

Capt Weiland

C O N F I D E N T I A L

HEADQUARTERS EIGHTH AIR FORCE
Office of the Commanding General

O-A-5

MEMORANDUM)
NO. 55-8)

23 April 1944.

STANDING OPERATING PROCEDURE

OPERATIONS

Loading Charts and Bombing-up Procedure Involving Incendiary, Mixed and Unusual Bomb Loads on B-17 and B-24 Aircraft.

- SECTION I - General
- SECTION II - Bombing-up Procedure for B-17's with A-2 Release
- SECTION III - Bombing-up Procedure for B-24's
- SECTION IV - Mixed Loads

I. General

The attached charts will be referred to in Field Orders. All other loading charts previously issued on incendiary, mixed and unusual bomb loads are rescinded and will be destroyed. When fragmentation or GP bombs are clustered each six-and-one-half ($6\frac{1}{2}$) inch toggle wire should be replaced by one cluster adapter M-12, and each fourteen-and-one-quarter ($14\frac{1}{4}$) inch toggle wire should be replaced by two (2) cluster adapters M-12.

II. Bombing-up Procedure for B-17 Aircraft

A. M-47 Incendiary Bombs

1. Materials necessary for one (1) complete load

- (a) Forty-two (42) complete rounds including fourteen (14) double arming wire assemblies, fourteen (14) single arming wires and forty-two (42) Fahnstock clips.
- (b) Twenty-eight (28) short toggle wires six-and-one-half ($6\frac{1}{2}$) inches overall length.

2. Procedure for bombing-up (Chart No. 1)

- (a) Place the loops of toggles over each bomb lug on seven (7) bombs and secure lugs to shackles.
- (b) Attach the assembly referred to in paragraph A 2 (a) to lowest inboard 100-pound station No. 5. Fix a second bomb to the toggle, by passing the steel plates through its bomb lugs in such a manner that the steel plate on the toggle faces the nose of the bomb.
- (c) Similarly, suspend bombs from stations 7, 9, 15, 17, 19 and 20.

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- (d) Single bombs, without toggles, are fixed to inboard and outboard stations as shown on Chart No. 1.
- (e) The same procedure is followed for the loading of the other half of the bomb bay.
- (f) Arming wires are attached to the shackles and fuzes in the normal manner.

III. Bombing-up Procedure for B-24's

A. M-47 Incendiary Bombs

1. Materials necessary for one (1) complete load

- (a) Fifty-two (52) complete rounds including twelve (12) triple and eight (8) double arming wire assemblies and fifty-two (52) Fahnstock clips.
- (b) Forty (40) short toggle wires, six-and-one-half ($6\frac{1}{2}$) inches, and twenty-four (24) long toggle wires, fourteen-and-one-fourth ($14\frac{1}{4}$) inches.

2. Procedure for bombing-up (Chart No. 1)

Note: The forward bomb bays must be loaded first and the rear bays last.

- (a) Place the loops on one (1) short and one (1) long toggle wire over each bomb lug of twelve (12) bombs and attach shackles.
- (b) Place one (1) short toggle over each bomb lug of eight (8) bombs and attach shackles.
- (c) Attach assembly, referred to in A 2 (a), to lowest station in forward left bomb bay, No. 11, and secure second bomb to short toggles.
- (d) Place another assembly, referred to in A 2 (a), on station 12. Secure a third bomb to long toggles on Station 11.
- (e) Continue the letter sequence shown on Chart No. 1 to complete the loading.
- (f) Arming wires are attached to shackles and fuzes in the normal manner.

IV. Mixed Loads

- A. The mixed loads shown on the following charts should be aimed and released as if HE bombs only were carried. No time lag is required between the release of HE and incendiary bombs except for the load on Chart No. 11 when it is dropped from above 15,000 feet.

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A diagram below each mixed load chart shows the theoretical bomb pattern of one (1) aircraft load at the altitude and intervalometer setting shown. It should be remembered that variances in the ballistics of the individual bombs will cause them to be distributed more at random than shown in these diagrams.

The intervalometer setting specified for most of the loads will, in general, give the shortest possible pattern and the best results against precision targets. For the loads best suited for city area attacks, Charts Nos. 4, 5, and 10, a pattern is shown for the intervalometer setting which will, in general, give the most effective group pattern against this type of target. Although the patterns shown (excepting Chart No. 11) are for bombing altitudes of 20,000 feet, the intervalometer settings specified can be used anywhere within the present range of bombing altitudes without appreciably changing the effectiveness of the group pattern as a whole.

By command of Lieutenant General DOOLITTLE:

JOHN A. SALFORD,
Brigadier General, USA,
Chief of Staff.

OFFICIAL:

E. V. Maschley
E. V. MASCHLEY,
Colonel, Air Corps,
Executive, A-3.

13 Incls: (Loading Charts)

- Incl No. 1 - M-47 IB
- 2 - 100-lb GP or Frag clusters
- 3 - 100-lb GP: M-17 IB
- 4 - 100-lb GP: M-17 IB
- 5 - 100-lb GP: M-17 IB
- 6 - 200 lb GP
- 7, 8, 9 and 10 - 250 lb GP: M-17 IB
- 11 - 500-lb GP; M-47 IB
- 12 - 500-lb GP; M-17 IB
- 13 - 1000-lb GP; M-17 IB

DISTRIBUTION: "A"

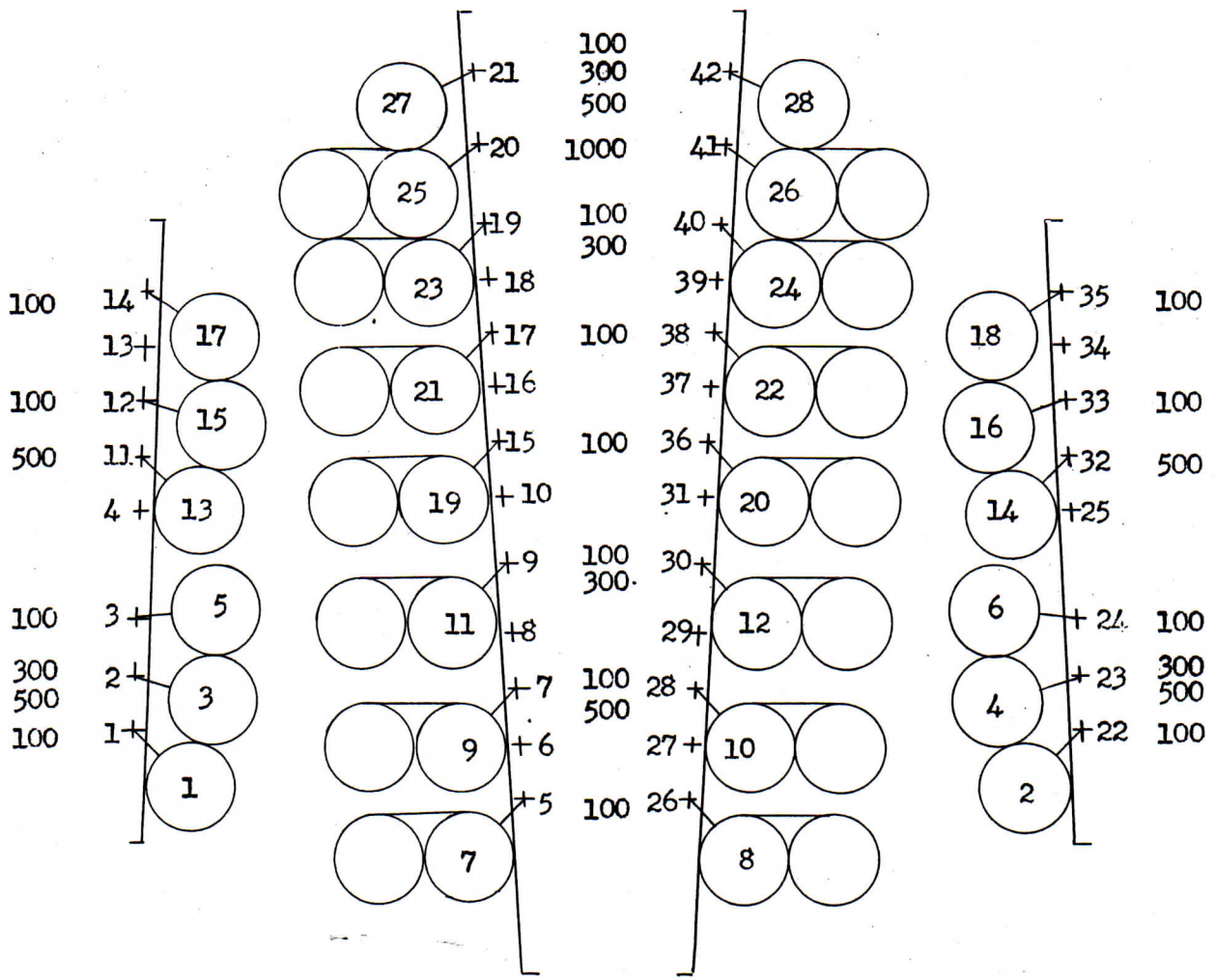
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CHART 1

42 - M-47 IB = 2,940#

Load for B17

Numbers inside bombs show order of release.



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CHART 1

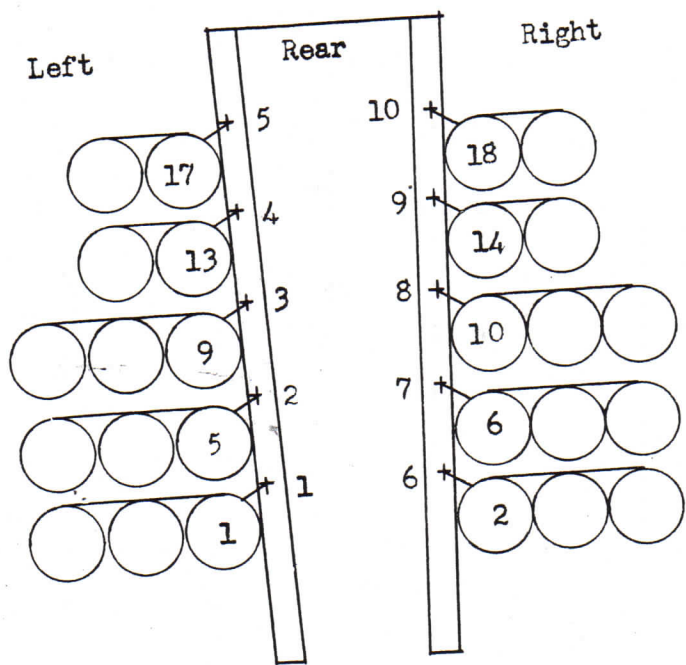
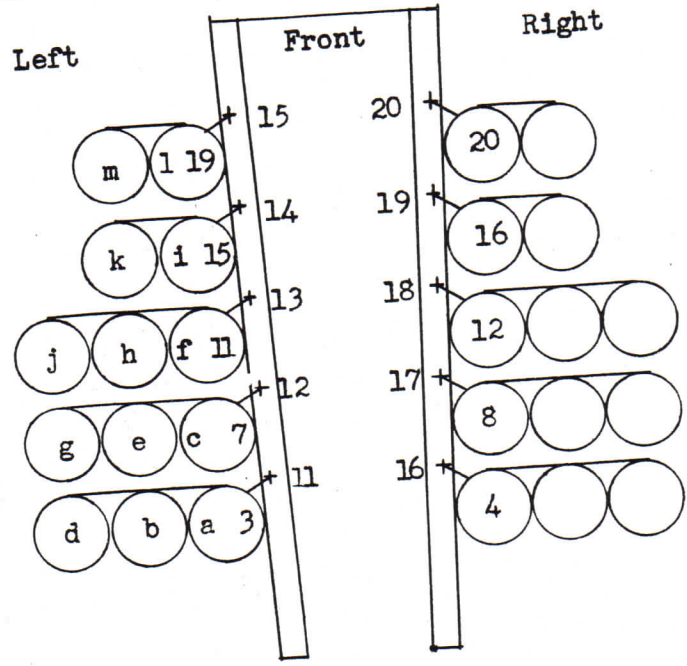
597
20

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52 - M47 IB = 3,640#

M47 IB in B24

Numbers inside bombs show order of release.
Letters inside bombs show order of loading with toggle sling.



