###### 5. Operational Matrices

Locating the 100th Bomb Group’s “J” Form (take off and landing document), fuel consumption charts, formation charts, battle damage reports, and engineering reports make it is possible to reconstruct which pilot flew which aircraft on a given mission, where in the group formation the aircraft flew, and what events affected the aircraft. The following three tables represent what is known, but there are limitations. It is not possible to identify all of the aircraft that flew on June 22 and it is also not possible to identify all of the pilots who flew on June 22, July 30, August 12, 24, 27, and 31, September 6, 7, 9 and 15, as well as October 10 and 14. Formation charts are not available for June 22, August 24, 27, and 31, September 6, 7, 9, 15, and 24, as well as October 10 and 14. For all three tables, “**AugS**,” represents those aircraft involved in the return mission from 1 August 17, 1943, mission to Regensburg. Though a practice mission, information is included for September 24, 1943, because German fighters shot down a B-17 and seriously damaged another.

The first table provides a matrix detailing what 100th Bomb Group B-17s were associated with which missions. Shaded cells indicate that the aircraft is no longer assigned. Events affecting the aircraft are:

A - Participated, A category battle damage (minor)

AC -Participated, AC category battle damage (major)

B -Participated, B category battle damage (severe)

CL - Crash landed

E -Participated, declared beyond repair

FTO - Failed to Take off

FTR - Failed to Return

P - Participated, no reported battle damage

REM - Returned early, mechanical reasons, credited sortie possible

REO - Returned early, other than mechanical reasons, credited sortie possible

RES - Returned early, scheduled spare aircraft

SAL - Salvaged

TRN - Transferred to another unit

NOTE : SAL and TRN represent approximate dates of the operational activity.

The second table identifies which pilots flew on what aircraft for each mission. Shaded cells indicate that the pilot was no longer associated with the group.

The third and last table in this appendix detail what aircraft flew in what position in the formation. Shaded cells indicate that the aircraft failed to return. In *The Mighty Eighth War Manual* (Jane's 1984), Roger A. Freeman traces variety of heavy bomber formation employed by the Eighth Bomber Command and there was even variation exercised by various groups within the same time frame. For the 100th Bomb Group between June and October 1943, there existed a 21-plane formation (See Formation Graphic on page 121). Each formation, referred to as group, had lead, high, and low squadrons. Also, documentation generated by the 100th Bomb Group indicates the existence of a trail squadron, which were probably reserved for the “spare” aircraft and probably for aircraft assigned to a composite group. Each “group” refers to a formation not necessarily composed of aircraft assigned to the same numbered unit.

The same qualification applies to the term “squadron.” The term “high,” “low,” and “trail” refers to the relative altitude of the “squadron” in relation to the altitude of the lead “squadron.” Each squadron consists of smaller three aircraft "V" formations. The numbering system is straight-forward. The first aircraft of lead squadron is #1, the aircraft to the right is #2, and the aircraft to the left is #3. The lead aircraft of the next “V” is #4 and the aircraft to its right is # 5 and so on. The same numbering system is employed for the high and low squadrons. For the 100th Bomb Group the high squadron contained 9 aircraft, though there were variations to this formation. An overhead view of a 100th Bomb Group formation chart follows:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | LEAD |  |  |  |  |
|  |  |  |  |  | 1 |  |  |  |  |
|  |  |  |  | 3 |  | 2 |  |  |  |
|  |  |  |  |  | 4 |  |  |  |  |
|  |  |  |  | 6 |  | 5 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | LOW |  |  |  |  |  |  | HIGH |  |
|  | 1 |  |  |  |  |  |  | 1 |  |
| 3 |  | 2 |  |  |  |  | 3 |  | 2 |
|  | 4 |  |  |  |  |  |  | 4 |  |
| 6 |  | 5 |  |  |  |  | 6 |  | 5 |
|  | 7 |  |  |  |  |  |  | 7 |  |
| 9 |  | 8 |  |  |  |  | 9 |  | 8 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | TRAIL |  |  |  |  |
|  |  |  |  |  | 1 |  |  |  |  |
|  |  |  |  | 3 |  | 2 |  |  |  |
|  |  |  |  |  | 4 |  |  |  |  |
|  |  |  |  | 6 |  | 5 |  |  |  |

