HEADQUARTERS 93d BOMB GROUP (H) AAF
Office of the Operations Officer
AAF 104 APO 558

13 February, 1945.

SUBJECT: Practice Bombing Ranges.

TO : All Squadron Commanders.
ATTN: Squadron Bombardiers, Squadron Navigators & Squadron Training Officers.

1. Information compiled here in this letter is in regards to Bombing Ranges used by the 2nd Air Division and it is the request of this Headquarters that each Bombardier of this Group who is to be doing practice bombing in the U.K, to be given one of these information sheets for his use while practice bombing on U.K. Practice Bombing Ranges.

DATA ON PRACTICE BOMBING RANGES

DASELEYS SANDS
52 52N 00 19E 2 Floating Barges
T.C. from base 304° 43 miles
Elevation - Sea Level
Max. Alt. - Unlimited
Runs from any direction except formation bombing which is from S to N only

STACKYARD GREEN
52 04N 00 52E 100' circle
T.C. from base 214° 29 miles
Elevation 200'
Max. Alt. 10000'
Runs from any direction

Sutton Walk
52 04N 01 22E 100' circle
T.C. from base 174° 24 miles
Elevation 90'
Max. Alt. 14000'
Runs from any direction

OTMOOR
51 49N 01 10W 60' Triangel
T.C. from base 247° 98 miles
Elevation 200'
Max. Alt. 29000'
Runs from any direction in day
At night only W-E or E-W runs

GLOOSTON
52 34N 00 53W 100' circle
T.C. from base 275° 79 miles
Elevation 480'
Max. Alt. 12000' Min. Alt. 3500'
Runs from S.W. to N.E. only. Pattern must never cross Rugby or Leicester.

CRICCIETH
52 53N 04 17W Floating pyramid
T.C. from base 277° 195 miles
Elevation - Sea Level
Max. Alt. 14000'
Runs from any direction

SCARES ROCK
54 40N 04 42W Large rock in water
T.C. from base 300° 252 miles
Elevation - Sea Level
Max. Alt. 20000'
Runs from any direction

GRASSHOLM ISLAND
51 44N 05 29W Island
T.C. from base 260° 252 miles
Elevation - Sea Level
Max. Alt. Unlimited
Runs from any direction. Live bombs may be dropped. Blind bombing may be done.

Wayne M. Beumeler
WAYNE M. BEUMELER
Major, Air Corps.,
Operations Officer.

DATE _____

BOMBARDIERS' BRIEFING FORM

1. Target Data
   (a) Primary target _____
   (b) Secondary target _____
   (c) Elevation of target (primary) _____ (Secondary) _____
2. Heading of bombing run (True) _____ (Mag) _____
3. Types and number of bombs _____
4. IP Data:

5. Aiming point _____
6. Type of bombing _____
7. Fuse setting _____
8. Bombing altitude (1st Squadron) _____ (2nd Squadron) _____
   (3rd Squadron) _____ (4th Squadron) _____
9. Ture altitude (1st Squadron) _____ (2nd Squadron) _____
   (3rd Squadron) _____ (4th Squadron) _____
10. Wind at altitude _____
11. Target temperature - Ground _____ Altitude _____
12. Indicated air speed _____
13. True air speed _____
14. Ground speed _____
15. Drift _____
16. Trail in Mils - (1st Squadron) _____ (2nd Squadron) _____
    (3rd Squadron) _____ (4th Squadron) _____
17. Disc speed - (1st Squadron) _____ (2nd Squadron) _____
    (3rd Squadron) _____ (4th Squadron) _____
18. Intervalometer setting _____
19. Target pressure _____
20. Flares Data _____
21. ATF - (1st Squadron) _____ (2nd Squadron) _____
    (3rd Squadron) _____ (4th Squadron) _____
22. Tangent - (1st Squadron) _____ (2nd Squadron) _____
    (3rd Squadron) _____ (4th Squadron) _____
23. Lead Bombardier: (1st Squadron) _____ (2nd Squadron) _____
    (3rd Squadron) _____ (4th Squadron) _____
24. Information _____
    _____
    _____
25. Mean Temperature _____

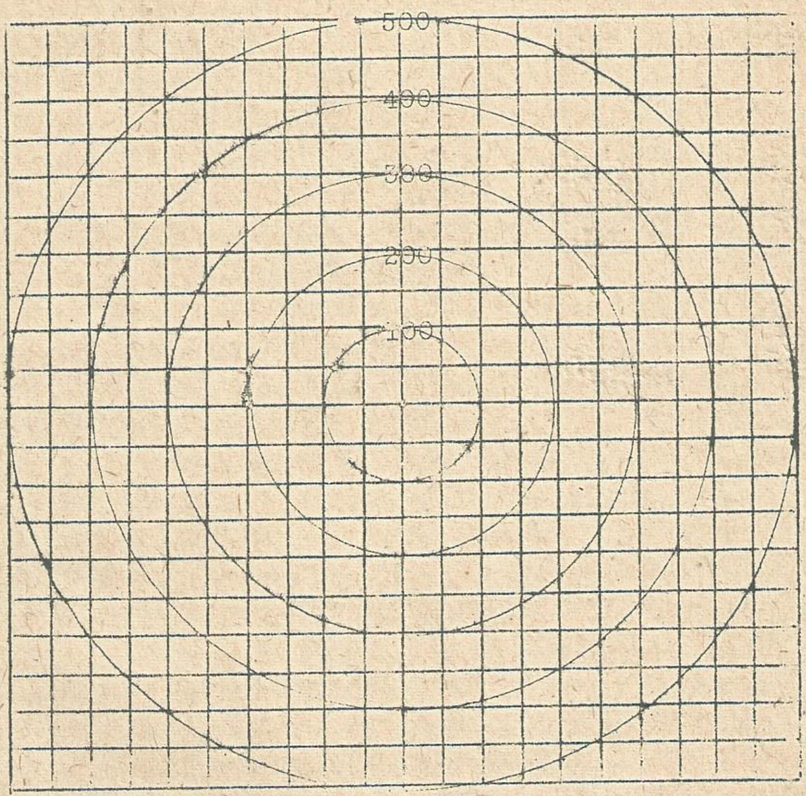
Briefing Bombardier _____

<u>PRACTICE BOMBING RECORD</u>

BOMBARDIER (______________________________) DATE (__________________)