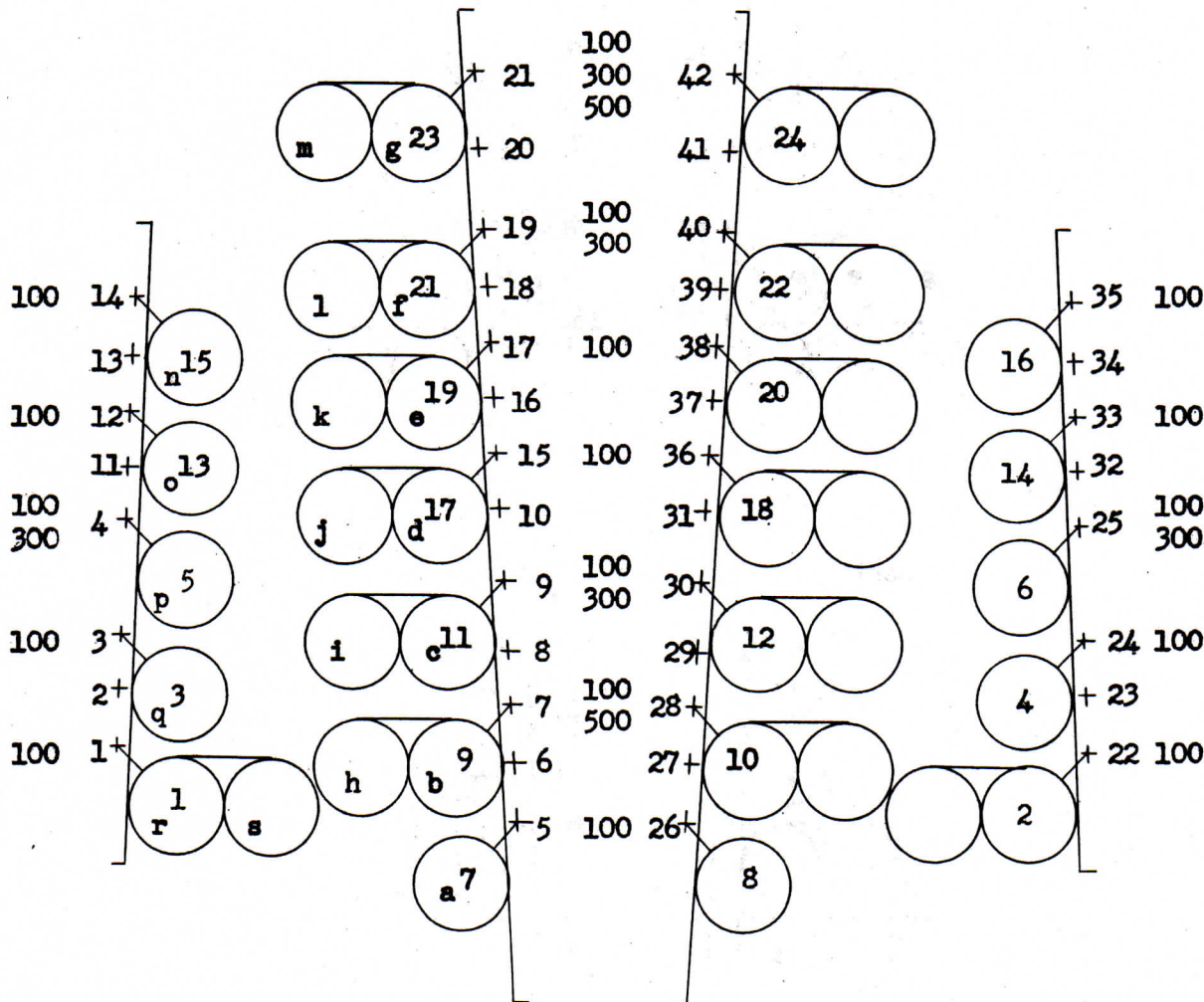
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CHART 2

38 - 100# GP = 4,450#
or 38 - M-1A1 FRAG = 4,750#
(6 x 20# - M41)

Load for B17

Numbers inside bombs show order of release.
Letters inside bombs show order of loading with Cluster Adapter M12.



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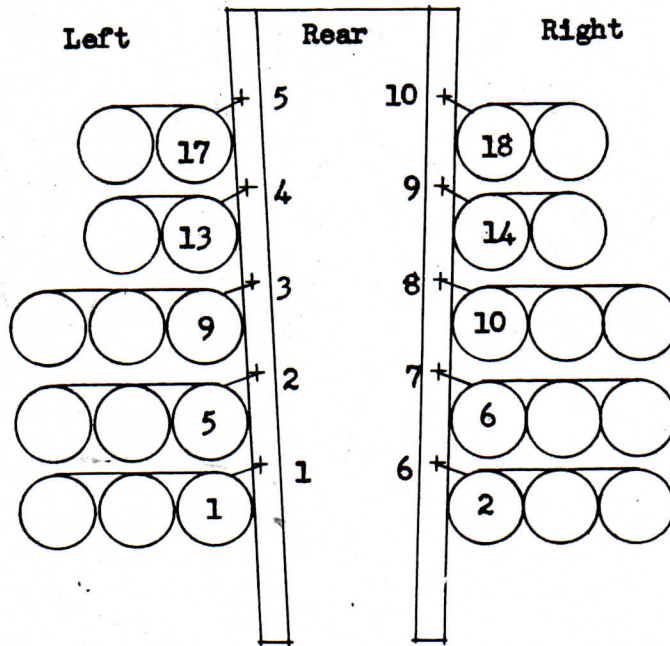
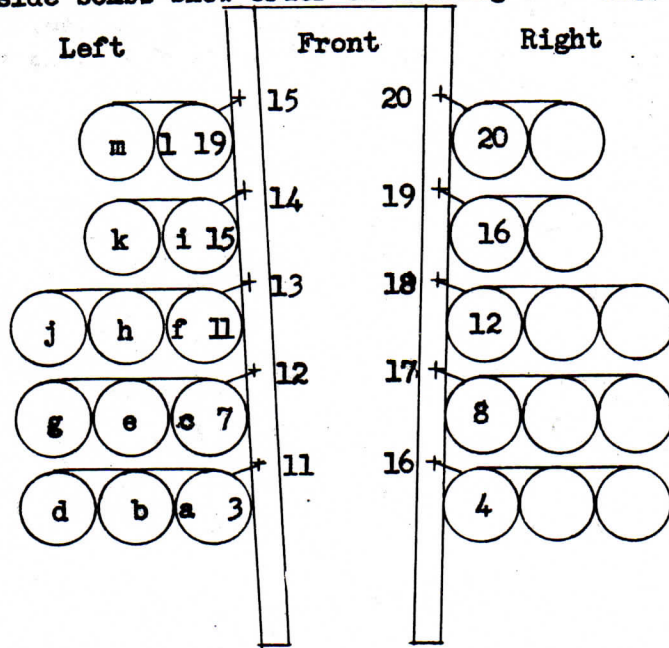
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CHART 2

52 - 100# GP = 6,090#
or 52 - M-1A1 FRAG = 6,500#
(6 x 20# - M41)

Load for B24

Numbers inside bombs show order of release.
Letters inside bombs show order of loading with Cluster Adapter M12.



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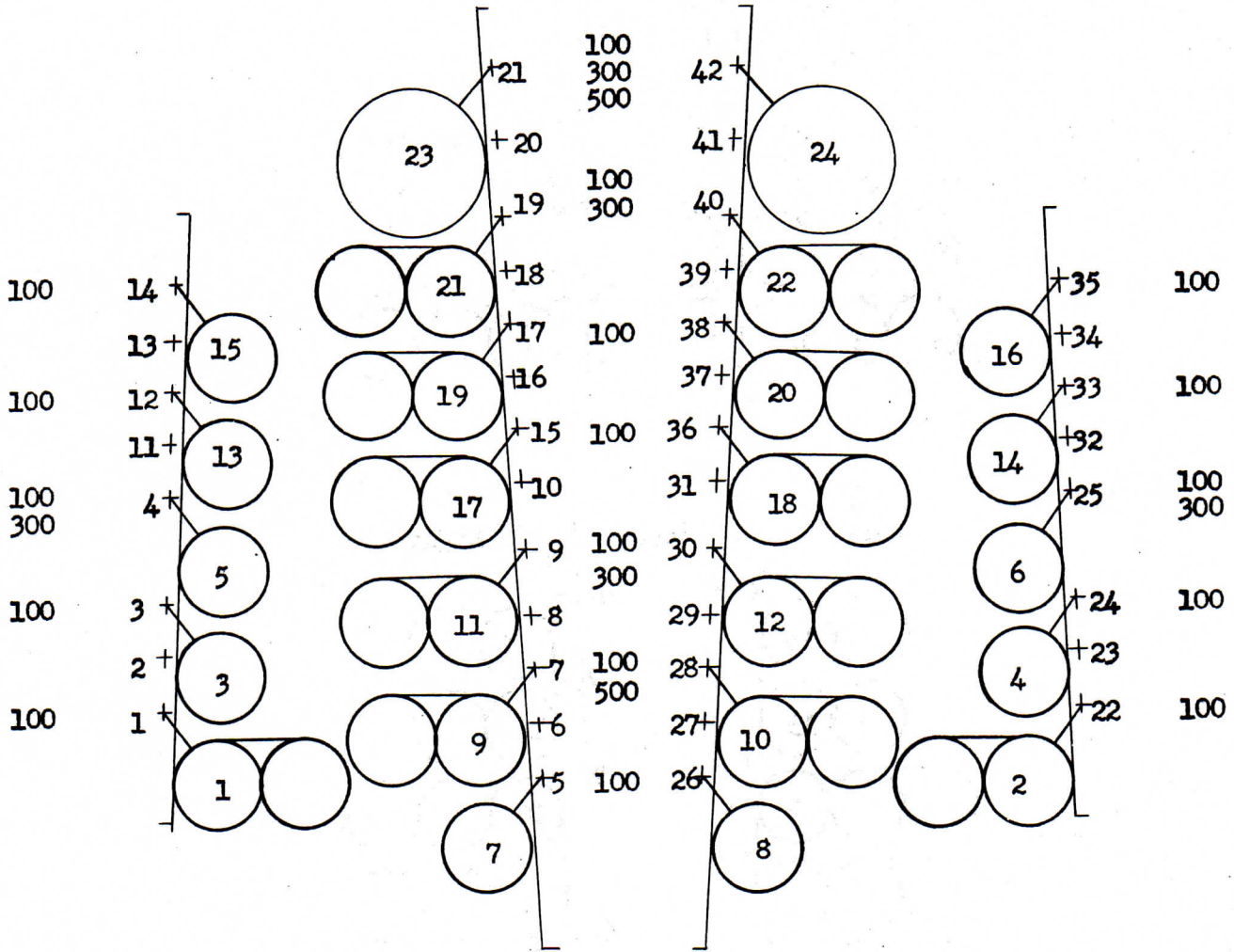
CHART 3

34 - 100# GP = 3,980# 81%

Mixed Load B17

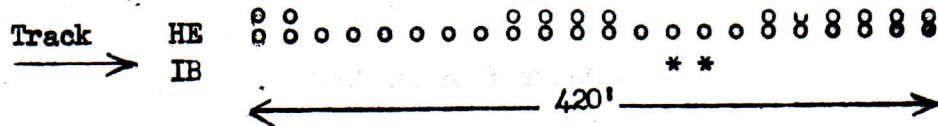
2 - M-17 IB = $\frac{920\#}{4,900\#}$ 19%

Numbers inside bombs show order of release.