**Aircraft - Mission Matrix**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 22 | 25 | 26 | 28 | 29 | 4 | 10 | 14 | 17 | 24 | 25 |
|  |  | Jun | Jun | Jun | Jun | Jun | Jul | Jul | Jul | Jul | Jul | Jul |
| 23229 | 349 A |  |  | RES | REM |  |  |  |  |  |  |  |
| 23232 | 350 V |  | REM | REO |  | P | P |  | P | P | P | REM |
| 23233 | 350 R |  | P |  | P | P | P | REM | FTO | P | P | P |
| 23234 | 351 E |  |  |  | REM |  | P | P | A | RES | A | AC |
| 23237 | 418 R | P |  | P | RES | P | P | P | P | FTO |  |  |
| 23260 | 349 K |  | FTR |  |  |  |  |  |  |  |  |  |
| 23271 | 351 L |  |  |  |  |  |  |  |  | A |  | A |
| 23279 | 350 Z |  | RES | P | P | P | P | AC |  |  |  |  |
| 23307 | 351 N |  | RES | P | P | P | P | A |  | RES |  | AC |
| 25854 | 418 |  |  |  |  | P | P |  | TRN |  |  |  |
| 25860 | 418 P |  |  | P | P | P | P |  | A | P | P | P |
| 25861 | 349 J | P |  |  |  | P | P | P | P | P | A | A |
| 25862 | 350 T |  | A |  | P | P | P | REM | A | P |  | FTR |
| 25863 | 418 V | A | RES | P | P |  |  |  |  | P | P | P |
| 25864 | 351 A |  | A |  | P | P | A | P |  | REM | P | A |
| 25865 | 351 H |  |  | P |  | P |  |  | RES |  | A | REM |
| 25867 | 350 O |  | A | P | P |  | P |  | A | FTO | P |  |
| 25878 | 350 W |  | P | P |  |  |  |  |  |  |  |  |
| 229738 | 350 U |  |  | RES |  | P |  |  | TRN |  |  |  |
| 229931 | 418 |  |  | P |  | P |  | P | TRN |  |  |  |
| 229947 | 351 |  | RES |  |  | P |  | TRN |  |  |  |  |
| 229986 | 349 G |  | FTR |  |  |  |  |  |  |  |  |  |
| 230002 | 349 F |  |  |  |  |  |  | FTO | REM | P |  |  |
| 230023 | 349 M |  |  |  |  |  | P |  |  |  | REM | A |
| 230035 | 349 H |  |  | P | P | P |  |  | P |  |  |  |
| 230038 | 349 D |  | FTR |  |  |  |  |  |  |  |  |  |
| 230042 | 349 L |  |  | REM |  |  | REM | P | REM | FTO | REO | A |
| 230047 | 350 Q |  |  |  |  |  | P | P | REM | P | P | P |
| 230050 | 350 X |  | P | P | P | P |  | FTR |  |  |  |  |
| 230051 | 351 J |  | P | P |  | P | FTR |  |  |  |  |  |
| 230057 | 351 D |  | P | P | P | P |  | P | REM | A | A | FTO |
| 230059 | 351 G |  |  |  |  |  |  | A | REM | A |  | P |
| 230061 | 418 Q | P |  | P | P |  |  | P | REM |  | P | P |
| 230062 | 418 O | A |  | P | P |  |  |  |  |  | P |  |
| 230063 | 418 S |  |  | P | P |  | P | REO | REM | RES |  | REM |
| 230064 | 418 T |  |  |  |  |  | P | P | AC |  |  |  |
| 230066 | 350 U |  | P | P | RES | P | REM | A |  | A |  | P |
| 230068 | 350 P |  | P |  | P |  |  |  |  |  |  |  |
| 230070 | 350 S |  |  |  |  |  |  | AC |  |  |  |  |
| 230080 | 351 F |  | A |  | P |  | P | A |  |  | A | REM |
| 230086 | 351 B |  | P | P | P |  | P | P | P | A | A |  |
| 230087 | 351 M |  | A | P |  | P |  |  |  |  |  |  |
| 230088 | 349 E |  |  |  |  | P | P | P | P | P | A | A |
| 230089 | 351 K |  |  |  |  |  |  | A | A | A |  | A |
| 230090 | 349 B |  |  |  |  |  |  | A |  |  |  | A |
| 230152 | 418 X |  | REM |  |  |  |  |  |  | P | P | REM |
| 230154 | 349 H |  |  |  |  |  |  |  |  |  |  |  |
| 230170 | 349 G |  |  |  |  |  |  | P |  |  | REM | A |
| 230184 | 418 Z |  | RES | P | P |  | P | REM | REM | E |  |  |
| 230259 | 349 N | P | A | P | P |  | RES | REM | AC |  | A |  |
| 230305 | 349 D |  |  |  |  |  | P | P | P |  |  |  |
| 230335 | 350 Y |  |  |  |  |  |  |  |  | P | REO | REM |
| 230358 | 350 X |  |  |  |  |  |  |  |  | REM | P | P |
| 230458 | 418 W |  |  |  |  |  |  |  |  | P | P |  |

