ROUTING AND RECORD SHEET

INSTRUCTIONS.—Officer designations should be used in the "TO" column. Under each comment a line should be drawn across sheet and each comment numbered to correspond with the number in the "TO" column. Each officer should initial (check mark insufficient) before further routing. This Record and Routing Sheet should be returned to Registry.

FROM: [redacted], Medicine Division, O/SI

NO.

DATE 20 [illegible] 1975

TO—	ROOM NO.	DATE RECEIVED	DATE FORWARDED	OFFICER'S INITIALS	COMMENTS
1. Chief, Ops/SI		30 Mar 54	1 Apr.	[redacted]	(2) - This translation by [redacted] is an interesting report of clinical experimentation with LSD 25 — [illegible] required reading, but if you have time you will find [illegible] background. [redacted]
2. AD/SI.			[illegible]	[redacted]	
3. Chief, Med.				[redacted]	(3) A copy of this, in final form, should be sent to FDD for their central collection of translations. [redacted] [redacted]
4. ~~3~~					
5. ~~City~~					See [redacted]
6. 9-5					#2 If you are available [illegible] to send (1) [redacted] (2) [redacted] + (3) [redacted]
7.					Please note.
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D-Lysergic Acid Diethylamide (LSD-25)

Resume

Although the effects of ergot have been known and experienced by many countries down through recorded history,[1] the parent compound, lysergic acid, was not discovered until 1934.[2] The LSD effect on the mind was not observed until 1943.[3] LSD produces a wide range of pharmacological, physiological and psychophysiological reactions in both man and animals.[4, 5, 6]

Some of the more outstanding effects are the mental confusion, helplessness and extreme anxiety which are produced by minute doses of this substance.[5, 7] Based upon these reactions, its potential use by enemy nations in offensive psychological warfare and in interrogation is considerable and it may become one of their most important psycho-chemical agents. To date there is no known antidote.

Great interest in ergot has been shown by the Soviet bloc countries. Due to low potency of the ergot collected in East German rye fields, Mothes and co-workers have undertaken the cultivation of selected strains of ergot and the artificial infection of both rye and barley.[9]

The manufacture of lysergic acid is controlled by SANDOZ Ltd. of Switzerland to whom the patent was issued.[10] This company until recently had a virtual monopoly on the purchase of ergot grown in the United States. In the United States considerable interest has been

aroused in psychochemical agents and particularly in lysergic acid for use in psychiatric hospitals. Admixtures containing lysergic acid diethylamide other than with barbiturates to shorten the period of apprehension have apparently not been tried. The biosynthesis of d-lysergic acid diethylamide has not been attempted in this country as far as we know.

Probably the greatest difficulty in the effective exploitation of lysergic acid and its derivatives is the difficulty in extrapolating experimental animal data back to humans in order to predict results.[11] Although some of the research workers are known to be reluctant to use this compound for clinical research, some research on the material has been clinically evaluated and recorded both in Boston and New York.[12-14]

SUMMARY

1. D-Lysergic Acid Diethylamide is a psychochemical agent of considerable potential value as a strategic agent.
2. The Soviet Union has shown great interest in it and has procured considerable quantities of it.
3. The SANDOZ Ltd of Switzerland is the major manufacturer of this substance.
4. Research on psychological studies with this agent is going on in this country.
5. The synthesis of this compound is long and difficult, and 15 stages occur in the organic synthesis. The yield of this material is known to be very low when obtained through partial synthesis from ergot.

6. No biosynthesis is being undertaken in this country.

7. Some clinical data are available on its use both in this country -- and in Europe.

APPENDIX A

Selected LSD References

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8. W. Mayer-Gross, McAdam, W., Walker, J. W. NATURE, London, Vol. 168, pp. 827-828. 1951 "Psychological & Biochemical Effects of Lysergic Acid Diethylamide."

9. Mothes, K., & Silber, H. "Cultivation of Ergot" Die Pharmazie, VII, pp. 310-313, 1952.

10. Patent Specification 579,424. Appl. Date (U.K.) April 28, 1944. Granted August 6, 1946.

11. Becker, A. M. "The Psychopathology of the Lysergic Acid Diethylamide Effect." Wien. Z. Nervenhk. Vol. II, pp. 1-54. 1949. ID. 740993

12. Rinkel, M., DeShon, H. J., Hyde, R. W. & Solomon, H. C. "Experimental Schizophrenia-Like Symptoms." American Journal of Psychiatry, Vol. 108, pp. 572-578, 1952.

13. DeShon, H. J., Rinkel, M., & Solomon, H. C.: "Mental Changes Experimentally Produced by Lysergic Acid Diethylamide." The Psychiatric Quarterly, Vol. 26, pp. 33-53, 1952.

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APPENDIX B

Life Cycle of Ergot

a. Head of rye with prominent hardened, dark-red fungus bodies - ergot

b. Sprouting ergot with several stalked globular heads

c. Flask-shaped cavities imbedded in the surface of a single head

d. Single cavity with numerous tube-like sexual sacs or asci

e. Filiform ascspores in closed and opened sacs

f. Single ascspores, capable of infecting rye flowers, forming a mycelium therein

g. Mycelium, spreading in the grain tissue, forming bead-like, asexual spores (conidia) for further infections