

- Approved For Release 2000/08/10 OVAFRゅE:

Attachment to ORD 2240-75


## COMMIDRATIAL <br> OOTMTIDLINTIAL

This document is made available through the declassification efforts and research of John Greenewald, Jr., creator of:

## The Black Vauit



The Black Vault is the largest online Freedom of Information Act (FOIA) document clearinghouse in the world. The research efforts here are responsible for the declassification of hundreds of thousands of pages released by the U.S. Government \& Military.

Discover the Truth at: httpi/www.theblackvault.com departure from random expectation during the successful run, and therefore, the significant result cannot be attributed to machine malfunction. At a later time, subject S 2 was asked to repeat the entire experiment, and he was able to replicate successfully a high mean scoring rate (27.88/100 average over 2500 trials, a result whose a priori probability under the null hypothesis is $p=4.8 \times 10^{-4}$ ).

We thus conclude from this part of the study that of the six subjects tested, one subject (S2) generated a significant result replicable and not attributable to machine malfunction.

Finally, the study taken as a whole (15,750 trials) was significant, yielding an average scoring rate 26.47 hits/lo0 trials, a result whose a priori probability under the null hypothesis is $p=1.1 \times 10^{-5}$. The bit rate associated with the information channel can be calculated from

$$
R=H(x)-H_{y}(x)
$$

where $H(x)$ is the uncertainty of the source message containing symbols with a priori probability $\mathrm{P}_{\mathrm{i}}$

$$
H(x)=\sum_{i=1}^{4} p_{i} \log _{2} P_{i}
$$

and $H_{y}(x)$ is the conditional entropy based on the a posteriori probabilities that a received symbol was actually transmitted

$$
H_{y}(x)=-\sum_{i, j=1}^{4} P(i, j) \log _{2} p_{i}(j)
$$

Approved For Release 2000/08/10 : CIA-RDP96-00787R000200150006-0 For $\mathrm{S}^{\prime}$ 's first run, with $\mathrm{P}_{\mathrm{i}}=1 / 4, \mathrm{P}(\mathrm{k}, \mathrm{k})=0.2936$, and an average of 30 seconds per choice, we have a source uncertainty $H(x)=2$ bits and a calculated bit rate $\therefore$

$$
R \approx 0.007 \mathrm{bits} / \text { symbol }
$$

or

$$
\mathrm{R} / \mathrm{T} \approx 2 \times 10^{-4} \mathrm{bits} / \mathrm{sec}
$$