Pattern from 20,000'

Minimum Intervalometer:



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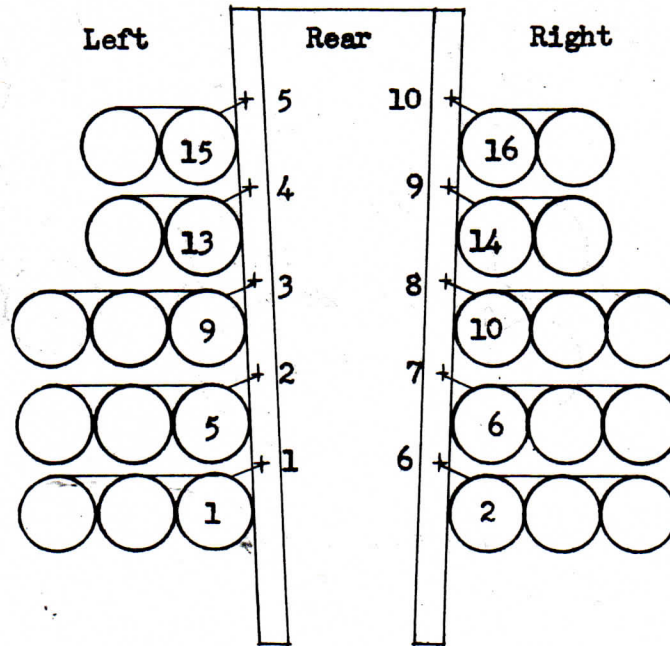
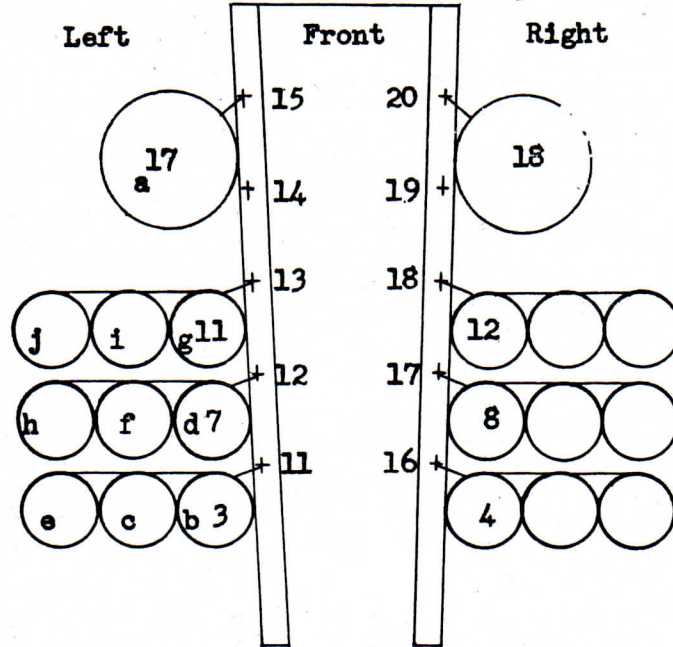
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CHART 3

44 - 100# GP = 5,150# 85%
 2 - M-17 IB = 920# 15%
 6,070#

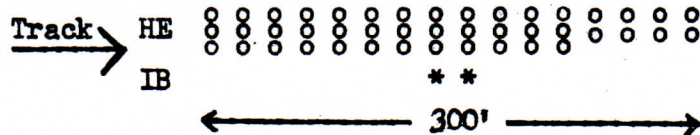
Mixed Load B24

Numbers inside bombs show order of release.
 Letters inside bombs show order of loading with Cluster Adapter M12.



Pattern from 20,000'

Minimum Intervalometer:



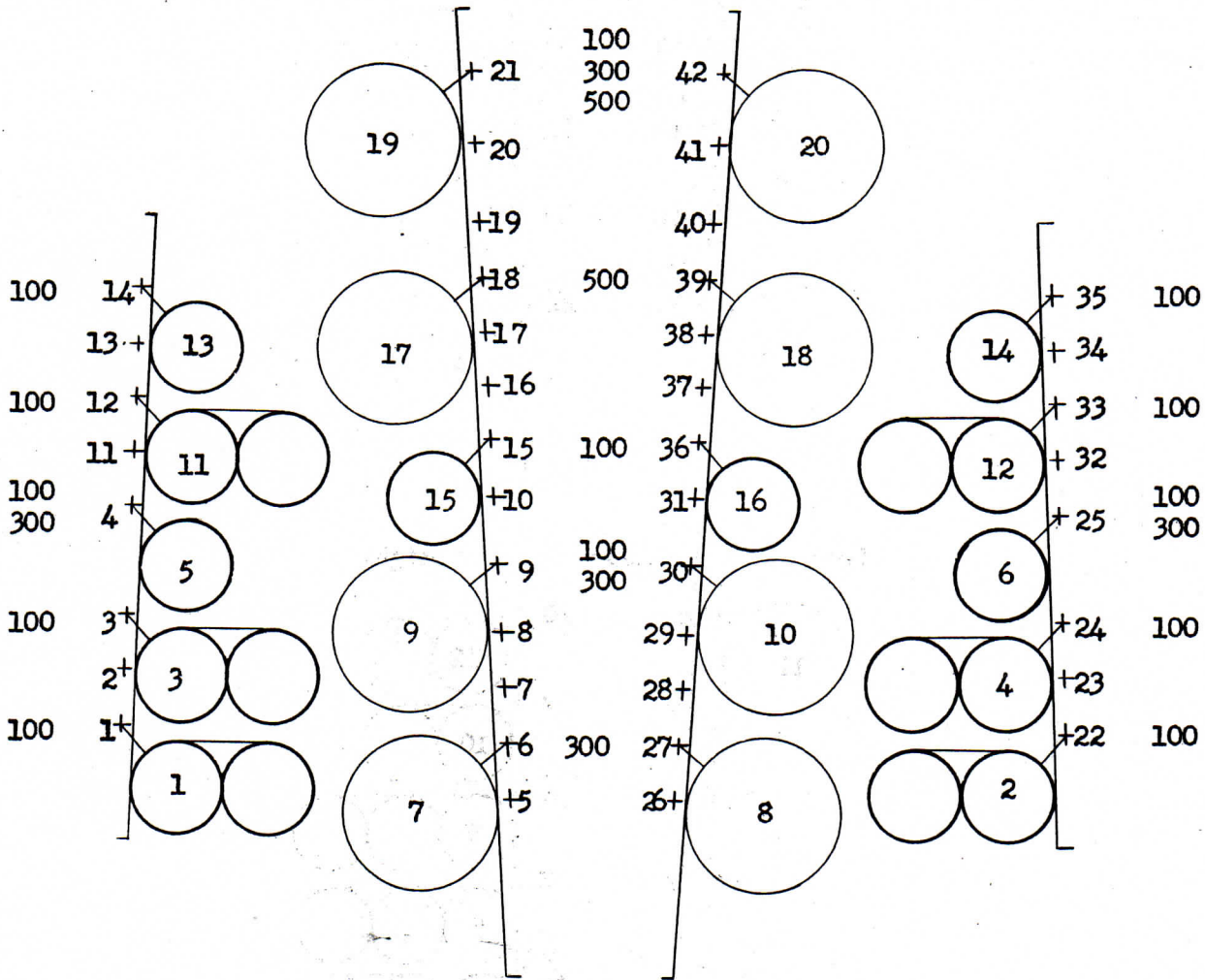
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CHART 4

18 - 100# GP = 2,110# 36%
 8 - M-17 IB = 3,680# 64%
 5,790#

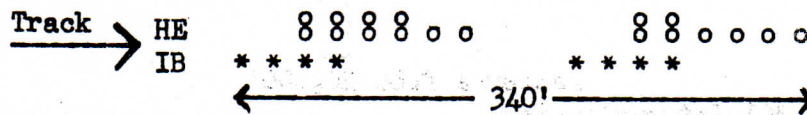
Mixed Load B17

Numbers inside bombs show order of release.

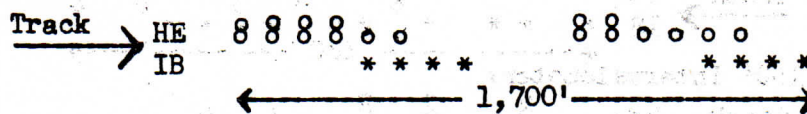


Patterns from 20,000'

Minimum Intervalometer:



100' Intervalometer:



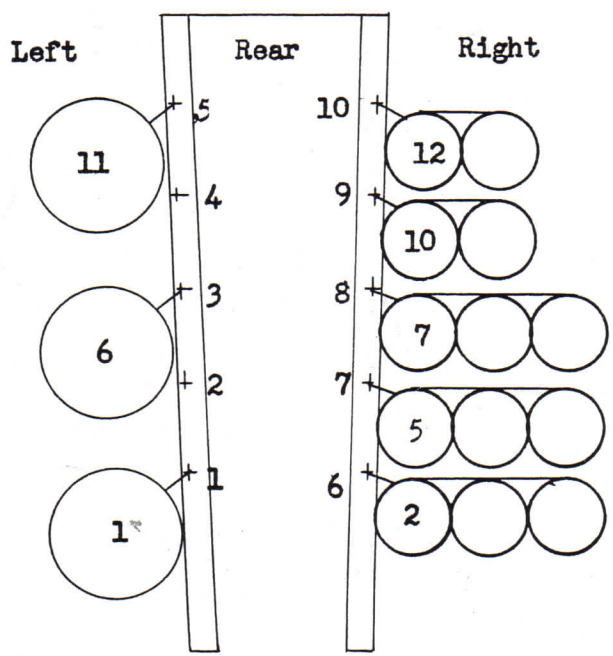
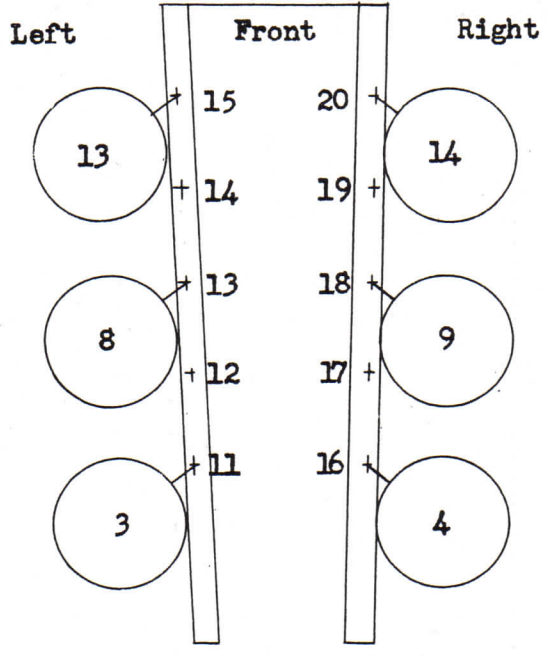
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CHART 4

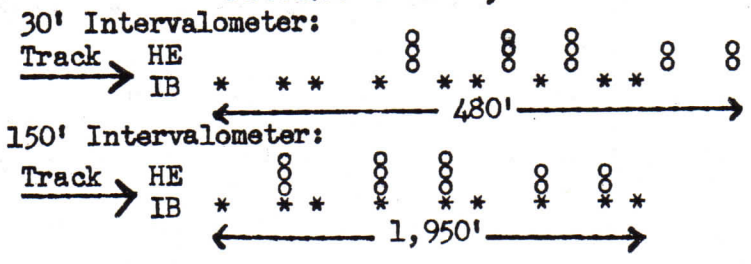
13 - 100# GP = 1,520# 27%
 9 - M-17 IB = 4,140# 73%
 5,660#

Mixed Load B24

Numbers inside bombs show order of release.



