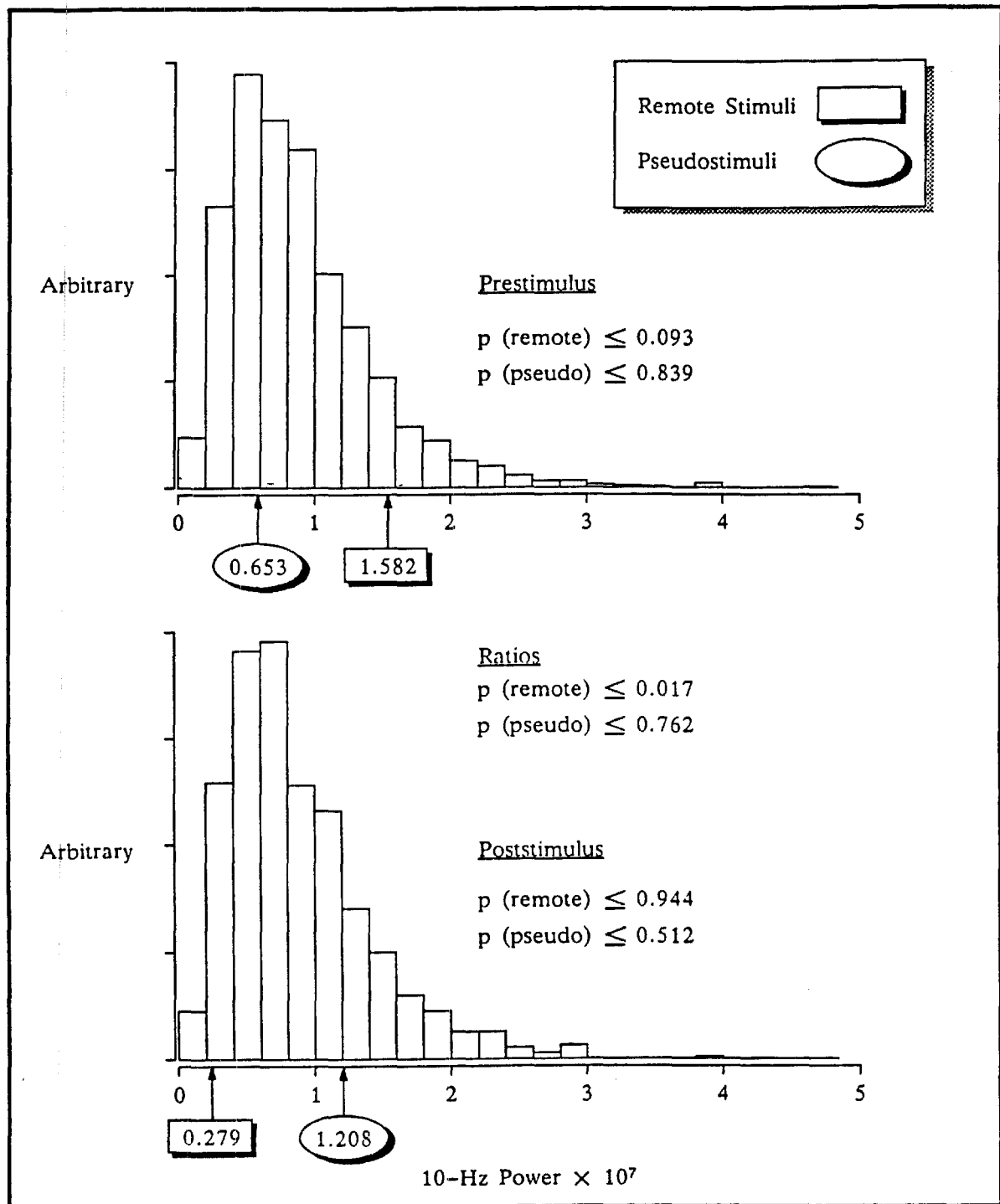FIGURE 10 (U) POWER SPECTRA: −0.5 TO +0.5 SECONDS FROM PSEUDO STIMULI — V002, 8/25/88

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Arbitrary

Prestimulus

p (remote) ≤ 0.093

p (pseudo) ≤ 0.839

Remote Stimuli

Pseudostimuli

0.653   1.582

Ratios

p (remote) ≤ 0.017

p (pseudo) ≤ 0.762

Arbitrary

Poststimulus

p (remote) ≤ 0.944

p (pseudo) ≤ 0.512

0.279   1.208

10–Hz Power × 10^7

FIGURE 11 (U) 10–HZ POWER: CHANNEL 4—V002, 8/25/88

show significant decreases in total 0– to 40–Hz power (p ≤ 0.002, 0.033, respectively), but no pseudostimuli show significant changes.

A postsession background series was conducted with both sender and viewer absent from the experimental area (see Section II.B). Figures 12 and 13 show the time series and power spectra, respectively, for the background "remote" stimuli. As can be seen from the power spectra (all data for this day are plotted on the same vertical scale), overall power is sharply reduced, reflecting that the MEG was not observing any CNS activity. Qualitatively, the changes shown for the experimental conditions (remote stimuli) do not result from noise in the MEG hardware.

These qualitative results are confirmed by the Monte Carlo analysis. The p–values for the changes in 10–Hz and total power for channel 4 are 0.406, and 0.141, respectively; for channel 7, the p–values are 0.993 and 0.243, respectively. The significant change in 10–Hz power in channel 7 is in the opposite direction from that observed under experimental conditions.

During the series on 25 August 1988, V002 kept his eyes closed throughout the session. On 26 August, V002 was instructed to keep his eyes open. Similarly to the analysis of the 25 August series, the Monte Carlo analysis shows a sharp decrease in 10–Hz power (p ≤ 0.100) and a significant decrease in total power (p ≤ 0.049) for the CNS activity detected in channel 4. No significant changes are observed for channel 7, nor are significant changes seen in the pseudostimuli. The change from 25 to 26 August might result from a slight change in positioning of the detector array.

