RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY

CRITICAL PROCESSING CONTROL ENTRIES			REPORTS CONTROL SYMBOL
01. AGCY ACCESSION *	02. DATE OF SUMM (YY MM DD) *	04. KIND OF SUMM REPORT	DD-R & E(AR) 636
DF 385315	700914	H. Termination	

ID/SEQ	03. DATE PREV SUMM (YY MM DD)	05. SUMM SEC *	06. WORK SEC *	07 REGRADING *	DISTRIBUTION INSTRUCTIONS 08 a1. 1ST CODE	08a2. 2ND CODE	08 b CONTR ACCESS	09. LEVEL OF SUMMAR
A01 (Punch ID/SEQ in Col 17-19)	691201	U	U		NL		X YES ☐ NO	A - WORK UNIT

PRIMARY NUMBER/CODE *				GENERAL USE (Do not punch)
10 a1 PROG ELM	10 a2 PROJECT NUMBER	10 a3. TASK AREA	10 a4. WORK UNIT NUMBER	
62202F	7757	01	005	

SECOND CONTRIBUTING NUMBER/CODE *			THIRD CONTRIBUTING NUMBER/CODE *		
B01	10 b1 PROG ELM	10 b2. PROJECT NUMBER	10 b3. TASK AREA	10 c1. PROG ELM	10 c2. PROJECT NUMBER	10 c3. TASK AREA

C01 C02 C03 11. TITLE - PRECEDE WITH SEC CODE IN PARENTHESIS - *

AIR4.950109.009

SCIENTIFIC AND TECHNOLOGICAL AREA CODES *			13. W/U START DATE (YY MM)	14. W/U EST COMPL DATE (YY MM)	FUNDING AGENCIES			16. PERFORMANCE METHOD
D01	12 a. PRIM	12 b. 2ND	12 c. 3RD			15 a. PRIM	15 b. 2ND	15 c. 3RD	

CONTRACT/GRANT DATA								
E01	17 a1. EFF DATE (YY MM)	17 a2. EXPR DATE (YY MM)	17 b. CONTRACT/GRANT NUMBER *	17 c. TYPE	17 d1. PART	17 d2. AMOUNT	17 e. KIND OF AWARD	17 f. CUMULATIVE AMT

PRECEDING F/Y RESOURCES ESTIMATE			CURRENT F/Y RESOURCES ESTIMATE		
F01	18.1 YEAR YY	18.1a PROF MAN YEARS	18.1b FUNDS IN THOUSANDS	18.2 YEAR YY	18.2a. PROF MAN YEARS	18.2 b. FUNDS IN THOUSANDS
	70	2.2	22	71	0.5	5

RESPONSIBLE DOD ORGANIZATION

G01 G02 19 a. ORGANIZATION NAME *

H01 19 b. ORGANIZATION ADDRESS *

J01 19 c. NAME OF RESPONSIBLE INDIVIDUAL — 19 d PHONE

PERFORMING ORGANIZATION

K01 K02 20 a. ORGANIZATION NAME *

L01 L02 20 b. ORGANIZATION ADDRESS *

M01 20 c. NAME OF PRINCIPAL INVESTIGATOR * — 20 d. PHONE — 20 e. S SAN

N01 20 f. ASSOCIATE INVESTIGATOR — 20 g. 2ND ASSOCIATE INVESTIGATOR

P01 THRU P26 22. KEYWORDS - PRECEDE EACH WITH SECURITY CODE IN PARENTHESIS AND SEPARATE WITH A SEMICOLON.

23 TECHNICAL OBJECTIVE OR SCIENTIFIC ABSTRACT. * 26. APPROACH. 25. PROGRESS - IDENTIFY EACH PARAGRAPH BY NUMBER AND PRECEDE TEXT WITH SEC CODE IN PARENTHESIS

25. (U) The following information covers the reporting period from 1 December 1969 to 31 August 1970. The primate phantoms developed under contract F41609-69-C-0037 and evaluated under this work unit are now used routinely to measure depth dose distributions for the USAFSAM Linear Acclerator (LINAC) as well as cyclotron and reactor produced dose profiles. A series of depth dose and uniformity measurements on the ^{90}Sr Beta plaques was completed and the data are being used to support skin irradiation studies. this work is being discontinued in an overall effort to provide better support to redirected mission responsibilities in accordance with the AMD Plan.