10 Jul - 230070 listed twice

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 26 | 28 | 29 | 30 | 12 | 15 | 17 | 19 | 24 | 24S | 27 |
|  |  | Jul | Jul | Jul | Jul | Aug | Aug | Aug | Aug | Aug | Aug | Aug |
| 23229 | 349 A |  | P | REO |  |  | RES | A |  |  | P |  |
| 23232 | 350 V | REM | REM | P |  | P |  | FTR |  |  |  |  |
| 23233 | 350 R | P | P | P | REO | P | P |  |  |  |  |  |
| 23234 | 351 E |  | P | FTO | P | P | P |  |  | P |  | A |
| 23237 | 418 R |  | REO | P | A | P |  | AC |  |  | REM |  |
| 23271 | 351 L |  |  | P | P |  | P |  |  |  |  |  |
| 23307 | 351 N |  |  |  |  |  | P |  | P |  |  |  |
| 23393 | 418 Y |  |  |  |  | P |  | A |  |  | P |  |
| 25860 | 418 P | P | P |  | P |  | P | FTR |  |  |  |  |
| 25861 | 349 J | A | P |  |  |  |  | A |  |  | P |  |
| 25863 | 418 V | P | P | REM | P |  | P |  |  |  |  |  |
| 25864 | 351 A | AC |  |  |  | P |  | A |  |  | P |  |
| 25865 | 351 H | P | P | P | AC |  | P |  | P |  |  | P |
| 25867 | 350 O |  |  | REM | P |  | P | FTR |  |  |  |  |
| 25878 | 350 W | REM | P |  |  | REM |  |  |  |  |  |  |
| 230002 | 349 F |  | P |  |  |  | RES | FTR |  |  |  |  |
| 230023 | 349 M | A | P |  | REO | P |  |  | RES |  |  |  |
| 230035 | 349 H |  |  |  |  |  | A |  | P |  |  |  |
| 230042 | 349 L | P |  |  |  | REM |  | FTR |  |  |  |  |
| 230047 | 350 Q | P | P | P |  |  | P |  |  |  |  | P |
| 230057 | 351 D |  | P | RES | P | AC |  |  |  | P |  | P |
| 230059 | 351 G |  | P | REM |  | A |  | REM |  | AC |  |  |
| 230061 | 418 Q |  | P |  | P |  | A | P |  |  |  |  |
| 230062 | 418 O | P | REO | P |  | REM | P |  |  |  |  |  |
| 230063 | 418 S | REM | P | REM | P | P |  | FTR |  |  |  |  |
| 230064 | 418 T |  |  |  |  |  |  |  |  |  |  | P |
| 230066 | 350 U | P | REM | P | A | P |  | B |  |  |  |  |
| 230070 | 350 S |  |  | P |  | P |  | FTR |  |  |  |  |
| 230080 | 351 F |  |  | P | P |  | A | FTR |  |  |  |  |
| 230086 | 351 B | P |  | P | P | P |  | RES |  |  |  |  |
| 230087 | 351 M |  | P |  |  |  |  |  |  |  |  |  |
| 230088 | 349 E |  |  | P | A | P |  | RES | P | A |  |  |
| 230089 | 351 K | AC |  |  |  | P | AC |  | A | P |  |  |
| 230090 | 349 B | REM | P | REM |  | A |  |  |  |  |  |  |
| 230152 | 418 X | A |  | P |  | REM | P | RES |  |  |  | P |
| 230154 | 349 H |  |  |  |  |  |  |  |  |  |  |  |
| 230170 | 349 G |  |  | P | REM | P | P | REM |  |  |  |  |
| 230259 | 349 N |  | P | REM |  | A | RES |  | P |  |  | RES |
| 230305 | 349 D |  |  |  |  | SAL |  |  |  |  |  |  |
| 230311 | 350 T |  |  |  |  |  | P | FTR |  |  |  |  |
| 230335 | 350 Y | P | P |  |  | P | P | A |  |  | P |  |
| 230358 | 350 X | P | P | P | P |  | P | A |  |  |  |  |
| 230380 | 350 P |  |  |  |  | AC |  |  |  | A |  |  |
| 230402 | 418 W |  |  |  |  |  | P |  | A | P |  | P |
| 230611 | 349 D |  |  |  |  |  | P | A |  |  | P | A |

