
Item ID Number: 00174

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Report/Article Title Application File Description: Herbicide File (HERBIE - MACV) (HERB01 -
OASD/REPRO)

Journal/Book Title

Year 1971

Month/Day March 1

Color

Number of Images 17

Description Notes Description of a database of herbicide application mission data.

CHAPTER 1

FILE DESCRIPTION

Purpose

The purpose of the HERBIE file is to provide users with a means of retrieving herbicide mission history data. The data in the file is classified CONFIDENTIAL.

Information Types

Data in the file is presented in a single fixed record for each unique flight mission. Information on flight number, mission route, type and quantity of herbicide sprayed, abort reasons appeared in the original file (HERBIE). When the file was revised by OASD (REPRO) data on track length, flow rates, concentration rate and acres sprayed were added.

Input Source

The HERBIE file was developed for use by the Military Assistance Command, Chemical Operations Division, Vietnam. Data for this file was extracted from monthly worksheets prepared by Chemical Operations Division, MACV, using information received from their primary data sources.

File Revision History

The HERBIE file has been converted to a new and expanded file, HERB01. The data in the new file includes all of the data in HERBIE with the addition of several new data fields. This new data, designed to enhance analysis of herbicide missions, was developed by specially prepared programs using HERBIE data as input. The new data fields are identified in Chapters 2 and 3 by marking with an asterisk.

User Organization

The Regional Programs Division of the Office of the Secretary of Defense (OASD/REPRO) is the primary user of the information in this file.

Data Record Arrangement

Data contained in each record of the HERB01 file is arranged as follows:

Control Set - Uniquely identifies a record

1. Date of flight mission
2. Combat Tactical Zone over which a mission was flown
3. Mission Project Number
4. Multiple run of mission indicator
5. Multiple province mission coverage indicator.

Fixed Set

1. Province Data
2. Aircraft scheduled and delivery data
3. Herbicide type and gallons sprayed
4. Aircraft abort data
5. Run type
6. Acres sprayed
7. Concentration and flow rates
8. Total track length of mission.

Periodic Set 1 - Mission Track Data

1. Coordinate data - UTM and Lat/Long
2. Length of legs of track of mission

File Growth Rate

The file is not expected to grow except through corrections to present data records. It includes data from July 1965 to December 1970.

File Size

The file contains approximately 5100 fixed records and 13,500 periodic records. The record size ranges from 104 to 1216 bytes and the file occupies 20 cylinders of 2314 disk of space. A magnetic tape copy of this file is maintained.

CHAPTER 2

FILE FORMAT TABLE

File Name - HERB01

<u>FLD/GRP NAME</u>	<u>STATEMENT OPERATOR</u>	<u>FIELD SIZE</u>	<u>SPEC USE</u>	<u>MODE</u>
YY	FIELD	002	CTL	ALPHA
MM	FIELD	002	CTL	ALPHA
DD	FIELD	002	CTL	ALPHA
DATE	GROUP		---	ALPHA

FIELDS - YY MM DD

CTZ	FIELD	001	CTL	ALPHA
NUMBR	FIELD	008	CTL	ALPHA
XRUN	FIELD	001	CTL	ALPHA
MISSION	GROUP		---	ALPHA

FIELDS - NUMBR XRUN

MULTI	FIELD	001	CTL	ALPHA
PROJ	GROUP		---	ALPHA

FIELDS - CTZ MISSION MULTI

RECID	GROUP		---	ALPHA
-------	-------	--	-----	-------

FIELDS - DATE PROJ

FLAG	FIELD	001	---	ALPHA
SEQNO	FIELD	006	---	NUMER
PROV	FIELD	002	---	ALPHA
AIRF	FIELD	002	---	NUMER
AIRA	FIELD	002	---	NUMER
AIRP	FIELD	002	---	NUMER
AIR	GROUP		---	ALPHA

FIELDS - AIRF AIRA AIRP

AGENT	FIELD	002	---	ALPHA
GAL	FIELD	005	---	NUMER
AGGAL	GROUP		---	ALPHA

FIELDS - AGENT GAL

HIT	FIELD	002	---	NUMER
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<u>FLD/GRP</u> <u>NAME</u>	<u>STATEMENT</u> <u>OPERATOR</u>	<u>FIELD</u> <u>SIZE</u>	<u>SPEC</u> <u>USE</u>	<u>MODE</u>
MABRT	FIELD	001	---	NUMER
WABRT	FIELD	001	---	NUMER
BABRT	FIELD	001	---	NUMER
ABORT	FIELD	001	---	NUMER
FAIL	GROUP		---	ALPHA

FIELDS - MABRT WABRT BABRT ABORT

TYPE	FIELD	001	---	ALPHA
HECTARE	FIELD	008	---	NUMER
SQKILO	FIELD	008	---	NUMER
ACRES	FIELD	008	---	NUMER
AREAS	GROUP		---	ALPHA