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73A5310-B04

Suitland Records Ctr

DD FORM 1498 JUL 68 (PROPOSED REVISION - AFSC T

1. * AVAILABLE TO CONTRACTORS UPON ORIGINATOR APPROVAL.
2. NOTE: KEYPUNCH GUIDANCE IS PROVIDED IN PARENTHESIZED PORTION OF ITEM TITLES

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY

CRITICAL PROCESSING CONTROL ENTRIES (Col 2-16 of all cards)			REPORTS CONTROL SYMBOL
01. AGCY ACCESSION*	02. DATE OF SUMM *	04. KIND OF SUMM REPORT	DD-R&E(AR)636
DF385315	691201	D. Change	

10/SEQ	03. DATE PREV SUMM	05. SUMM SEC*	06. WORK SEC*	07. REGRADING*	DISTRIBUTION INSTRUCTIONS 08a1. 1ST CODE	08a2. 2ND CODE	08b CONTR ACCESS	09. LEVEL OF SUMMARY
A01	690916	U	U		NL		X YES ☐ NO	A - WORK UNIT

(Punch ID/SEQ in Col 17-19)

PRIMARY NUMBER/CODE * 10a1. PROG ELM	10a2. PROJECT NUMBER	10a3. TASK AREA	10a4. WORK UNIT NUMBER	GENERAL USE (Do not punch)
62401F	7757	01	005	

SECOND CONTRIBUTING NUMBER/CODE * 10b1. PROG ELM	10b2. PROJECT NUMBER	10b3. TASK AREA	THIRD CONTRIBUTING NUMBER/CODE * 10c1. PROG ELM	10c2. PROJECT NUMBER	10c3. TASK AREA
B01					

C01 C02 C03 — 11. TITLE - PRECEDE WITH SEC CODE IN PARENTHESIS.*

(U) Development of Dose Measuring Technics for Aircrew Environments

SCIENTIFIC AND TECHNOLOGICAL AREA CODES * 12a. PRIM	12b. 2ND	12c. 3RD	13. W/U START DATE YY MM	14. W/U EST COMPL DATE YY MM	FUNDING AGENCIES 15a. PRIM	15b. 2ND	15c. 3RD	16. PERFORMANCE METHOD
D01 014100			6307	Cont	DF			C. In-house

CONTRACT/GRANT DATA

17a1. EFF DATE	17a2. EXPR DATE	17b. CONTRACT/GRANT NUMBER*	17c. TYPE	17d1. PART	17d2. AMOUNT	17e. KIND OF AWARD	17f. CUMULATIVE AMT
E01							

PRECEDING F/Y RESOURCES ESTIMATE 18.1 YEAR YY	18.1a PROF MAN YEARS	18.1b FUNDS IN THOUSANDS	CURRENT F/Y RESOURCES ESTIMATE 18.2 YEAR YY	18.2a. PROF MAN YEARS	18.2b. FUNDS IN THOUSANDS
F01 69	2.0	30	70	2.2	22

RESPONSIBLE DOD ORGANIZATION

G01 G02 — 19a. ORGANIZATION NAME*: USAF School of Aerospace Medicine

H01 — 19b. ORGANIZATION ADDRESS*: Brooks AFB, Texas 78235

J01 — 19c. NAME OF RESPONSIBLE INDIVIDUAL: Mitchell, J G — 19d. PHONE: 512 536 x3511

PERFORMING ORGANIZATION

K01 K02 — 20a. ORGANIZATION NAME*: USAF School of Aerospace Medicine

L01 L02 — 20b. ORGANIZATION ADDRESS*: Brooks AFB, Texas 78235

M01 — 20c. NAME OF PRINCIPAL INVESTIGATOR*: Mitchell, J C — 20d. PHONE: 512 536 x3511 — 20e. SSAN

N01 — 20f. ASSOCIATE INVESTIGATOR: Hardy, K A — 20g. 2ND ASSOCIATE INVESTIGATOR: Hurt, W D

P01 THRU P25 — 22. KEYWORDS - PRECEDE EACH WITH SECURITY CODE IN PARENTHESIS AND SEPARATE WITH A SEMICOLON.

(U) Dosimetry (U) radiation measurement

23. TECHNICAL OBJECTIVE OR SCIENTIFIC ABSTRACT. * 24. APPROACH. 25. PROGRESS - IDENTIFY EACH PARAGRAPH BY NUMBER AND PRECEDE TEXT WITH SEC CODE IN PARENTHESIS.

23. (U) To develop and implement technics for measuring radiation doses and depth dose distribution resulting from exposures to ionizing radiation. This effort supports Task 7757-05 "Biological Effects of Nuclear Environments," and data are directly related to performance changes and facilitate extrapolation to man's response in strategic weapons systems.

24. (U) Several types of both active and passive dosimeter systems are being studied and developed. Applications range from the use of NBS calibrated tissue equivalent ionization chambers (TEIC) to establish precise exposure rates to the use of very thin (20 micron) thermoluminescent dosimeters to measure short range depth dose profiles in animals. Studies include systematic investigations of energy dependence, linear response, saturation effects, sensitivities, etc., to electrons, protons, neutrons, gamma, and x-rays.