PILOT (__________________________________) SQDN (__________________)

AIRCRAFT NO. (________________) ALTITUDE (__________________)



ERRORS IN FEET

												Total Errors	Aver Errors	REMARKS	
CIRCULAR															
DEFLECTION	RIGHT														
	LEFT														
RANGE	OVER														
	SCHORT														
NO. OF BOMBS															
RELEASE NUMBERS															

TO BE TURNED IN TO GROUP BOMBING OFFICE

CAMERA BOMBING RECORD

BOMBARDIER _____ DATE _____

NAVIGATOR _____ SHIP NO. _____

PILOT _____ GROUP _____ SQUADRON _____

NO.	TARGET		NO. OF EX-POSURES	ALTITUDE	MAGNETIC		DRIFT ANGLE	TAN. D/A	ERROR IN FEET			ATF	
	ASSGND.	HIT		TRUE IND.	HDNG	TRACK			RE	DE	CE	ACT.	USED
1.													
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													

INTERVAL BETWEEN PICTURES FOR PHOTOGRAPHIC BOMBING

FOR ALTITUDE OF	GROUND SPEED MPH	INTERVAL IN SECONDS
10,000 ft.	200	10
	250	8
	300	7
	350	6
9,000 ft.	200	9
	250	7
	300	6
	350	5
8,000 ft.	200	8
	250	6
	300	5
	350	4

THIS IS FOR AN OVERLAP OF 50%. TAKE THE NEAREST GROUND SPEED FOR ALTITUDE. PHOTOGRAPH SHOULD BE TAKEN AT LEAST AS OFTEN AS SHOWN BY THIS TABLE BUT CARE SHOULD BE TAKEN THAT THE LAST PHOTO IS TAKEN AT EXACT TIME OF SIMULATED BOMB STRIKE.

ALTITUDE, DS & TRAIL COMPUTATION FOR VARIOUS ALTITUDES

IND ALTITUDE	TRUE ALTITUDE	DS	TRAIL	REMARKS

ALTITUDES EVERY 500' BELOW BRIEFED ⇔ ALTITUDES EVERY 500' ABOVE BRIEFED

To be turned in at interrogation to group bombardier.

12C DATA SHEET

NAME _____ DATE _____ MISSION NO. _____ PLANE NO. _____

STABILIZER ON _____ OFF _____ SIGHT ON _____ OFF _____ SIGHT NUMBER _____ CAMERA NUMBER _____

RUNWAY PRESS ALT. _____ TARGET ELEV _____ TARGET PRESS ALT _____

TRUE ALT ABOVE TARGET _____ D.S. _____ TRAIL _____ CAL IND ALT _____

WINDS ALOFT::DIRECTION _____ VELOCITY _____ PILOT'S NAME _____

RELEASE NO.	HEADING	DRIFT	TANGENT OF D.A.	SYNCHRONIZATION	IMPACT		TIME OF IMPACT	WEATHER	VISIBILITY	TURBULENCE	DIFFERENCE IN ALTITUDE	C.I.A.S.	LENGTH OF RUN
					DISTANCE	CLOCK							

2ND A. F. STANDARD ALTITUDE COMPUTATION
Using C-2 Computer

1 Barometric Pressure at Target	_____	7 Pressure Altitude above Target	_____
2 Standard Density	_____	8 Flight Level Temperature	_____
3 Pressure Variation	_____	9 True Air Speed	_____
4 Surveyed Elevation of Target	_____	10 Compression Error	_____
5 Pressure-Elevation of Target	_____	11 Mean Temperature	_____
6 Flight Level Pressure Altitude	_____	12 Se up C-2 using #5, #7, #11.	

Enter Tables

EXPLANATION OF C-2 COMPUTATION

A. Find Pressure Variation:- This is the difference between Standard Density (29.92 and the Barometric Pressure at the Target. If the Pressure at the Target is larger than 29.92, the Variation or difference between the two figures is a MINUS figure. If the Pressure at the Target is less than 29.92, the Variation is a PLUS figure.

B. Multiply the Pressure Variation by 1000 to convert difference to feet.

C. Apply Pressure Variation to the Surveyed Target Elevation. This gives Pressure Elevation of Target.

D. Subtract Pressure Elevation of Target from Flight Level Pressure Altitude to get Pressure Altitude above the Target.

E. Take Flight Level Temperature and apply Compression Error Correction. To get this Correction, Square T.A.S. and multiply by the Constant -.00008. Add 1 degree per 1000 ft. of Pressure Altitude above Target in order to get Mean Temperature.

F. On Pressure Altitude Scale, set and clamp the Pressure Elevation of Target.

G. Under Black Cursor, set Pressure Altitude above Target.

H. Set Red Cursor over Mean Temperature.

I. Under Red Cursor, read Bombing Altitude.

J. Enter Tables.

COMPRESSION ERROR CORRECTIONS

T.A.S.	CORRECTION
160 to 176 equals	-2
177 to 209 equals	-3
210 to 237 equals	-4
238 to 250 equals	-5

THIS SHEET MUST BE TURNED IN WITH YOUR FORM 12C AT THE END OF YOUR MISSION.