FIELDS - HECTARE SQKILO ACRES

FIXED	GROUP		---	ALPHA
-------	-------	--	-----	-------

FIELDS - PROV AIR AGGAL HIT
FAIL TYPE AREAS

AREA	FIELD	008	---	NUMER
CONT	FIELD	008	---	NUMER
FLOW	FIELD	008	---	NUMER
TRACK	FIELD	008	---	NUMER
UTMID	FIELD	002	CTL	ALPHA
UTM	FIELD	008	---	ALPHA
LATLONG	FIELD	015	---	ALPHA
CORDS	FIELD	015	---	COORD
KMLEG	FIELD	004	---	NUMER
MILEG	FIELD	004	---	NUMER
ENDFS				

CHAPTER 3
FILE DETAIL

Field/Group names preceded by an asterisk (*) are new field/groups in HERB01. All other fields/groups appear in both the HERBIE and HERB01 versions of the Herbicide file.

Control Set

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
*YY	FIELD	2	65-70	ALPHA

This field contains the year of the mission, i.e., 70 for 1970.

*MM	FIELD	2	1-12	ALPHA
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This field contains the month of the missions, i.e., 04 for April.

*DD	FIELD	2	1-31	ALPHA
-----	-------	---	------	-------

This field contains the day of the mission.

DATE	F in HERBIE G in HERB01	6		ALPHA
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This data element contains the date of the mission.

*CTZ	FIELD	1	1-4	ALPHA
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This field identifies the Combat Tactical Zone over which the mission was flown.

*NUMBR	FIELD	8		ALPHA
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This field contains the mission project number which is normally six characters-left justified.

*XRUN	FIELD	1	A, B, C, etc.	ALPHA
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This field identifies the first, second, third, etc. run of the mission.

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
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*MISSION	GROUP	9		ALPHA
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This group contains a unique mission number for a project.

*MULTI	FIELD	1	X	ALPHA
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An 'X' in this field indicates that the mission covered more than one province; if blank, only one province.

PROJ	F in HERBIE G in HERB01	11		ALPHA
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This data element contains a unique identifier for each mission.

RECID	GROUP	17		ALPHA
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This group is composed of DATE and PROJ and provides a unique identification for each record in the file.

Fixed Set

*FLAG	FIELD	1	Table A-1	ALPHA
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This field is generated after analysis of the records or after the results of various statistical analysis have been calculated.

*SEQNO	FIELD	6		NUMER
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This field is generated by a special range program. The sequence number is used to facilitate preparation of plots.

PROV	FIELD	2	Table A-2	ALPHA
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This field contains a code representative of the province in which the mission was flown or, in case of a multi-province mission, the province in which the mission started.

AIRF	FIELD	2		NUMER
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This field contains the number of aircraft scheduled

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
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to fly the mission.

AIRA	FIELD	2		NUMER
------	-------	---	--	-------

This field contains the number of aircraft actually airborne for the mission.

AIRP	FIELD	2		NUMER
------	-------	---	--	-------

This field contains the number of aircraft actually making delivery (productive) on a mission.

*AIR	GROUP	6		NUMER
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This group contains the data elements AIRF, AIRA, and AIRP.

AGENT	FIELD	2	O=Orange B=Blue W=White	ALPHA
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This field contains the type of herbicide used on a particular mission.

GAL	FIELD	5		NUMER
-----	-------	---	--	-------

This field contains the number of gallons of herbicide sprayed during a mission.

*AGGAL	GROUP	7		ALPHA
--------	-------	---	--	-------

This group contains the data elements AGENT and GAL.

HIT	FIELD	2		NUMER
-----	-------	---	--	-------

This field contains the number of hits taken during a run.

MABRT	FIELD	1		NUMER
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This field contains the number of aborts, either air or ground, attributable to maintenance.

WABRT	FIELD	1		NUMER
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This field contains the number of aborts attributable to weather.

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
BABRT	FIELD	1		NUMER
This field contains the number of abortions attributable to battle damage.				
ABORT	FIELD	1		NUMER
This field contains the number of abortions attributable to sources other than BABRT, WABRT, and MABRT.				
*FAIL	GROUP	4		NUMER
This group contains the data elements MABRT, WABRT, BABRT, and ABORT.				
TYPE	FIELD	1	D=Defoil- ate C=Crop	ALPHA
This field contains the type of mission flown.				
*HECTARE	FIELD	8		NUMER
This field contains a three decimal place value equal to the reciprocal of the content of the field CONT.				
*SQKILO	FIELD	8		NUMER
Not used.				
*ACRES	FIELD	8		NUMER
Not used.				
*AREAS	GROUP	24		NUMER
This group contains the data elements HECTARE, and SQKILO and ACRES when used.				
*FIXED	GROUP	46		ALPHA
This group contains the data elements PROV, AIR, AGGAL, HIT, FAIL, TYPE, and ...S.				
*AREA	FIELD	8		NUMER

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
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This field contains the number of acres sprayed. (Not to be confused with field ACRES which is not used.) It is computed by multiplying TRACK by .08 by 247 by AIRP. The value contains two decimal places of precision.