Patterns from 20,000'



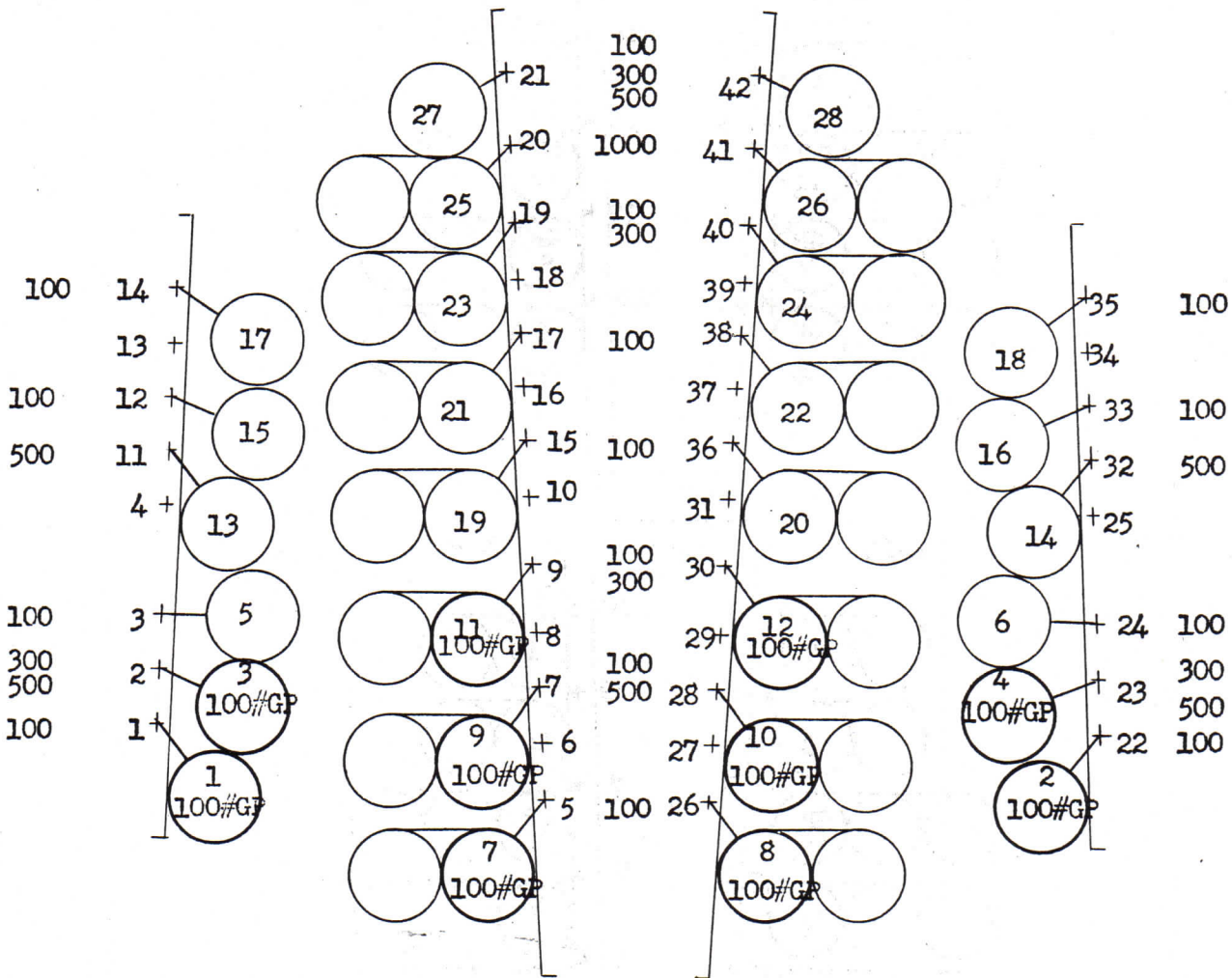
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CHART 5

10 - 100# GP = 1,170# 34%
 32 - M-47 IB = 2,240# 66%
 3,410#

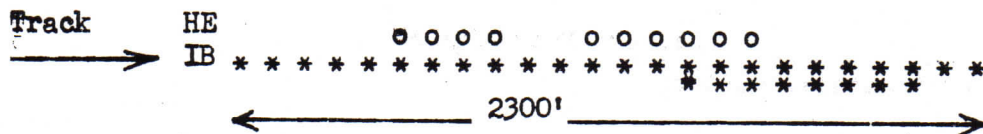
Mixed Load B17

Numbers inside bombs show order of release.



Pattern from 20,000'

100' Intervalometer:

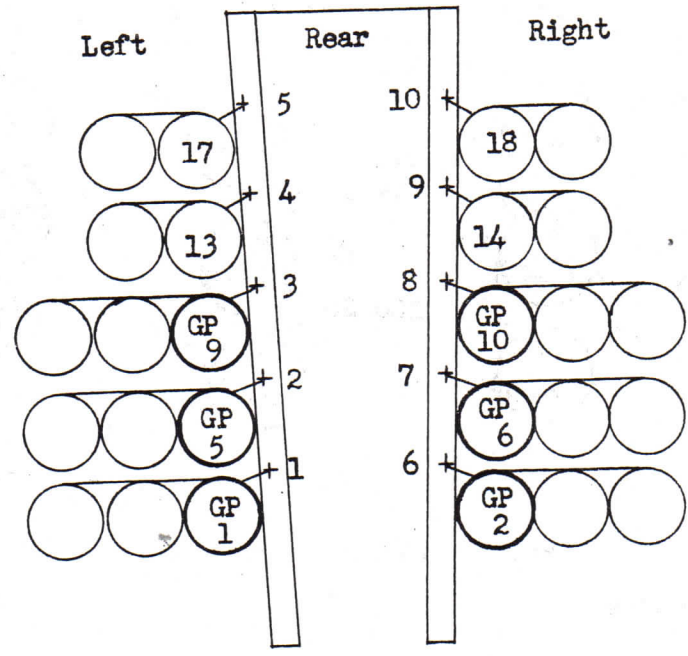
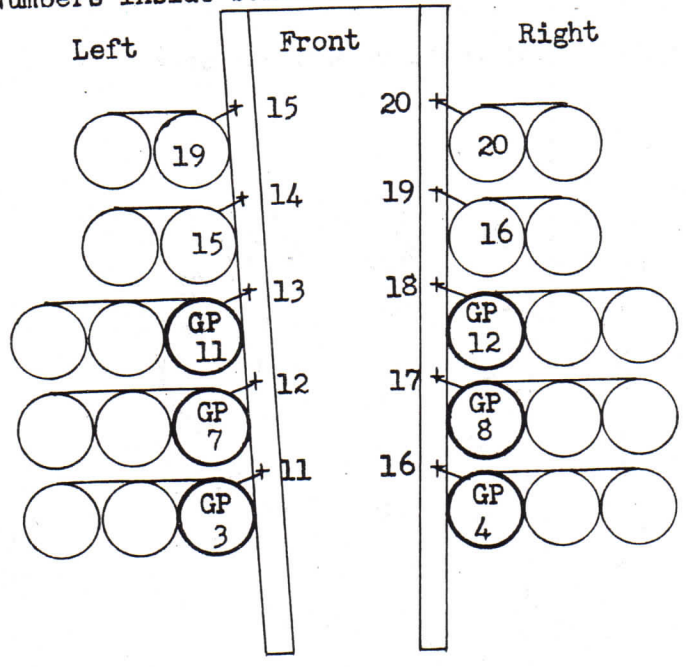


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3 12 - 100# GP = 1,400# 33%
40 - M47 IB = 2,800# 67%
4,200#

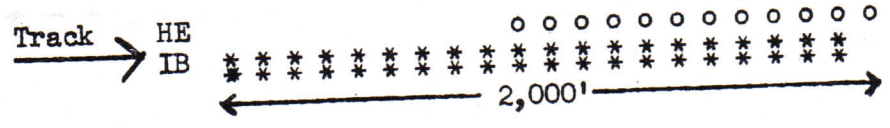
Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'

100' Intervalometer:



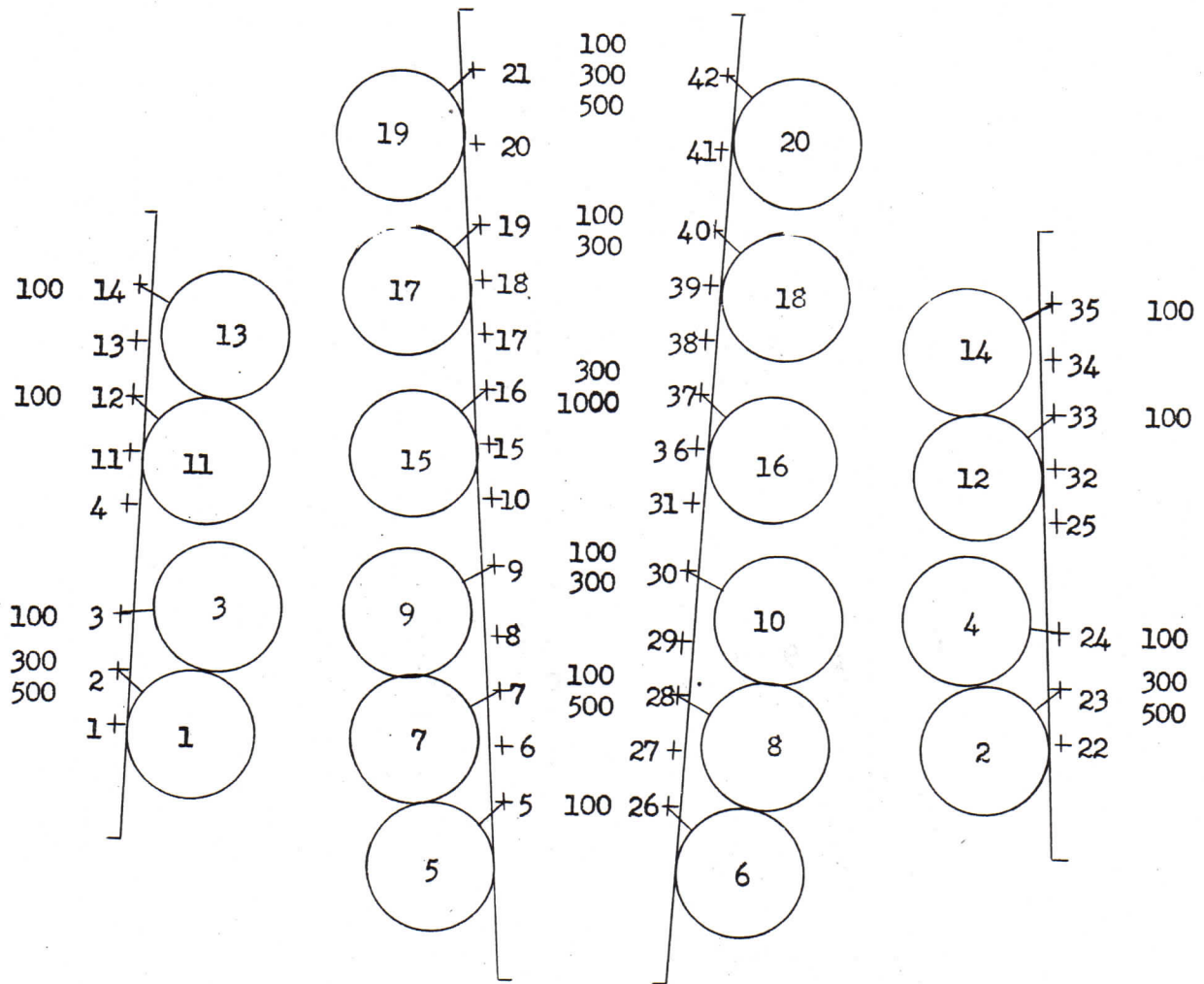
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CHART 6

20 - 250# GP = 5,300#

Load for B17

Numbers inside bombs show order of release.