17 Aug - 230066 did not participate in any operational sorties until sometime after October 14

24S Aug - represents those B-17s returning from the 17 Aug mission.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 31 | 3 | 6 | 7 | 9 | 15 | 16 | 23 | 24 |
|  |  | Aug | Sep | Sep | Sep | Sep | Sep | Sep | Sep | Sep |
| 23229 | 349 A |  |  |  | P | P | P | P |  |  |
| 23233 | 350 R |  |  | P |  | P | P | P | REM |  |
| 23234 | 351 E |  |  | AC |  |  |  |  | P |  |
| 23237 | 418 R |  | REM | P | P | P | P |  |  |  |
| 23271 | 351 L | P | A | AC |  | P | P |  | P |  |
| 23307 | 351 N |  | A |  |  |  |  | FTO | P | P |
| 23386 | 351 H | P |  |  | P | P | P | P | P |  |
| 23393 | 418 Y | P |  | P | P | P | P | P |  |  |
| 23413 | 350 V |  | P |  | P |  | P | P | REO |  |
| 23452 | 350 Z |  |  | REO |  |  | FTR |  |  |  |
| 23508 | 418 P |  |  |  |  |  |  | P |  |  |
| 23534 | 349 L |  |  |  |  | P |  |  |  |  |
| 25861 | 349 J | P | A |  | P |  | P | P | REM | P |
| 25863 | 418 V | P | A | AC |  |  |  |  |  |  |
| 25864 | 351 A | REM |  | REM | P | P | P |  |  | P |
| 25865 | 351 H | P | FTR |  |  |  |  |  |  |  |
| 25878 | 350 W |  |  |  |  |  |  |  | TRN |  |
| 25957 | 349 D |  |  | P |  |  |  |  |  |  |
| 25997 | 351 F |  |  |  | P | P | P | P |  |  |
| 26087 | 418 Z |  |  |  |  |  |  |  | P |  |
| 26094 | 418 Q |  |  |  |  |  |  |  | REM |  |
| 230023 | 349 M | P |  |  |  |  |  | P | P |  |
| 230035 | 349 H | REM | FTR |  |  |  |  |  |  |  |
| 230047 | 350 Q | P |  | REM |  |  | FTO | P | REM | P |
| 230057 | 351 D | P | A | FTR |  |  |  |  |  |  |
| 230059 | 351 G | P | FTR |  |  |  |  |  |  |  |
| 230061 | 418Q |  |  |  |  |  |  |  |  |  |
| 230062 | 418 O | P | A |  | P | P | P | P | P | P |
| 230064 | 418 T |  | P | REM | P | P | P | FTR |  |  |
| 230086 | 351 B |  |  |  |  |  |  |  | SAL |  |
| 230087 | 351 M |  | RES | REO |  | P | P | P | P | P |
| 230088 | 349 E | P | A | P |  |  |  |  |  |  |
| 230089 | 351 K | P | FTR |  |  |  |  |  |  |  |
| 230090 | 349 B | P | A |  |  |  |  | P | REM |  |
| 230091 | 418 S | REM |  |  |  |  |  |  |  | P |
| 230152 | 418 X | P | FTO | P | P | P | P | FTO | P |  |
| 230154 | 349 H |  |  | REM | P |  | P | P | REM | P |
| 230170 | 349 G |  |  |  | P | P | P |  | P | P |
| 230259 | 349 N | P | A |  |  |  |  |  |  | FTR |
| 230335 | 350 Y |  | A | FTR |  |  |  |  |  |  |
| 230358 | 350 X |  | A | A | P | P |  | P |  | P |
| 230380 | 350 P |  |  | REM | P | P | AC |  | P |  |
| 230402 | 418 W | P | P | FTR |  |  |  |  |  |  |
| 230487 | 349 F |  |  |  |  | P | P |  |  | P |
| 230604 | 350 T |  |  |  | P | P |  | P |  |  |
| 230611 | 349 D | P | FTR |  |  |  |  |  |  |  |
| 230725 | 350 Z |  |  | REO | P | P |  |  |  |  |
| 230734 | 351 G |  |  |  |  |  |  |  |  | P |
| 230758 | 418 W |  |  |  |  |  |  |  | P | P |
| 230796 | 351 K |  |  | P | A | P | P | P | P | P |
| 230799 | 349 L |  |  |  |  |  | P |  | P | A |
| 230818 | 350 S |  | A | P | P | P | P | P |  | P |
| 230823 | 350 Y |  |  |  |  |  |  |  | P | P |
| 230830 | 418 U |  |  | A |  |  | P | P | P |  |
| 230840 | 350 O |  | P | A | A |  |  |  | FTO | P |