Figure 14 shows the positions of the detector array, relative to the inion, for V002 for the 25 and 26 August placement of the detector arrays. The magnitude of change in detector placement is approximately twice the magnitude of the changes used in searching for the response to direct stimulus during initial calibration. This relatively large position change could account for the reduction in changes across the stimulus boundary.

2.   (U) Viewer 009

Viewer 009 visited Los Alamos National Laboratory from 20–24 June 1988. During that time, V009 participated in one psi series on 24 June 1988. Figure 15 shows the time series data averaged over 97 trials, displayed –0.5 to +0.5 seconds from the remote stimulus. Figure 16 shows the power spectra for the 0.5–second pre– and poststimulus times for all channels.
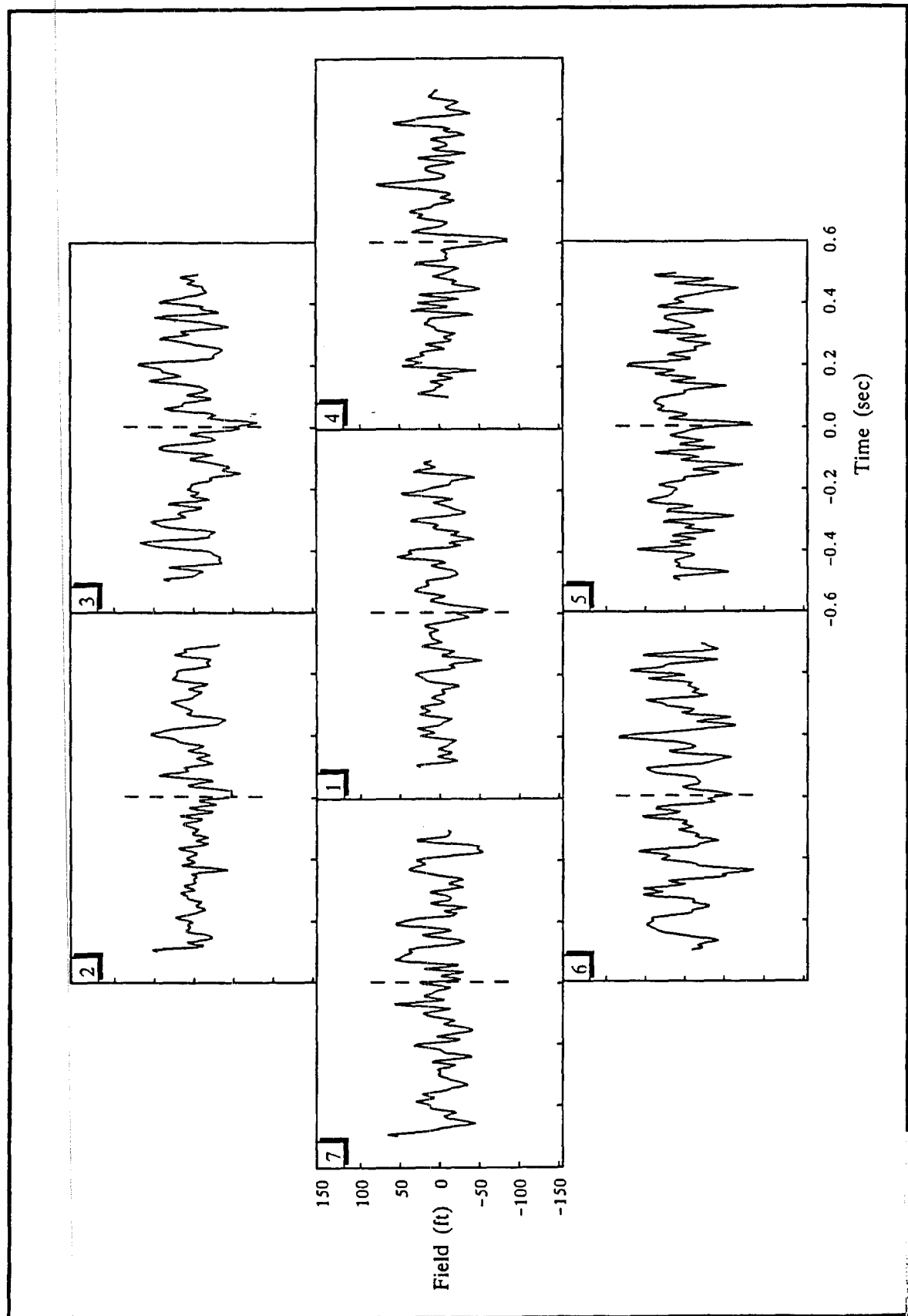
24