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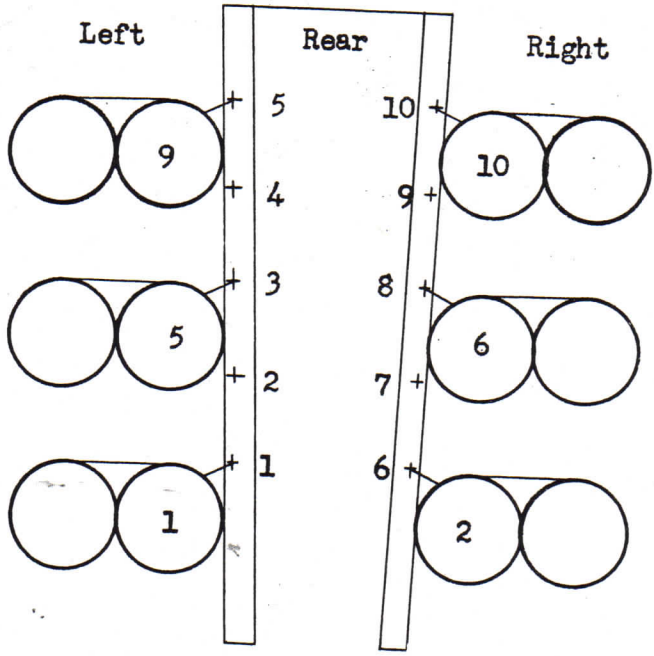
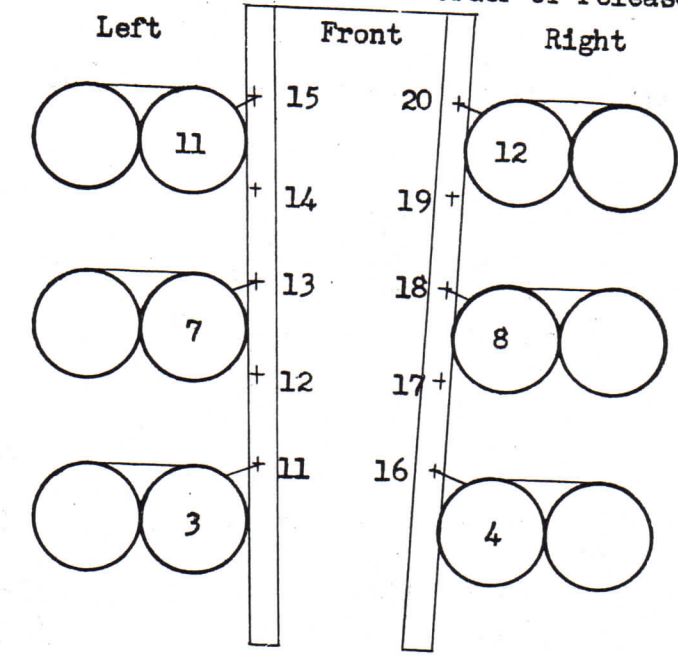
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CHART 6

24 - 250# GP = 6,360#

250# GP in B24

Numbers inside bombs show order of release.



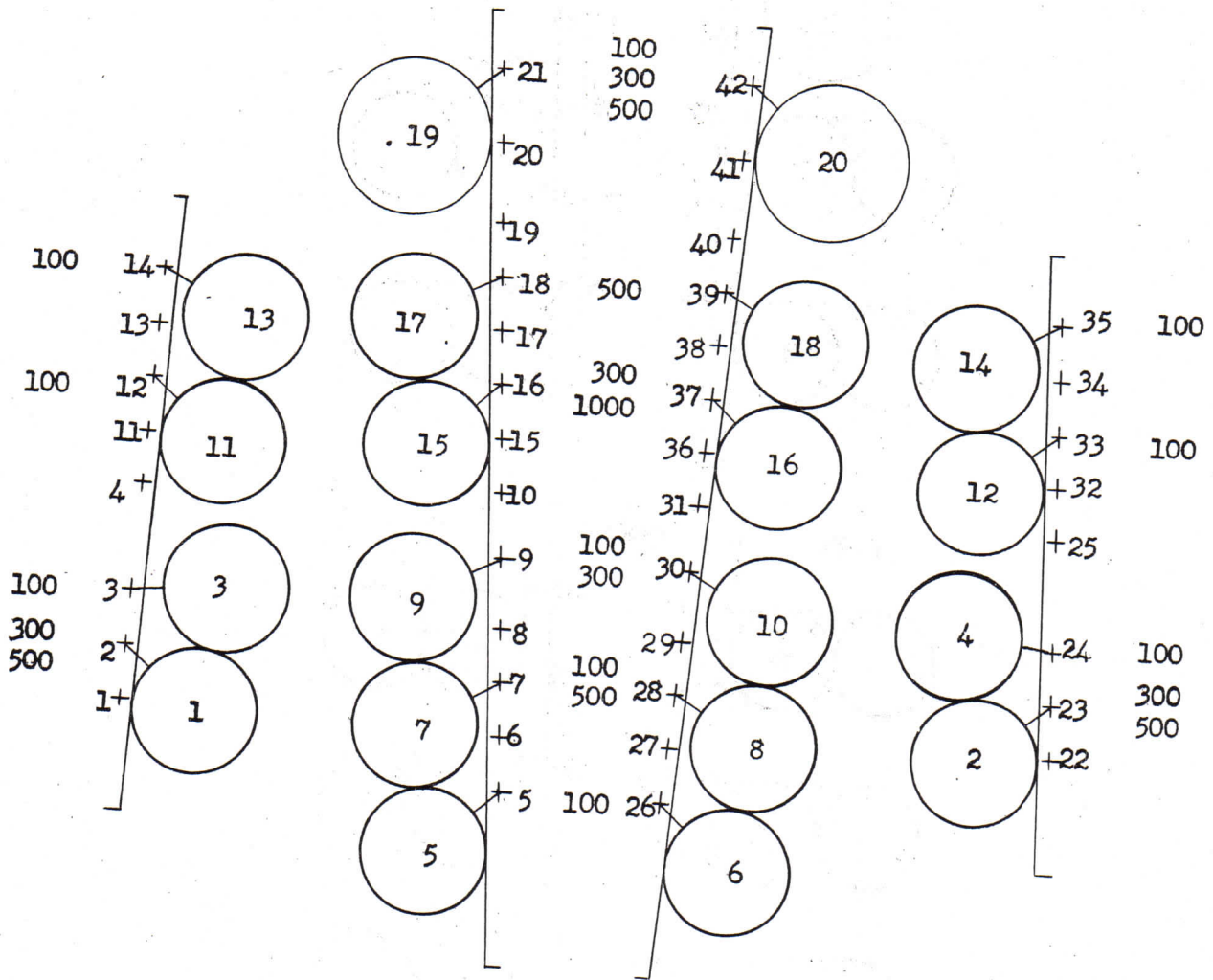
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CHART 7

18 - 250# GP = 4,770# 84%
2 - M-17 IB = 920# 16%
5,690#

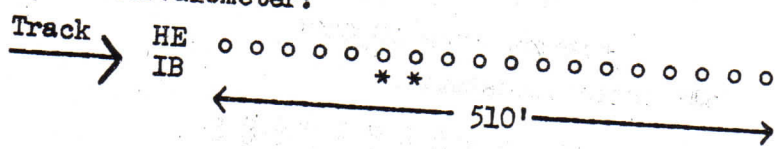
Mixed Load B17

Numbers inside bombs show order of release.



Pattern from 20,000'

30' Intervalometer:



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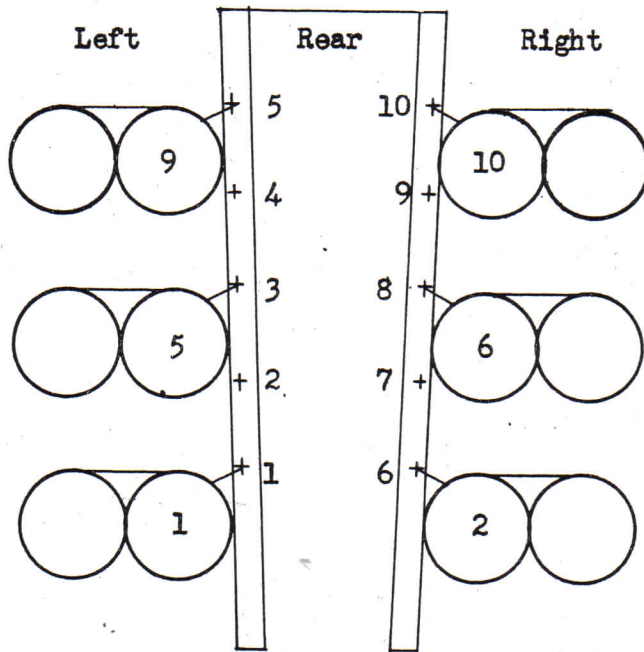
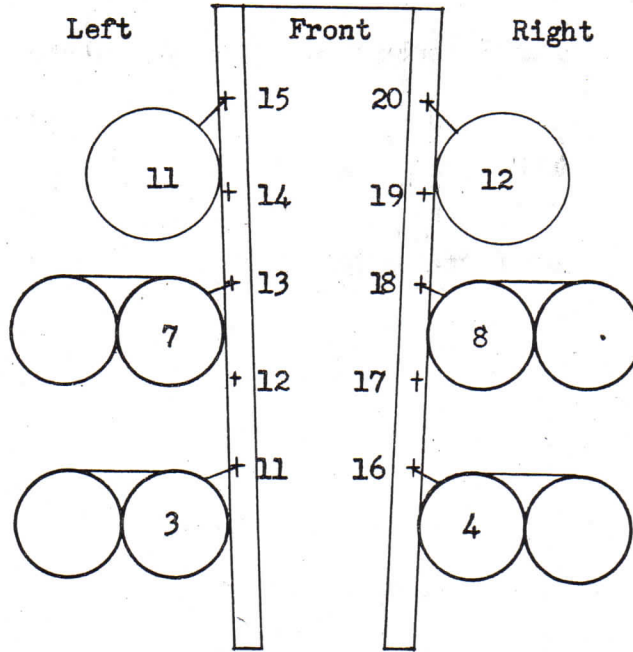
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CHART 7

20 - 250# GP = 5,320# 85%
 2 - M-17 IB = 920# 15%
 6,220#

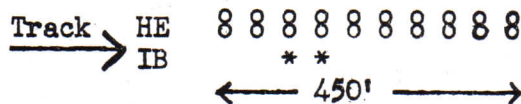
Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'

50' Intervalometer:



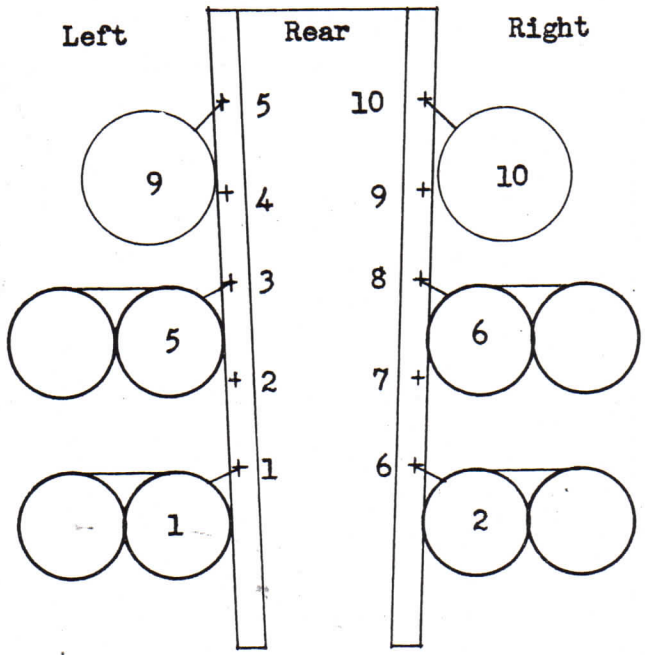
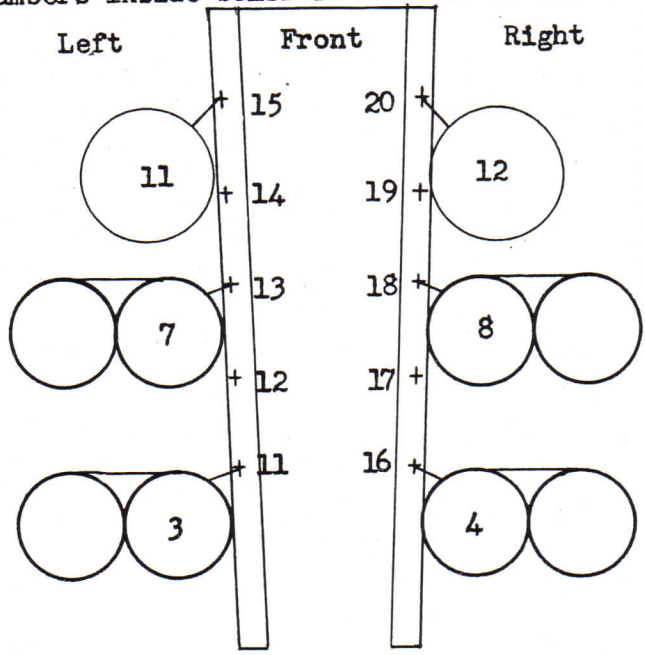
CONFIDENTIAL

CHART 8

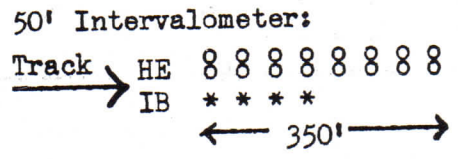
16 - 250# GP = 4,240# 70%
 4 - M-17 IB = 1,840# 30%
 6,080#

Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'



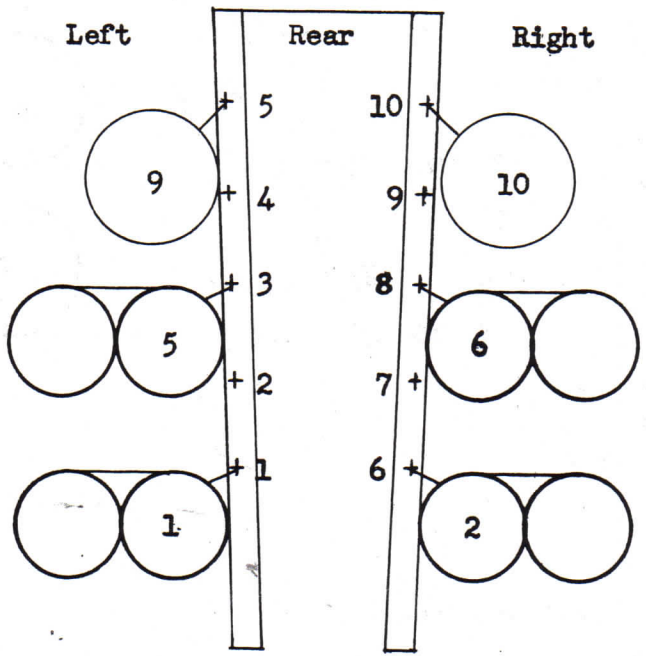
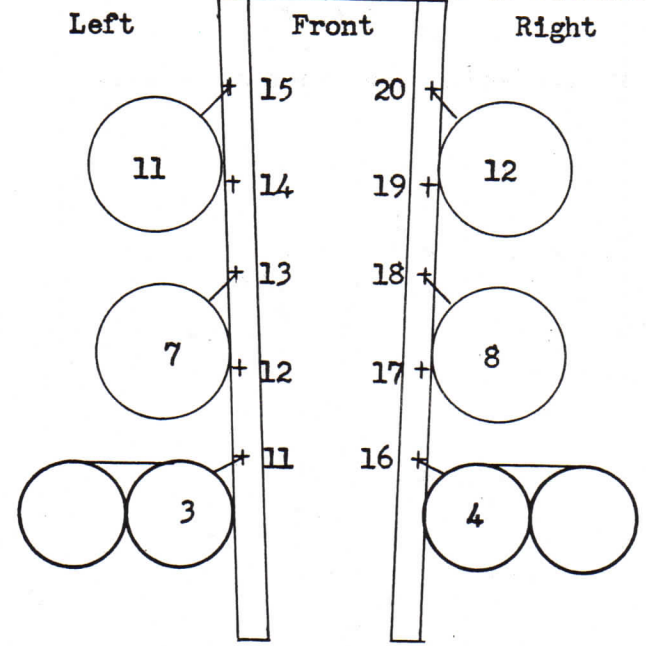
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CHART 9

12 - 250# GP = 3,180# 54%
 6 - M-17 IB = 2,760# 46%
 5,940#

Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'

70' Intervalometer:
 Track → HE 8 8 8 8 8 8
 → IB * * * * *
 ← 350' →

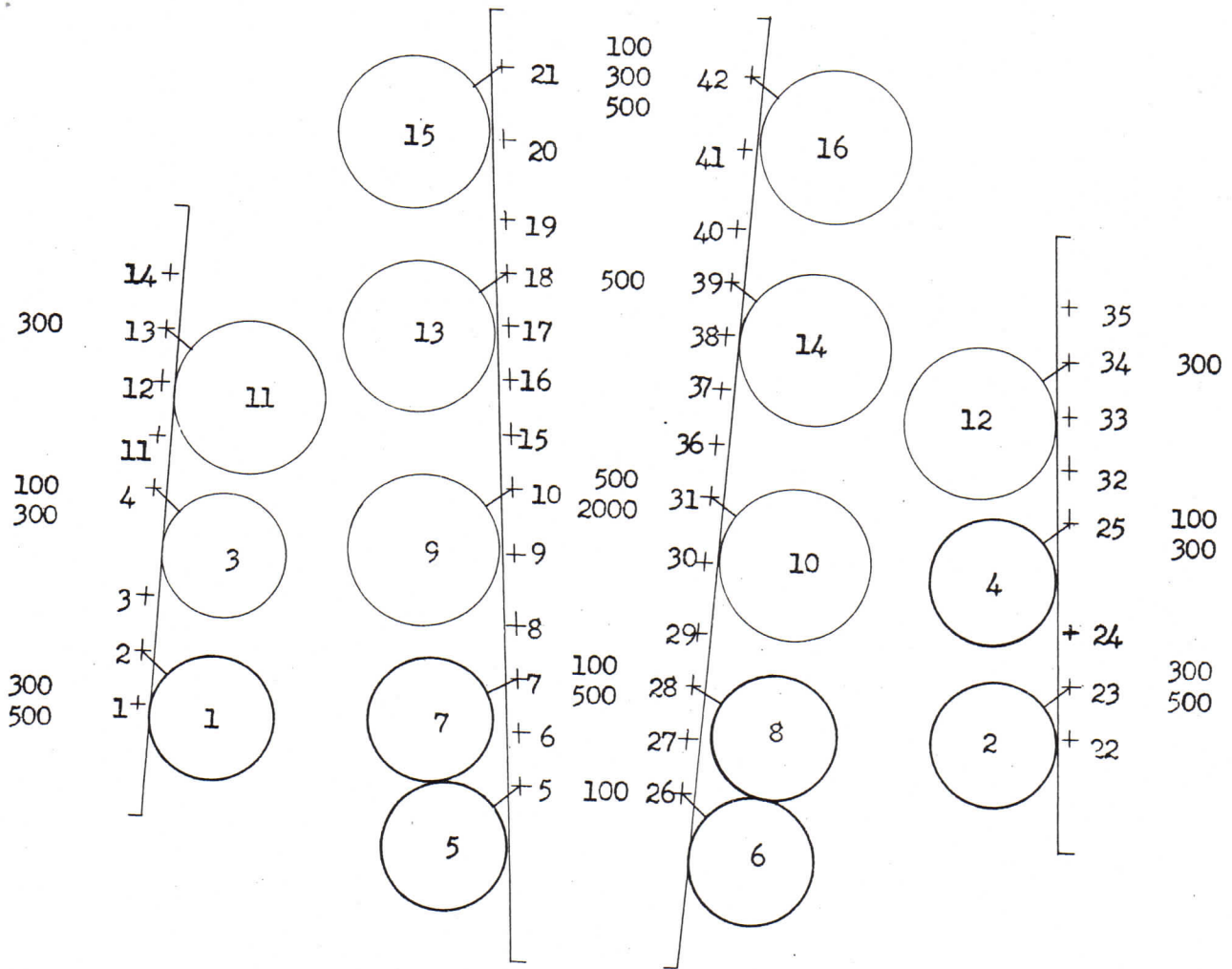
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CHART 10

8 - 250# GP = 2,120# 37%
 8 - M-17 IB = 3,680# 63%
 5,800#

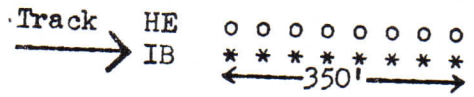
Mixed Load B17

Numbers inside bombs show order of release.