6 Sep – historical documentation is inconsistent as to 230088’s participation.

24 Sep - 230259 was on a practice mission when shot down over water by German fighters

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 26 | 27 | 2 | 4 | 8 | 9 | 10 | 14 |
|  |  | Sep | Sep | Oct | Oct | Oct | Oct | Oct | Oct |
| 23229 | 349 A | P | P |  |  | P | REM | P |  |
| 23233 | 350 R |  | P | P |  | P |  |  |  |
| 23234 | 351 E |  |  |  |  |  | P | E |  |
| 23237 | 418 R |  |  |  |  | REM | P | FTR |  |
| 23271 | 351 L |  | P | P | P |  | P | FTO | P |
| 23307 | 351 N | P |  |  |  | FTO | P | REM |  |
| 23386 | 351 H | P | P | P |  | FTR |  |  |  |
| 23393 | 418 Y |  | P | P | P | CL E |  |  |  |
| 23413 | 350 V | P |  | P | P |  | RES | REO | P |
| 23433 | 350 W |  |  |  | P | REM | P | FTR |  |
| 23474 | 351 B | P |  | P | REM | AC |  |  |  |
| 23508 | 418 P | P |  | P | A |  |  |  |  |
| 23534 | 349 L |  |  |  |  |  | P | REM | P |
| 25861 | 349 J | P | P |  | P |  |  |  |  |
| 25864 | 351 A | P |  |  | P | FTR |  |  |  |
| 25957 | 349 D |  |  | P | FTO | A |  |  | P |
| 25997 | 351 F | P | REM | P | P | AC |  |  |  |
| 26087 | 418 Z |  | P | P | A |  | P | AC |  |
| 26094 | 418 Q | P | P | P | P |  | P | REM | REM |
| 230023 | 349 M | REM | P |  | REM | REM | REM | FTR |  |
| 230047 | 350 Q |  | REM |  | RES | P |  | FTR |  |
| 230061 | 418 T |  |  |  |  |  |  | REM |  |
| 230062 | 418 O | REM |  | P | REM | REM | FTO |  | P |
| 230087 | 351 M |  | P | P |  |  |  | FTR |  |
| 230088 | 349 E |  |  | P | P | A |  |  | REM |
| 230090 | 349 B |  |  |  |  |  | P | FTR |  |
| 230091 | 418 S |  |  | P | P | A |  |  |  |
| 230152 | 418 X | P | P | P | P | A |  |  |  |
| 230154 | 349 H |  | P | P | P | FTR |  |  |  |
| 230170 | 349 G |  | P | P |  | A |  |  |  |
| 230358 | 350 X |  | P | P | P | FTR |  |  |  |
| 230380 | 350 P | P |  |  |  |  |  |  | P |
| 230487 | 349 F | P |  | REM | P | P |  |  |  |
| 230604 | 350 T | P | P | P | FTR |  |  |  |  |
| 230723 | 351 D |  | P | P | P | P | P | FTR |  |
| 230725 | 350 Z | P |  | P | P |  |  | FTR |  |
| 230734 | 351 G | P | REM |  | RES |  | P | FTR |  |
| 230758 | 418 W |  | P | P |  | A |  |  |  |
| 230796 | 351 K |  | P | P | P | AC |  |  |  |
| 230799 | 349 L | P |  |  |  |  | REM |  |  |
| 230818 | 350 S | P | P | P |  | FTR |  |  |  |
| 230823 | 350 Y | REM |  | P | P |  | RES | FTR |  |
| 230830 | 418 U | P | P |  | P |  | P | FTR |  |
| 230840 | 350 O |  | P |  | REO | FTR |  |  |  |

10 Oct - 23234 flew with 390BG.