FIGURE 15 (U) TIME SERIES: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V009, 6/24/88
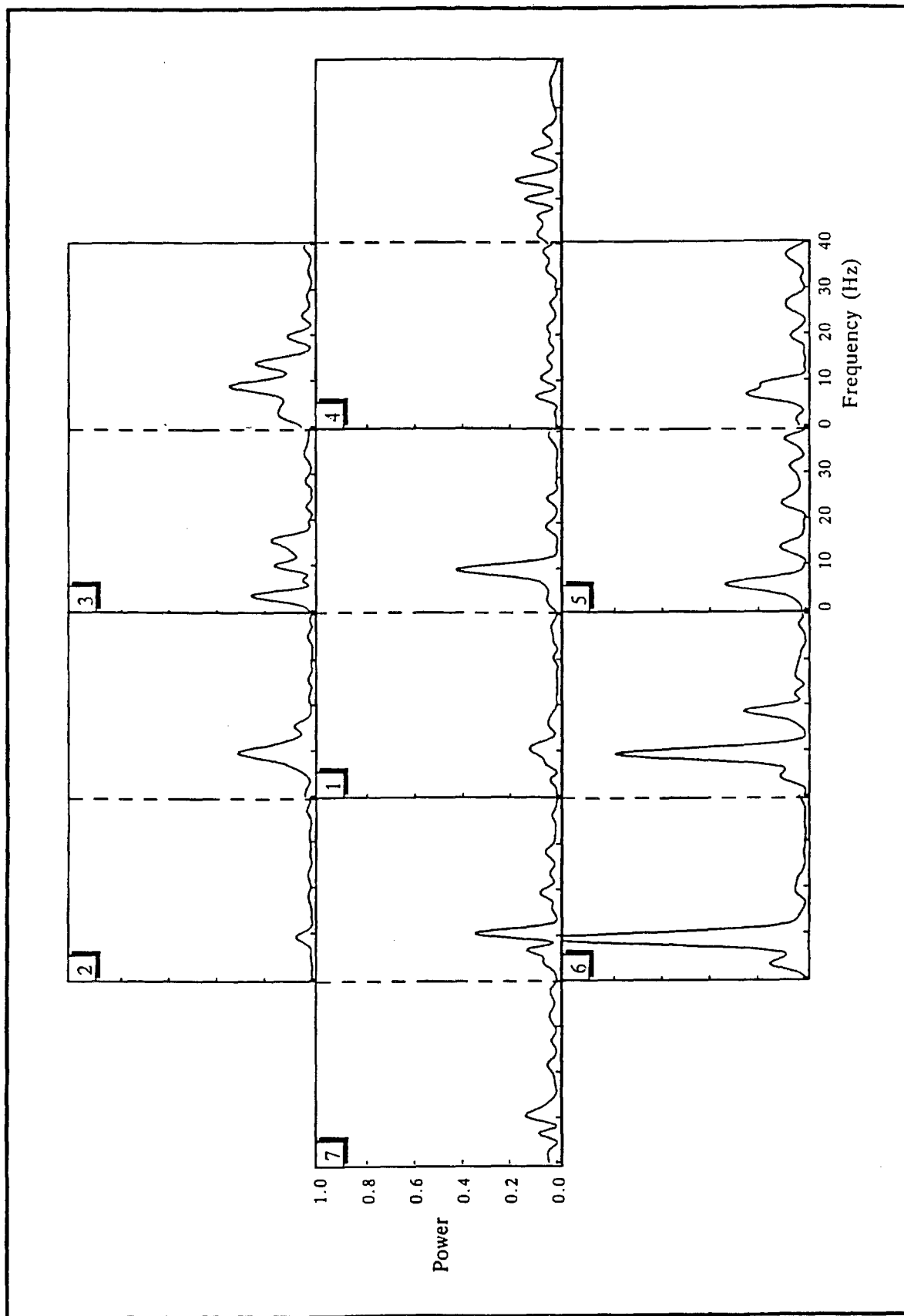
FIGURE 16 (U) POWER SPECTRA: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V009, 6/24/88
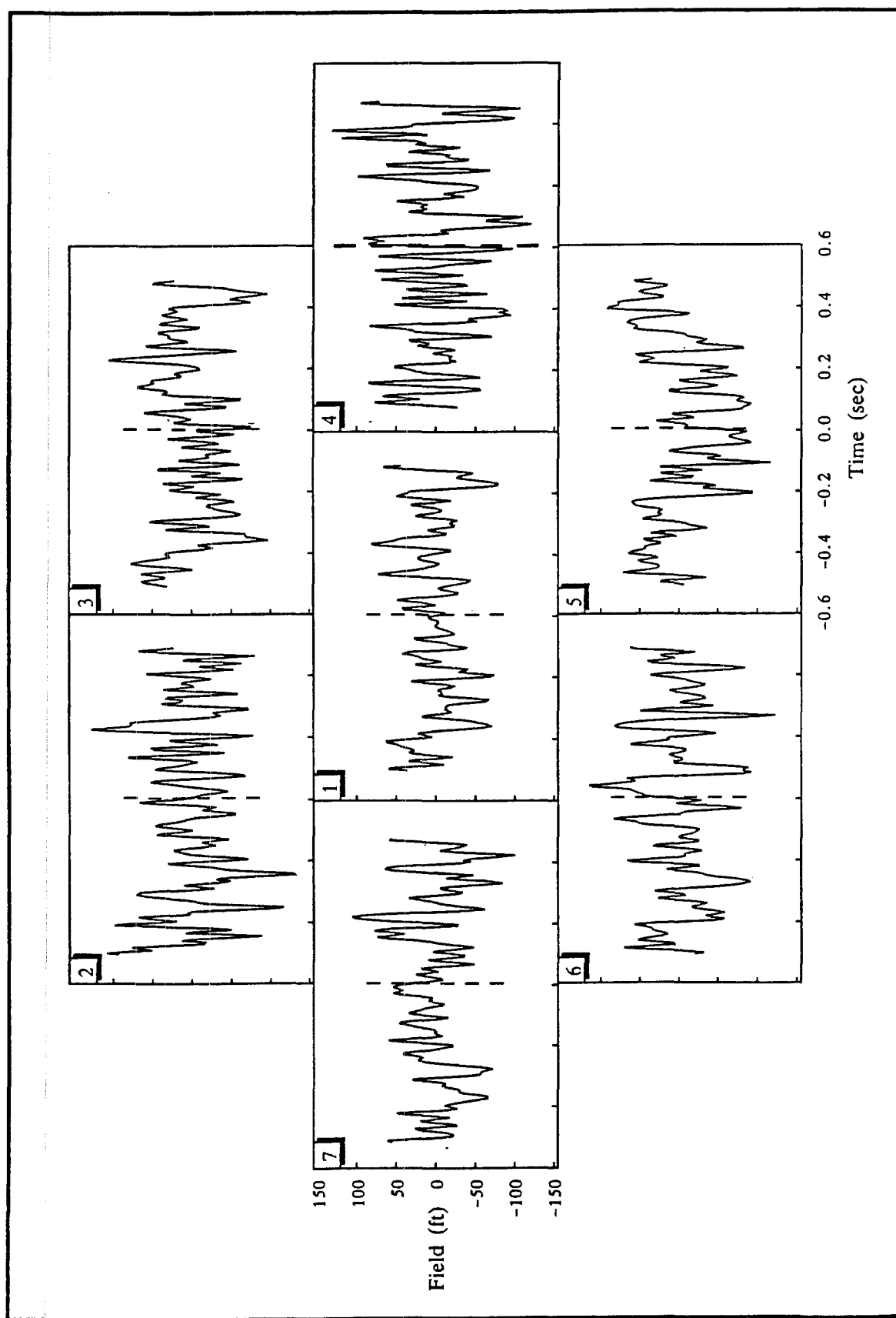
FIGURE 17 (U) TIME SERIES: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V372, 10/19/88
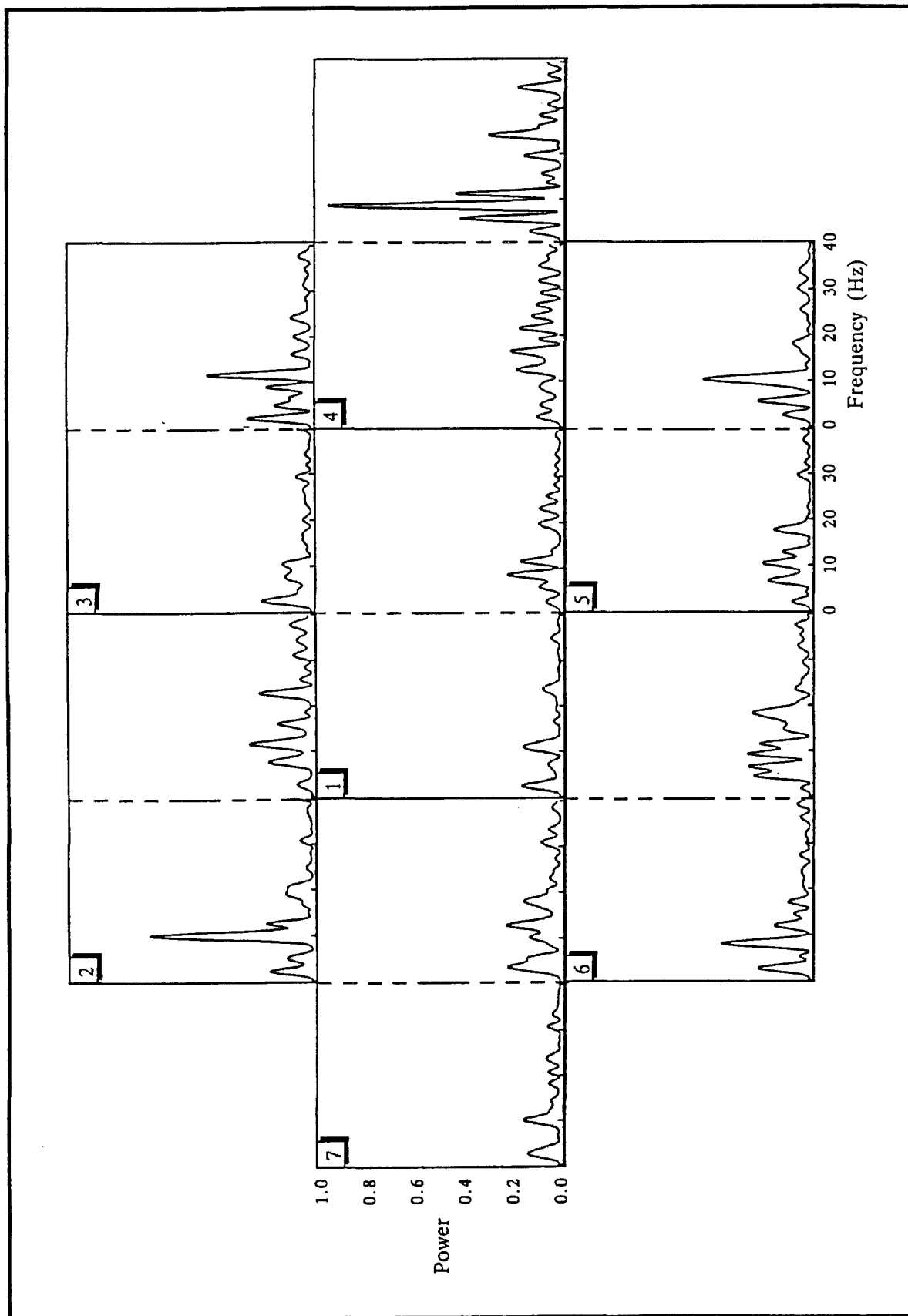
FIGURE 18 (U) POWER SPECTRA: –0.5 TO +0.5 SECONDS FROM REMOTE STIMULI – V372, 10/19/88