25. (U) Routine dosimetry support for eleven field trips to radiation facilities remote from USAFSAM and twenty or more in-house experiments was provided during this past year. Over 15,000 dosimeter readings were made. Refinements were made in thermoluminescent technics to allow more accurate measurements for lower radiation doses. Results of the quarterly electron dosimetry intercomparison measurements with the National Bureau of S[illegible] istently within 2% of the NBS absolute values. A series of [illegible] ation chambers were calibrated at the NBS and subsequently use[illegible] FSAM Gamma Radiators. Specifications were prepared and a contr[illegible] warded to fabricate four special primate phantoms for use in [illegible]

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2. NOTE: KEYPUNCH GUIDANCE IS PROVIDED IN PARENTHESIZED PORTION OF ITEM TITLES

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY

CRITICAL PROCESSING CONTROL ENTRIES

01. AGCY ACCESSION *	02. DATE OF SUMM YY MM DD *	04. KIND OF SUMM REPORT
DF385315	~~690916~~	D. Change

REPORTS CONTROL SYMBOL DD - R & E(AR) 636

03. DATE PREV SUMM YY MM DD	05. SUMM SEC *	06. WORK SEC *	07. REGRADING *	DISTRIBUTION INSTRUCTIONS 08a1. 1ST CODE	08a2. 2ND CODE	08b. CONTR ACCESS	09. LEVEL OF SUMMARY
681115	U	U		NL		X YES [ ] NO	A - WORK UNIT

(Punch ID/SEQ in Col 17-19)

PRIMARY NUMBER/CODE *

10 a1. PROG ELM	10 a2. PROJECT NUMBER	10 a3. TASK AREA	10 a4. WORK UNIT NUMBER	GENERAL USE (Do not punch)
62401F	7757	01	005	

SECOND CONTRIBUTING NUMBER/CODE *

10 b1. PROG ELM	10 b2. PROJECT NUMBER	10 b3. TASK AREA

THIRD CONTRIBUTING NUMBER/CODE *

10 c1. PROG ELM	10 c2. PROJECT NUMBER	10 c3. TASK AREA

11. TITLE - PRECEDE WITH SEC CODE IN PARENTHESIS *

Development of Dose Measuring Technics

SCIENTIFIC AND TECHNOLOGICAL AREA CODES *

12a. PRIM	12b. 2ND	12c. 3RD

13. W/U START DATE YY MM	14. W/U EST COMPL DATE YY MM	16. PERFORMANCE METHOD
6307	Cont	

FUNDING AGENCIES

15a. PRIM	15b. 2ND	15c. 3RD

CONTRACT/GRANT DATA

17a1. EFF DATE YY MM	17a2. EXPR DATE YY MM	17b. CONTRACT/GRANT NUMBER *	17c. TYPE	17d1. PART	17d2. AMOUNT	17e. KIND OF AWARD	17f. CUMULATIVE AMT

PRECEDING F/Y RESOURCES ESTIMATE 18.1 YEAR YY	18.1a PROF MAN YEARS	18.1b FUNDS IN THOUSANDS	CURRENT F/Y RESOURCES ESTIMATE 18.2 YEAR YY	18.2a. PROF MAN YEARS	18.2 b. FUNDS IN THOUSANDS
69	2.0	30	70	1.5	20

RESPONSIBLE DOD ORGANIZATION

19a. ORGANIZATION NAME *

19b. ORGANIZATION ADDRESS *

19c. NAME OF RESPONSIBLE INDIVIDUAL | 19d. PHONE

PERFORMING ORGANIZATION

20a. ORGANIZATION NAME *

20b. ORGANIZATION ADDRESS *

20c. NAME OF PRINCIPAL INVESTIGATOR * | 20d. PHONE | 20e. SSAN

20f. ASSOCIATE INVESTIGATOR | 20g. 2ND ASSOCIATE INVESTIGATOR

22. KEYWORDS - PRECEDE EACH WITH SECURITY CODE IN PARENTHESIS AND SEPARATE WITH A SEMICOLON.

23. TECHNICAL OBJECTIVE OR SCIENTIFIC ABSTRACT * 24. APPROACH 25. PROGRESS - IDENTIFY EACH PARAGRAPH BY NUMBER AND PRECEDE TEXT WITH SEC CODE IN PARENTHESIS

25. (U) Routine dosimetry support for eleven field trips to radiation facilities remote from USAFSAM and twenty or more in-house experiments was provided during this past year. Over 15,000 dosimeter readings were made. Refinements were made in thermoluminescent technics to allow more accurate measurements for lower radiation doses. Results of the quarterly electron dosimetry intercomparison measurements with the National Bureau of Standards (NBS) were consistently within 2% of the NBS absolute values. A series of tissue equivalent ionization chambers were calibrated at the NBS and subsequently used to recalibrate the USAFSAM Gamma Radiators. Specifications were prepared and a contract (F41609-69-C-0037) awarded to fabricate four special primate phantoms for use in future dosimetric measurements.

