



THE BLACK VAULT

This document was obtained from The Black Vault, an online database of declassified government documents. This particular record is housed in the MKULTRA/Mind Control Collection, a compilation of more than 20,000 pages declassified by the Central Intelligence Agency (CIA).

The entire collection is free to download and online at:

<http://mkultra.theblackvault.com>

10 20 30 40 50 60 70 80 90
14 September 56

1 Subject: Conference on Aircrew Viability and Performance Monitoring.

2 to: [] Life Sciences Research Advisory Group.

3 A. Background Information:

4 1. Over the past 15 years considerable interest and effort has
5 periodically been focussed on the problem of determining, as a functi
6 of time and place in the flight path, the precise state of
7 an aircrew members consciousness and purposeful responsiveness.
8 Although a wide range of psychophysiologic parameters have been
9 studied and many different technics of remote monitoring have
10 been attempted, ~~was~~ the fact remains that, to date, there is no
11 proven operationally usable system available.

12 2. Currently the only reliable (reasonably) means of
13 determining the pilot's state of functional responsiveness
14 is by voice communications with him through the radio link.
15 If for any reason voice communications are lost by virtue of
16 range, spherics, power failure or 'things happening too fast
17 in the cockpit for the pilot to use the radio' then, in the
18 event of a fatal accident, the true status of the pilot throughout
19 the terminal emergency period may never be known. It is a well-known
20 fact that a significant per centage of fatal accidents are listed
21 as 'couse unknown.' As a corollary to this latter fact is the
22 rather dubious indirect inference which is drawn to the factor
23 of 'pilot error' or 'hypoxia' as being the basic causative factor
24 all of which might well constitute a completely erroneous conclusion.

25 3. Newcomers to the field of physiologic monitoring are frequent
26 perplexed as to why, with all of the work going on in NASA, DOD &
27 NIH R&D groups, we have yet to fly an operationally proven and
28 reliable system. The simplest reply to such a query is to state that
29 no system thus far has been able to satisfy all the requirements
30 (and constraints imposed) set by such factors as; pilot comfort &
31 mobility; aircraft electronics & power supply; reliability of
32 the indicator(s) provided to the monitor at his observation post.
33 It is unfortunately true that with all of the equipment, personnel
34 and flying hours available to those of us in the Armed Services,
35 we have yet to justify and mount a prggam which, over a period
36 of reasoble time, would give us a usable solution to this very
37 important problem. Perhaps, with the newly-injected interest
38 of the FAA and the Commercial Airlines generated by Porthcoming
39 flight test and operational use of the SuperSonic Transport,
40 we may be able to focalize our interests and integrate our
41 resources in a more productive program than we have had in the past.

B. Directions of Current Programs:

1. Previous reference has been made to the fact that, at the present time there are a large number of programs underway which contain various degrees of inference in this particular problem. NASA continues to support a broad spectrum of research and development in this area of physiological monitoring and data retrieval, much of which has, at the very least, what could be called 'negative value' to this specific requirement, since their operational and scientific objectives are, understandably, more broader-based than this particular one. The term 'negative value' is applied only in the context that we can use the results of their R & D programs as indicators that certain avenues of approach are neither feasible or practical for our specific objectives. These areas of investigation are concerned principally with the sensing of a fairly large amount of psycho-physiological data which when properly coded, cross-referenced and integrated can be stored on board, read out on a rapid time sequence or used individually and/or collectively to signal a significant change in viability or performance to ground monitors or other companion crew members. This isn't at all to say that if a simple type of viability or performance indicator based upon a new principle were developed they would have no use for it, but rather that because of their broad operational requirements, they must work toward more complicated and sophisticated systems than this objective represents.

2. In a similar sense, the DOD aerospace medical efforts in the biotelemetry field are largely directed toward the rather complex and sophisticated systems of personnel monitoring as are envisioned as being required for the MDL program. Although one finds considerable dispersed interest expressed by operational flight surgeons assigned to flight and test activities and in some AF special projects; one does not find a large scale interest backed up by financial support within the R&D commands for a device of such seeming simplicity. One might even say that the operational people can, in effect, see no justification in developing such a capability.

3. If one then looks over into the clinical field of the intensive care monitoring projects supported by NIH, there is found virtually the same type of closely contained interest and directions; namely the attainment of a reliable capability to sense and display with great rapidity, minute and detailed changes occurring in a patient who already is in a state of criticality -- and therefore represents no true analogue of our human component in his operational environment and milieu. Again, as in the case of the NASA and DOD work, there is undoubtedly some guidance which we can obtain from the NIH work which may prove of value but at the same time the glib coordinators must realize that there is no direct and easy extrapolation from the sick room to an aircraft nor from a severely ill or damaged patient to the (initially) healthy air crew member.

10 20 30 40 50 60 70 80 90

1 C. Summary of Current Status:

2
3 1. There is no (known) R,D & T program in the field of physiologic
4 cal monitoring which has, as its principal objective, the ability
5 to reliably determine the functional and responsive state of the
6 aircrew member under operational conditions.

7
8 .2 The objectives of on-going NASA and DOD programs in this
9 area of biotechnology are primarily directed toward;

10 a. improving the quality and quantity of bio-signals,

11 b. integrating and automatizing certain bio-variables
12 in order to provide more significant and readily
13 interpretable real time information to the ground
14 medical monitors for flight safety decisions.

15 c. to facilitate and validate the read-out and
16 interpretation of large amounts of in-flight psycho-
17 physiological data for both short and long range
18 research studies.

19 d. to provide greater comfort and mobility to the
20 flight crew in wearing the bio-sensor rigs.

21 e. to optimize the amount of ^{valid} bio-information
22 handled within the prescribed limitations of
23 power, band-width and recording modes available.

24
25 3. The objectives of on-going programs in this area
26 being prosecuted under the aegis of the Government
27 Health Agencies are primarily directed toward the
28 improvement in the institutionalized care of the sick
29 particularly under critical conditions requiring
30 'intensive care.'

31
32 4. Fringe areas of interest such as are ~~found~~-expressed
33 in a wide variety of uncoordinated projects and programs
34 are found in such fields as; sport medicine; industrial
35 health & hygiene; parachuting & sky diving and underwater
36 exploration and habitation. The principal results to date
37 of these programs which have some ancillary bearing on
38 our specific objective are:

39 a. the improvement of the wearability of the bio-
40 monitoring rigs by individuals working (or playing)
41 under a wide variety of/activities.
42 environmental conditions and

2. Subject population for use by Dr. [redacted] group in their further experimental studies is largely composed of flying personnel and air traffic controllers, the majority of whom have been followed by the GCRI for at least 4 years. Additional subjects are readily available from the student body and also as volunteers from the local government organizations.

3. Within the above subject population group are a number of individuals with proven coronary disease who have been quite extensively studied on a continuing basis. Displaying a wide variety of 'patterns' of cardio-vascular malfunction in the form of electro-mechanical and acoustical abnormalities, they provide a template of sorts against which can be measured certain patterns of early changes in 'normal' individuals which may prove useful in predicting 'pre-coronary' susceptibility.

4. Based on a premise that these same early, abnormal responses found in both aged pilots and those with coronary disease might be indicative of degraded cardio-vascular function in a younger individual with poor, intrinsic stress-response characteristics, it would appear feasible and potentially valuable to join with this group, in the furtherance of our own studies.

5. In addition, (to the reason given in #4 above) it would be equally valuable for [redacted] to have immediately available, a completely equipped and operating laboratory research facility which would allow a quick reacting capability to assess and evaluate new techniques and procedures for possible further development and operational trial.