Using the Monte Carlo technique we find channel 4 shows a significant increase in 10-Hz power (p ≤ 0.038), and channels 3 and 5 show similar trends. The strong peak at 8.9 Hz in channel 4 is significantly larger in the poststimulus condition.

Figures 19 and 20 show the time series and power spectra for the pseudostimuli. The 10-Hz and total power in channel 4 show no change across the stimulus boundary (p ≤ 0.667 and p ≤ 0.506, respectively). Channel 3 also shows no significant changes in the 10-Hz and total power (p ≤ 0.140 and p ≤ 0.180, respectively). Channel 5, however, shows a significant increase in total power (p ≤ 0.026), and a strong increase (p ≤ 0.082) in 10-Hz power.

C.   (U) Psi Protocol Results—Vassy Consideration

(U) Because the Vassy and psi protocol both present a remote stimulus to the viewer, the candidate peak seen in the Vassy protocol data should also be seen in the psi protocol data. One run on one channel is shown in Figure 21 for each participant in the psi protocol experiment.

V009's data show a candidate peak within ±2 ms of the candidate peak identified under the Vassy protocol. Similarly, small peaks are seen for the other two viewers. The cross-viewer normalized average is also shown in Figure 21.

D.   (U) Psi Protocol Results—Button-Press

(U) In the early SRI studies significant changes in alpha production were observed in response to a remote stimulus. The statistical evidence, however, did not indicate that the viewer was able to recognize a remote stimulus cognitively (i.e., the viewer's button presses did not exceed mean chance expectation).