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1. * AVAILABLE TO CONTRACTORS UPON ORIGINATOR' APPROVAL.
2. NOTE: KEYPUNCH GUIDANCE IS PROVIDED IN PARENTHESIZED PORTION OF ITEM TITLES.

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY

CRITICAL PROCESSING CONTROL ENTRIES

01. AGCY ACCESSION*	02. DATE OF SUMM* YY MM DD	04. KIND OF SUMM REPORT
DF385315	681115	D. Change

REPORTS CONTROL SYMBOL: DD - R & E(AR) 636

03. DATE PREV SUMM YY MM DD: 671130	05. SUMM SEC*: U	06. WORK SEC*: U	07. REGRADING*	DISTRIBUTION INSTRUCTIONS: 08a1. 1ST CODE: NL	08a2. 2ND CODE	08b. CONTR ACCESS: X YES ☐ NO	09. LEVEL OF SUMMA: A - WORK UNIT

PRIMARY NUMBER/CODE *

10 a1. PROG ELM	10 a2. PROJECT NUMBER	10 a3. TASK AREA	10 a4. WORK UNIT NUMBER
62401F	7757	01	005

GENERAL USE (Do not punch)

SECOND CONTRIBUTING NUMBER/CODE *

10 b1. PROG ELM	10 b2. PROJECT NUMBER	10 b3. TASK AREA

THIRD CONTRIBUTING NUMBER/CODE *

10 c1. PROG ELM	10 c2. PROJECT NUMBER	10 c3. TASK AREA

11. TITLE - PRECEDE WITH SEC CODE IN PARENTHESIS - *

SCIENTIFIC AND TECHNOLOGICAL AREA CODES *

12a. PRIM	12b. 2ND	12c. 3RD

13. W/U START DATE YY MM	14. W/U EST COMPL DATE YY MM

FUNDING AGENCIES

15a. PRIM	15b. 2ND	15c. 3RD

16. PERFORMANCE METHOD

CONTRACT/GRANT DATA

17 a1. EFF DATE YY MM	17 a2. EXPR DATE YY MM	17 b. CONTRACT/GRANT NUMBER *	17 c. TYPE	17 d1. PART	17 d2. AMOUNT	17 e. KIND OF AWARD	17 f. CUMULATIVE AMT

PRECEDING F/Y RESOURCES ESTIMATE			CURRENT F/Y RESOURCES ESTIMATE		
18.1 YEAR YY	18.1a PROF MAN YEARS	18.1b FUNDS IN THOUSANDS	18.2 YEAR YY	18.2a. PROF MAN YEARS	18.2 b. FUNDS IN THOUSANDS
68	2.0	0	69	2.0	0

RESPONSIBLE DOD

19a. ORGANIZATION NAME *: USAF School of Aerospace Medicine

19b. ORGANIZATION ADDRESS *: Brooks AFB, Texas 78235

19c. NAME OF RESPONSIBLE INDIVIDUAL: Hardy, K A

19d. PHONE: 512 536 X3470

PERFORMING

20a. ORGANIZATION NAME *: USAF School of Aerospace Medicine

20b. ORGANIZATION ADDRESS *: Brooks AFB, Texas 78235

20c. NAME OF PRINCIPAL INVESTIGATOR*: Hardy, K A

20d. PHONE: 512 536 X3470

20e. SSAN:

20f. ASSOCIATE INVESTIGATOR:

20g. 2ND ASSOCIATE INVESTIGATOR:

22. KEYWORDS - PRECEDE EACH WITH SECURITY CODE IN PARENTHESIS AND SEPARATE WITH A SEMICOLON.

(U) Dosimetry; (U) radiation measurement

23. TECHNICAL OBJECTIVE OR SCIENTIFIC ABSTRACT. * 24. APPROACH. 25. PROGRESS - IDENTIFY EACH PARAGRAPH BY NUMBER AND PRECEDE TEXT WITH SEC CODE IN PARENTHESIS.

25.(U) Several new dosimeter systems were added to the laboratory and developed to an operational status during this past year. Over 30,000 dosimeters were processed in support of radiobiological field trips and in-house research. Four inter-comparisons (one each calendar quarter) with the National Bureau of Standards (NBS) electron dosimetry program placed the USAFSAM dosimetry within 1-2% of the NBS absolute values.

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