*CONT	FIELD	8		NUMER
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This field contains the concentration of herbicide in gallons per acre. It is computed by dividing GAL by AREA. The value contains two decimal places of precision.

*FLOW	FIELD	8		NUMER
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This field contains the flow rate in gallons per second of herbicide dispensed from a single aircraft during a mission. It is computed by dividing GAL by a figure obtained by multiplying AIRP by TRACK by 14.95. The value contains two decimal places of precision.

*TRACK	FIELD	8		NUMER
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This field contains the total distance flown, in kilometers, during the spray portion of a mission, and is computed by summing the periodic field KMLEG. Each track contains at least two points, a start and stop point. The value is rounded and has no decimal places of precision.

Periodic Set 1

UTMID	FIELD	2		ALPHA
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This field contains the control field for the subsets. They represent either UTM coordinate start, turn or stop points, depending on the coordinate to which they are attached. A value of 10 represents the start point of the first leg of a mission and succeeding values (11, 12, 13, etc.) represent turn points. The last value in the run is the end point. A 20 or 30, etc. represents the start of a second or third leg of a mission and succeeding values represent turn points within that leg of the mission.

UTM	FIELD	8		ALPHA
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This field contains the UTM coordinate value

<u>ID</u>	<u>FIELD/ GROUP</u>	<u>LENGTH</u>	<u>CODE</u>	<u>DATA VALUES</u>
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which represents the point of start, turn, or stop of the leg of the mission.

*LATLONG	FIELD	15		ALPHA
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This field contains the latitude-longitude equivalent of the UTM value converted by a UTM conversion program.

*CORDS	FIELD	15		COORD
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This field contains the NIPS coordinate mode presentation of LATLONG and is included in the file to enable the execution of the circle search and polygon overlap features of NIPS.

*KMLEG	FIELD	4		NUMER
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This field contains the computed great circle distance in kilometers between adjacent coordinate points which defines a leg of a mission. KMLEGS for a mission are summed for TRACK.

*MILEG	FIELD	4		NUMER
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This field contains the converted value of KMLEG in miles, computed by multiplying KMLEG by .62.

CHAPTER 4

FILE MAINTENANCE

This file is static and no update or expansion is expected. Periodically, during analysis of the file, if an error in the data is found and the correct value for the error can be determined, the error is corrected. Otherwise, the record in error is flagged, and no further action is taken.

CHAPTER 5
RETRIEVAL AND OUTPUT

This file is new and standard reports have not been developed.

Output from HERBIE is responsive to the needs of OASD (REPRO) analysts and are of a one time report or plot requirement.

A formatted record dump has been prepared for display of data in each of the two HERBIE files. Additionally, Vietnam-wide plots of mission tracks by year and herbicide type have been prepared.

APPENDIX A

CODE TABLES

TABLE A-1

FLAG CODE LIST

Flag

- 1 Less than two UTM coordinates per track, or total number of aircraft in AIRP = 0 or blank, or total number of gallons in GAL = 0 or blank.
- 2 The concentration (CONT) is more than two standard deviations away from the mean.
- 3 The inversion of concentration is less than two standard deviations away from the mean.
- 4 Same as 2 except that FLOW is examined.
- 5 Conditions 2 and 3 exist at the same time.
- 6 Either conditions 2 and 4 or conditions 3 and 4 exist at the same time.
- 7 Conditions 2, 3, and 4 exist at the same time.

TABLE A-2
PROVINCE CODE LIST

	<u>PROV CODE</u>	<u>PROVINCE NAME</u>
I CORPS	01	Quang Tri
	02	Thua Thien
	03	Quang Nam
	04	Quang Tin
	05	Quang Ngai
	91	Hue
	92	Da Nang
II CORPS	06	Kontum
	07	Binh Dinh
	08	Pleiku
	09	Phu Bon
	10	Phu Yen
	11	Darlac
	12	Khnh Hoa
	13	Ninh Thuan
	14	Tuyen Duc
	15	Quang Duc
	16	Lam Dong
	17	Binh Thuan
	93	Cam Ranh
	94	Dalat
III CORPS	18	Binh Tuy
	19	Long Khanh
	21	Phuoc Long
	22	Binh Long
	23	Binh Duong
	24	Tay Ninh
	25	Hau Nghia
	26	Bien Hoa
	27	Phuoc Tuy
	28	Long An
	29	Gia Dinh
	95	Vung Tau
	96	Saigon
IV CORPS	30	Go Cong
	31	Kien Tuong
	32	Kien Phong
	33	Dinh Tuong
	34	Kien Hoa

<u>PROV CODE</u>	<u>PROVINCE NAME</u>
35	Vinh Binh
36	Vinh Long
37	An Giang
38	Kien Giang
39	Chuong Thien
40	Phong Dinh
41	Ba Xuyen
42	An Xuyen
43	Bac Lieu
44	Chau Doc
46	Sa Dec