(U) In the psi protocol of the current experiment, viewers are asked to press a button whenever they think a remote stimulus occurs. The total number of trials during a series of 10 runs is not known in advance because of the trial randomization procedures. To determine if a viewer is cognitively sensing the remote stimuli, the null hypothesis that the probability of a time interval having a stimulus is the same for those intervals with a button press as for those without a button press. In other words, the presence or absence of a stimulus is independent of the presence or absence of a button press.
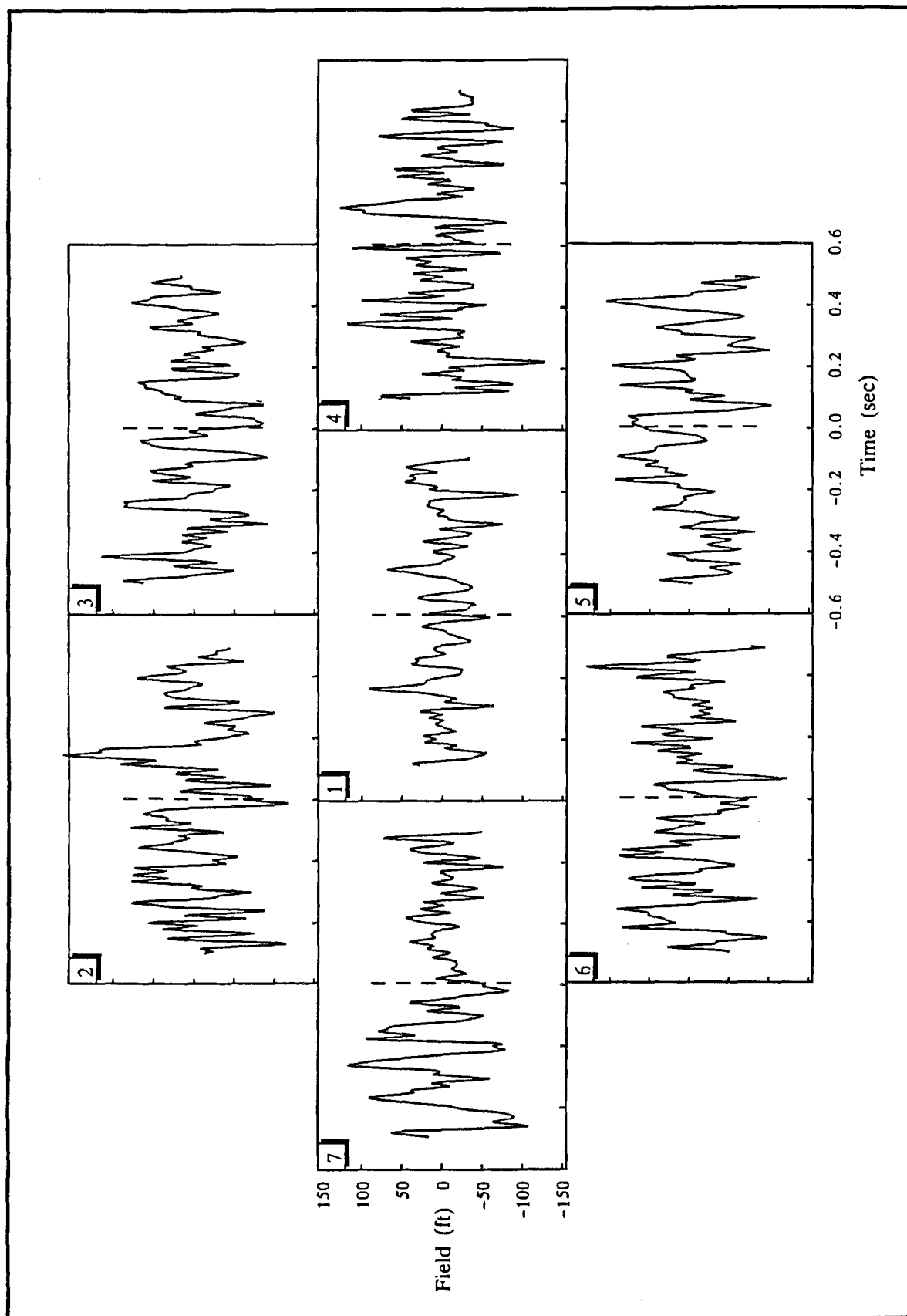
FIGURE 19 (U) TIME SERIES: −0.5 TO +0.5 SECONDS FROM PSEUDO STIMULI − V372, 10/19/88
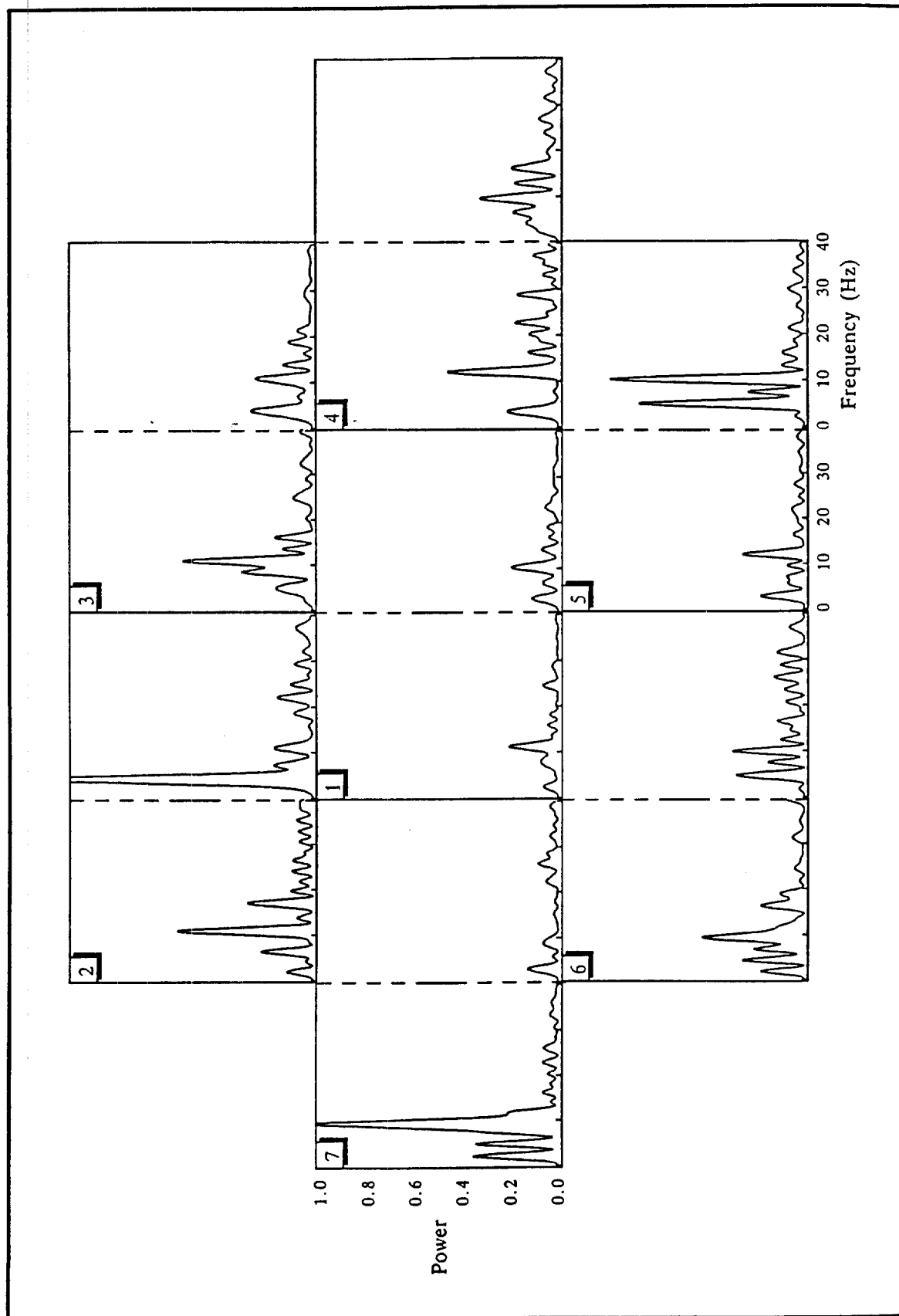
FIGURE 20 (U) POWER SPECTRA: −0.5 TO +0.5 SECONDS FROM REMOTE STIMULI — V372, 10/19/88
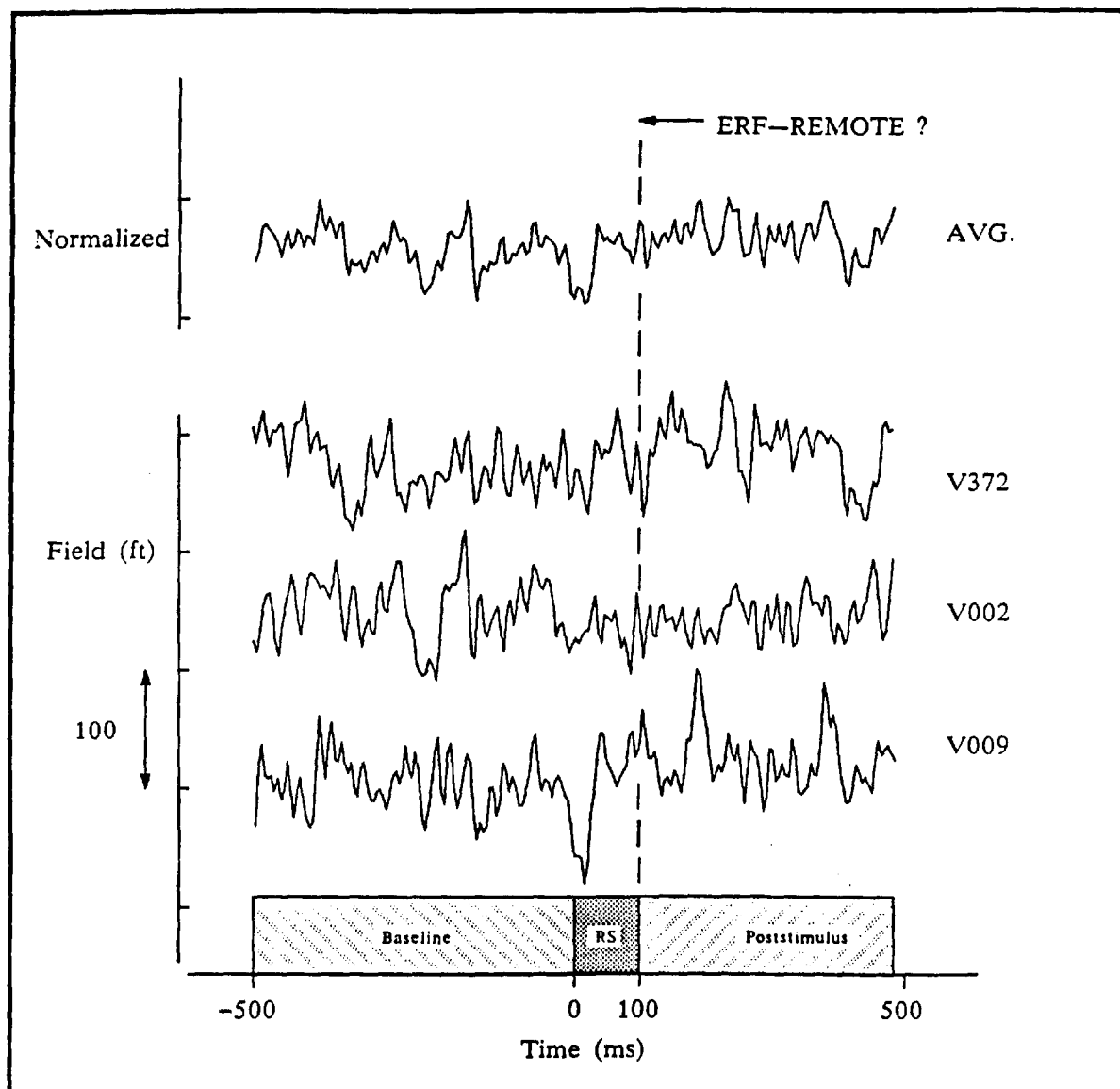
FIGURE 21 (U) VASSY PROTOCOL—AVERAGES FOR EACH VIEWER