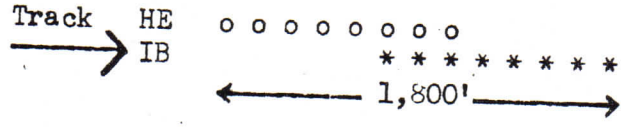


Patterns from 20,000'

50' Intervalometer:



150' Intervalometer:



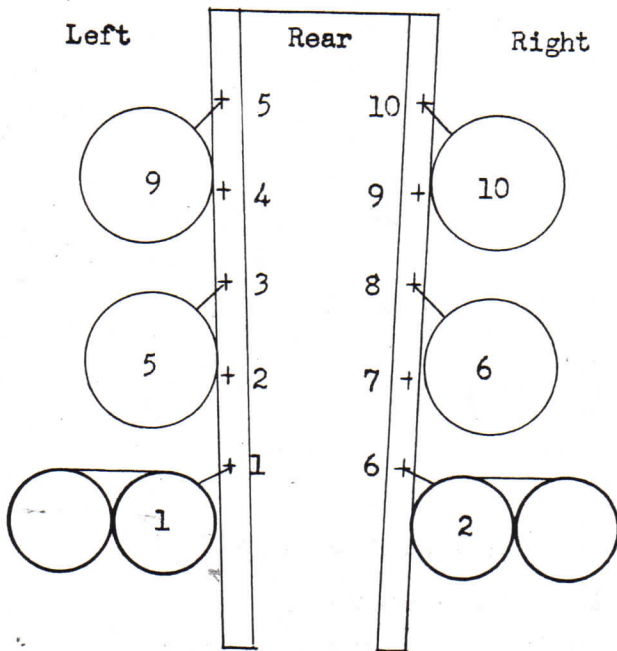
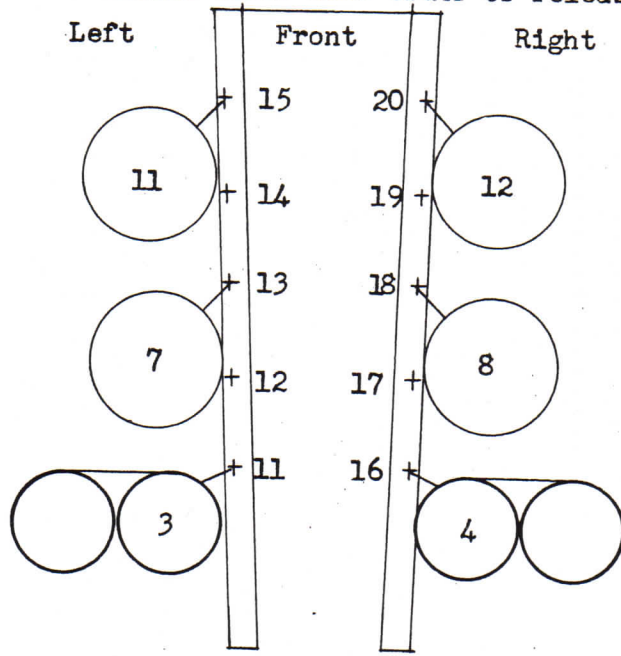
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CHART 10

- 250# GP = 2,120# 37%
 8 - M-17 IB = 3,680# 63%
 5,800#

Mixed Load B24

Numbers inside bombs show order of release.



Patterns from 20,000'
 60' Intervalometer:
 Track → HE 8 8 8 8
 IB * * * * *
 ← 420' →

150' Intervalometer:
 Track → HE 8 8 8 8
 IB * * * * *
 ← 1,200' →

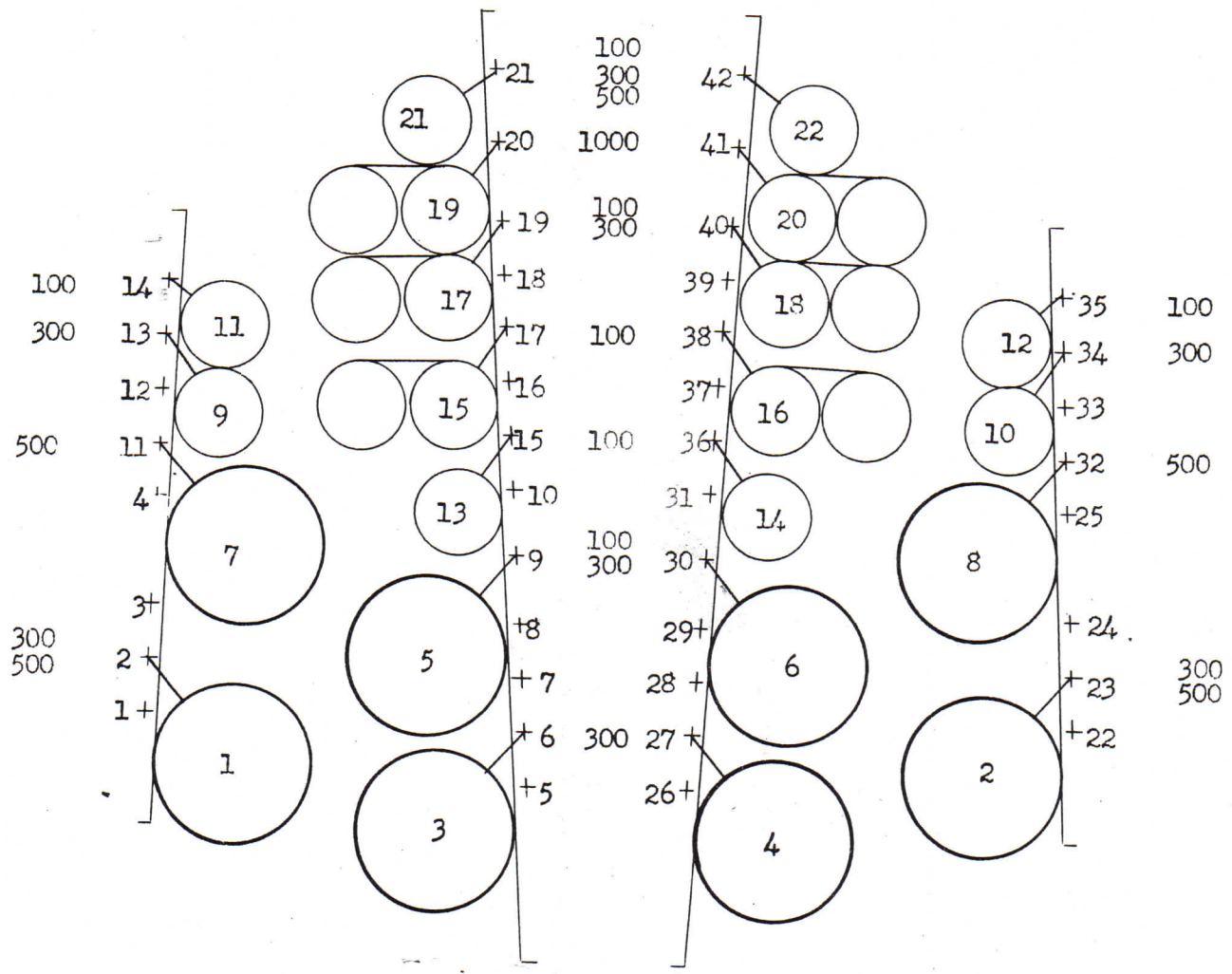
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CHART 11

8 - 500# GP = 4,230# 75%
 20 - M-47 IB = 1,400# 25%
 5,630#

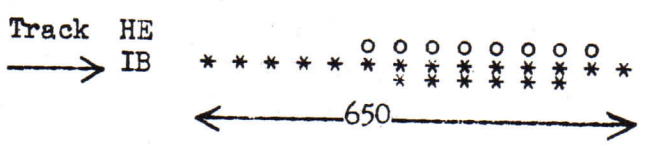
Mixed Load B17

Numbers inside bombs show order of release.



Pattern from 10,000'

50' Intervalometer:



Above 15,000' use minimum intervalometer and a time lag between release of HE and IB except on area targets. See "Release Lag Tables".

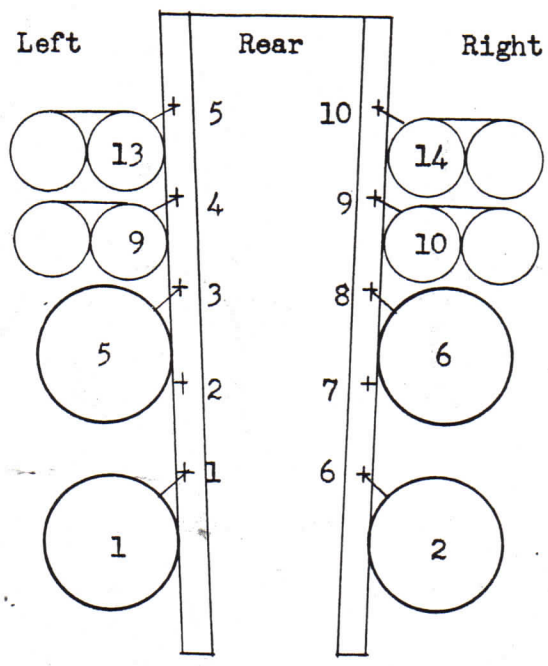
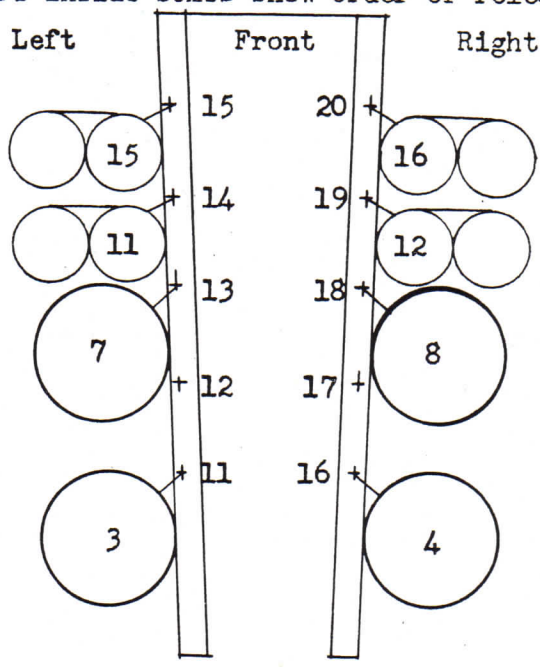
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CHART 11

8 - 500# GP = 4,230# 79%
 16 - M47 IB = 1,120# 21%
5,350#

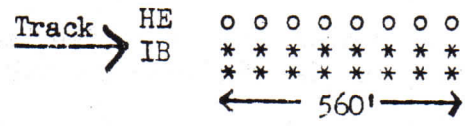
Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 10,000'

80' Intervalometer:



Above 15,000' use minimum intervalometer and a time lag between release of HE and IB except on area targets. See "Release Lag Tables".

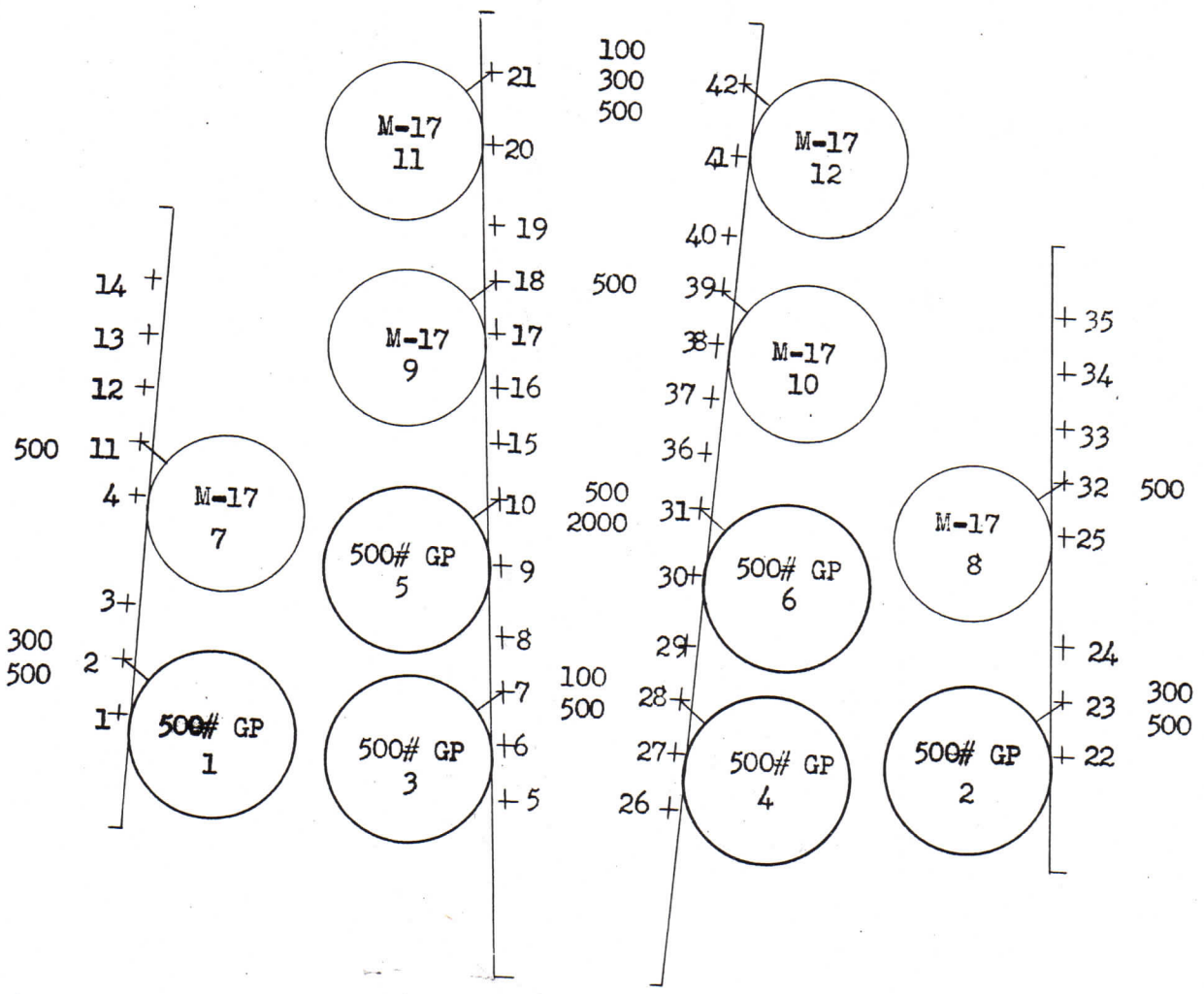
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CHART 12