(U) To test the hypothesis, the entire series is broken into 1–second intervals. Table 1 shows the format for data accumulated for one series.

Table 1

(U) DATA FORMAT

		Stimulus	
		Yes	No
Response	Yes	A	B
	No	C	D

UNCLASSIFIED

(U) The fractional hitting rate is $p_1 = A/(A+B)$, and the fractional missing rate is $p_2 = C/(C+D)$. The total number of 1–second intervals is $N = (A+B+C+D)$, and the total stimulus rate is $p_0 = (A+C)/N$. Then the following statistic is approximately normally distributed with a mean of 0 and a variance of 1 under the null hypothesis:

$$z = \frac{(p_1 - p_2)}{\sqrt{p_0(1 - p_0)\left(\frac{1}{(A + B)} + \frac{1}{(C + D)}\right)}} \ .$$

Table 2 shows N, p_0, p_1, p_2, z, p–value, and the effect size, r, for the three psi protocol series for which button press data exist. As in the early SRI study, nothing indicates cognitive recognition of the remote stimuli.

Table 2

(U) BUTTON PRESSING RESULTS

Viewer	N	p_0	p_1	p_2	z	p	r
002	1210	0.167	0.198	0.164	0.951	0.163	0.027
009	1280	0.091	0.068	0.094	−0.978	0.836	−0.027
372	1089	0.157	0.119	0.160	−0.996	0.840	−0.030

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IV DISCUSSION AND CONCLUSIONS (U)

██████ We have observed two types of CNS activity possibly related to a response to a remote stimulus. The first of these (changes in alpha and/or total power) is generally considered to be less localized than an ERF to a direct stimulus. Thus, one expects that changes of power across a remote stimulus boundary should be seen in some related channels.

██████ This is the case for V002 (Figure 8). While channels 4 and 7 show significant changes across the stimulus boundary, a qualitative trend is clear for all channels. The associated pseudostimuli show no obvious trends. Viewer 009 demonstrates significant changes in 10-Hz power in channel 2, and strong changes in channels 1 and 7 (Figure 16). The grouping of these channels might indicate a broad neuronal source in the channel-2 direction.

██████ The data from V372 (Figure 18) are less clear. Alpha power changes significantly in channel 4, and a qualitative trend is clear in channels 3 and 5, but the trend is less obvious than for V002 or V009. V372 posed a special problem. Anatomically, his strongest response to a direct visual stimulus was located below the inion—a difficult location to reach with the MEG. To obtain good data, V372 was required to hunch his head forward by bracing his arms under his chest. During a long session (20 minutes), V372 could have relaxed slightly from this uncomfortable position and pulled away from the detector array. In this location, some detectors were positioned just above V372's neck.

██████ Considering that all three viewers (002, 009, and 372) showed a change (increase or decrease) in total or 10-Hz power across a remote stimulus boundary, and considering that this constitutes a positive replication of SRI's earlier work, we probably observed a response to a remote stimulus.

██████ The situation is much less clear concerning a localized response to a remote stimulus. While a candidate peak has been identified using the Vassy protocol and later observed using the psi protocol, a quantitative measure must be developed to determine the probability of observing peaks with similar timing in the same data but with random pseudostimuli.

(U) This work will be continued during the first half of FY 1989.

November 1985

White Paper

PSI COMMUNICATIONS EXPERIMENTS (U)

INTRODUCTION (U)

One potentially important aspect of psi phenomena is that no methods exist currently for shielding or jamming the psi "signal". The implications of this are quite apparent—namely, that a psychoenegetic method of communication may be impervious to interference and may represent, therefore, a truly secure channel for message–sending. Traditionally, the major impediments to deploying a psi communications system have centered on the difficulties inherent in receiving highly analytical information accurately and reliably. From a basic research perspective it is believed, at present, that degredation of psychoenergetic reception of analytical information may be at least in part attributable to:

- The *analytical* nature of the information, which has traditionally been a difficult area to address

- Delay in presentation of feedback to the percipient

- Displacement phenomena occurring as a result of requiring the percipient to perform multiple tasking with *global* (as opposed to *trial–by–trial*) feedback.

The aim of this white paper is to explore how these problems in psi communication might be addressed by research, with the ultimate aim, if successful, of conceptually replicating Czech researcher Milan Ryzl's experiments, in which five three–digit numbers were correctly identified by subject Pavel Stepanek (cf. Appendix A). The area of psychoenergetic message–sending is not being addressed currently by any of SRI's clients given the relative dirth of information we would like to propose a shift in emphasis towards foreign experimental replication by initiating a careful investigation of the Ryzl experiment.

(U) Of the three fundamental "problem areas" ennumerated above, the analytical nature of the information is, perhaps, the easiest to address in communications experiments—i.e., the psychological biases inherent in the reception of numbers can be
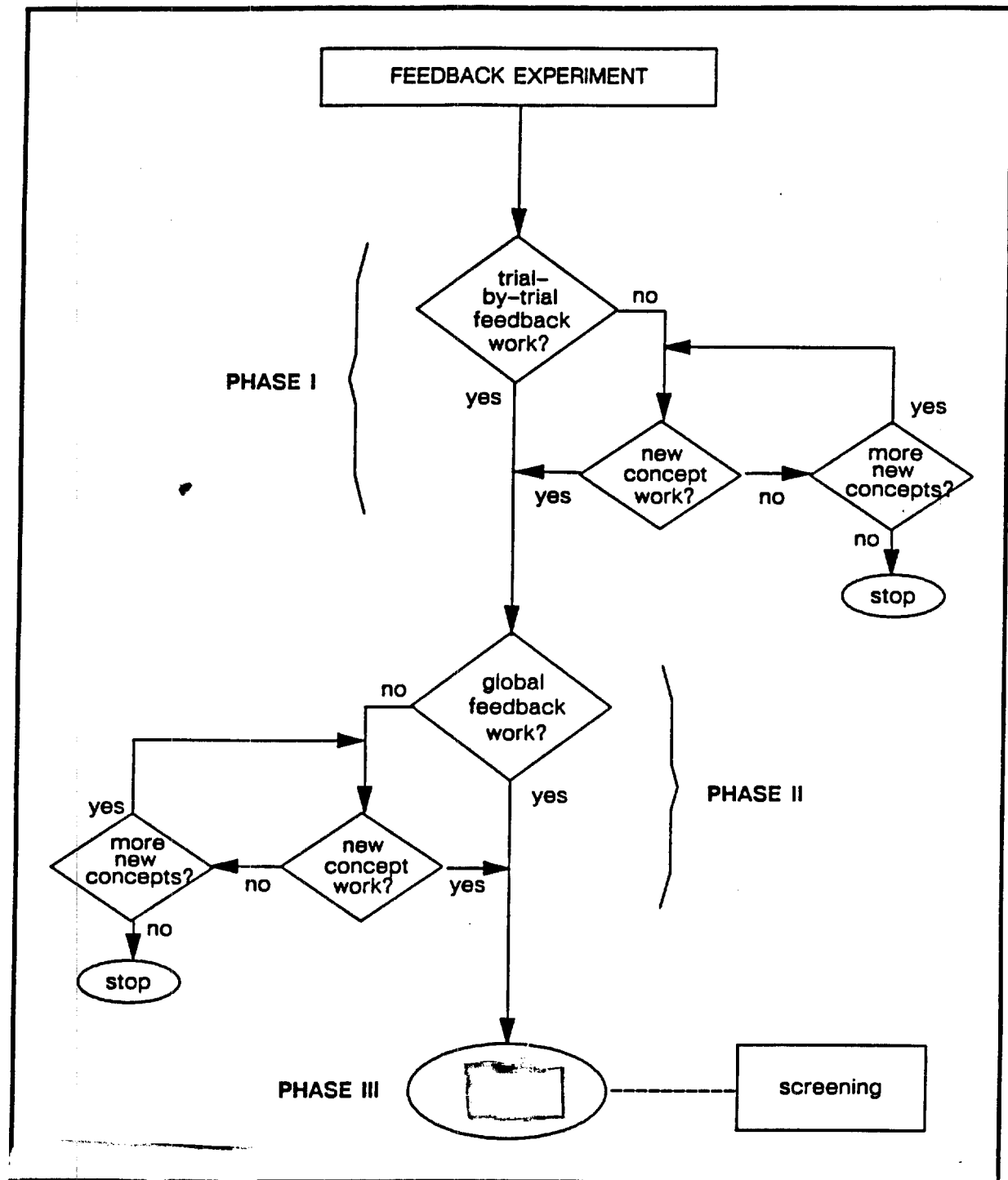
1

FIGURE 1 FLOW CHART DEPICTING RESEARCH PATHS FOR
DEPLOYMENT OF PSI MESSAGE–SENDING CAPABILITY

PHASE I (U)

(U)   Phase I will examine the effects of increasingly delayed feedback on performance. The proposed experiments will be performed using a computerized binary search program (b.search), which can easily be linked to a "real world" coin flip task and requires no extensive evaluation. Feedback will be provided on a trial–by–trial basis according to the following schedule:

(1)   Twenty–five binary choice trials with immediate feedback

(2)   Twenty–five binary choice trials with feedback delayed in each case by one hour.

(3)   Twenty–five binary choice trials with feedback delayed in each case by two hours.

(4)   Twenty–five binary choice trials with feedback delayed in each case by four hours.

(5)   Twenty–five binary choice trials with feedback delayed in each case by 24 hours .*

(U)   If degradation in functioning does not occur as a result of increasingly delayed feedback, then the global feedback experiments proposed in Phase II can be initiated.

████████ If degradation of performance does occur, then the decay rate should be identifiable, and it should be possible to determine whether the decay rate is subject–specific or universal. In any case, to ameliorate this situation, Phase I proposes that a new technique known as *bracketing*, which has been hitherto untested, be applied in order to provide closure for experiments in which degradation of performance has occurred because of feedback delay. Specifically, *bracketing* refers to the performance of identical experiments with immediate feedback directly before and after the delayed feedback experiment, in the same manner as "on–line" check experiments have been employed previously in operational remote viewing. The hypothesis under consideration is that these bracketing experiments may serve to provide

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* We have chosen 25 trials in each condition, because at the observed hit rate of 75%, 25 trials are sufficient to demonstrate significance.

space/time anchors for the subject, thereby defining a discrete location in space and time for reception of the delayed feedback information. This experimental series will also yield information, incidentally, concerning the veracity of the "on-line check," prior claims being that on-line checks with known targets can accurately provide calibration for those experiments in which feedback is delayed or nonexistent ███████████ If bracketing is unable to address the delayed feedback signal attenuation problem, then other new concepts (presently uknown, but perhaps focussing on making the feedback more of an "event") will have to be applied successfully before the Phase II series of global feedback experiments can be initiated.*

---

*It is logical to assume that if trial-by-trial delayed feedback experiments fail, global feedback experiments will also fail, because they entail delayed feedback by definition.

6

DISCUSSION (U)

█████ The applications-oriented research proposed in this paper has been aimed ultimately at a statistically streamlined, conceptual replication of Milan Ryzl's work with subject Pavel Stepanek. Given the encouraging beginning we have made in a pilot series with one subject, to whom trial-by-trial feedback was administered on a binary choice task, it is important to determine how such functioning is maintained in the global, delayed feedback arena that is typical of the █████ world in general. Some of the parameters that might be uncovered in the course of the proposed research program may also have important implications for other areas of psychoenergetic applications such as remote viewing.

█████ Should the Ryzl experiment be able to be replicated in the proposed fashion, the implications for a █████ reliable psi comunications system are apparent in terms of █████ potential.

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