6 - 500# GP = 3,175# 54%
6 - M-17 IB = 2,760# 46%
5,935#

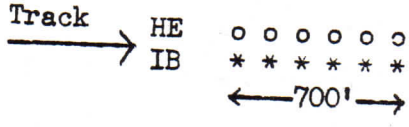
Mixed Load B17

Numbers inside bombs show order of release.



Pattern from 20,000'

140' Intervalometer:



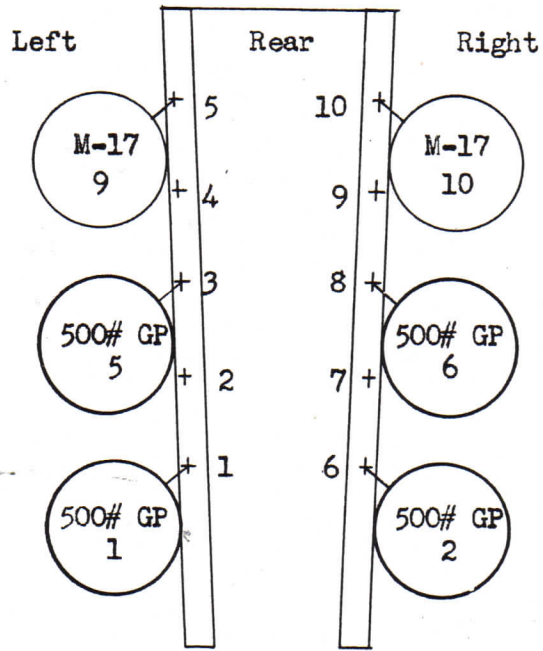
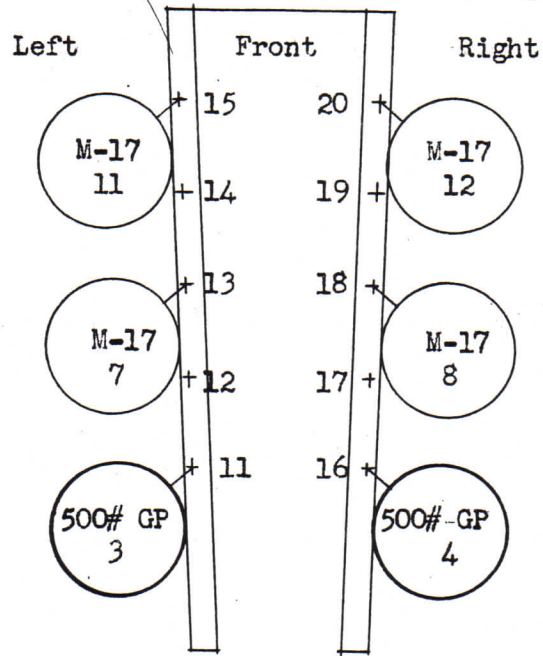
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CHART 12

6 - 500# GP = 3,180# 54%
 6 - M-17 IB = 2,760# 46%
 5,940#

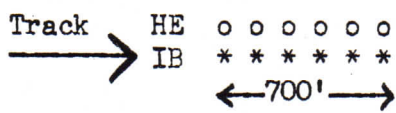
Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'

140' Intervalometer:



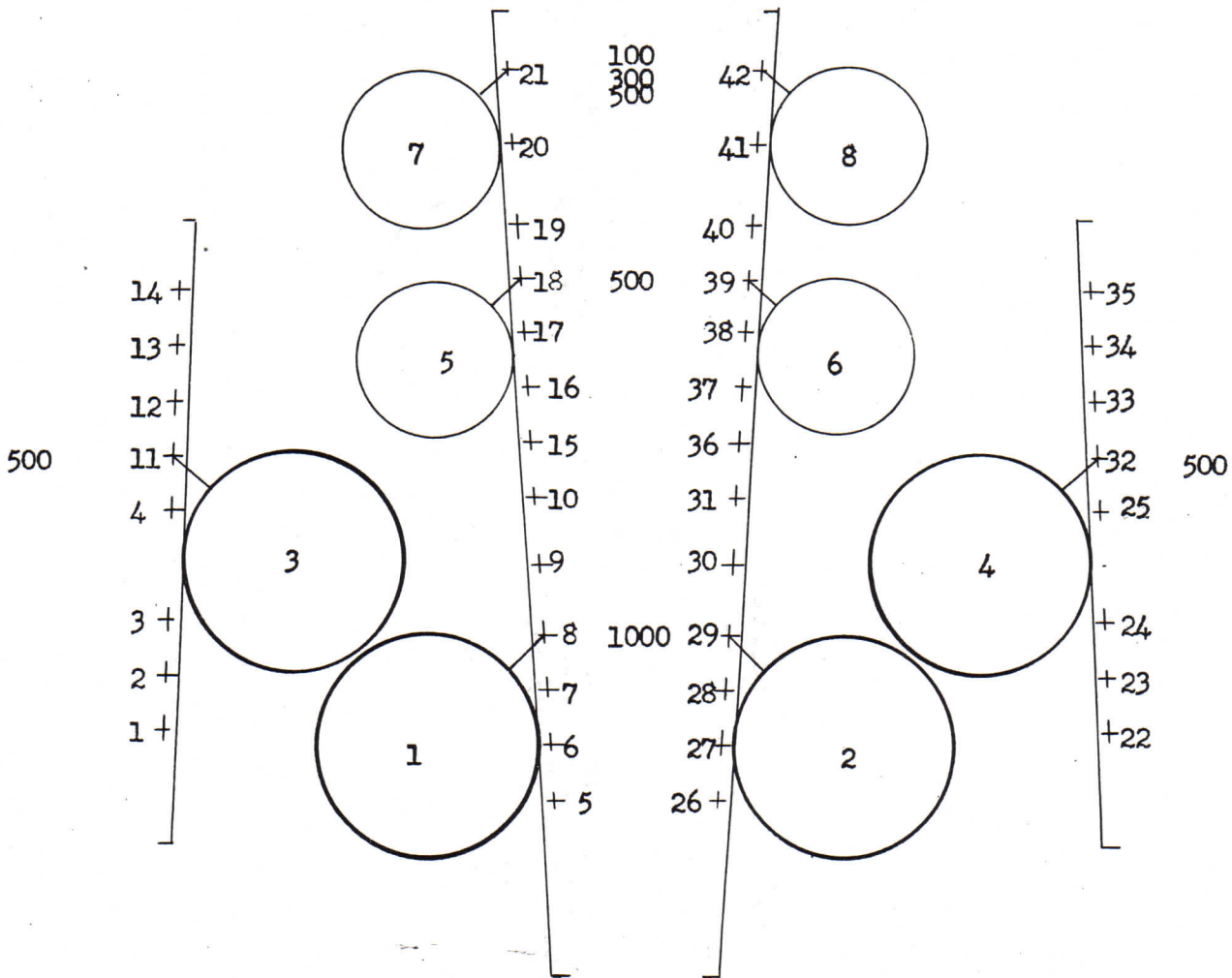
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CHART 13

4 - 1000# GP = 4,040# 69%
 4 - M-17 IB = 1,840# 31%
 5,880#

Mixed Load B17

Numbers inside bombs show order of release.



Pattern from 20,000'

*250' Intervalometer

Track HE o o o o
 → IB * * * *
 ←750*→

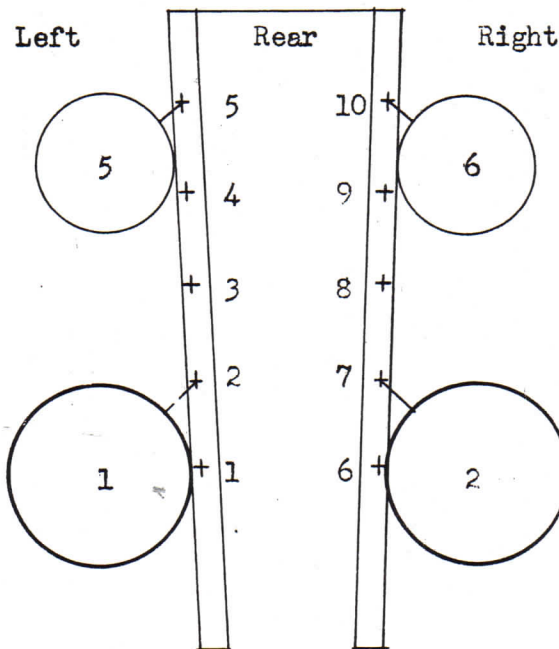
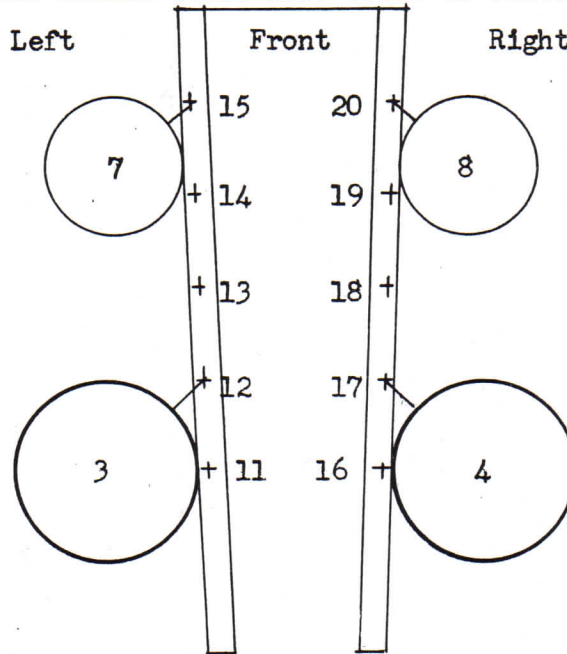
CONFIDENTIAL

CHART 13

4 - 1000# GP = 4,040# 69%
 4 - M-17 IB = 1,840# 31%
 5,880#

Mixed Load B24

Numbers inside bombs show order of release.



Pattern from 20,000'

250' Intervalometer:

