

HEADQUARTERS
NINETY FIFTH BOMBARDMENT GROUP (H)
Office of the Operations Officer

17 November 1943.

SUBJECT: S-3 Narrative Report of Operational Mission 16, November 1943.

TO : Commanding Officer, 95th Bombardment Group (H), APO 634.

1. The 95th Bomb Group was alerted at 1800, 15, November 1943. Bomb loading to be 5 X 1000 Lb. GP bombs. The 13th Combat Wing was to form the last Combat Wing of the 3rd Bomb Division in trail formation. There was to be a three (3) minute interval between Combat Wings and a one (1) minute interval between Groups. All Groups to fly and bomb at 12,000'.

2. Twenty two aircraft departed this field at 0700 to form the 95th Group. Group assembly was over Buncher #8 at 2500' above the overcast. Group assembly was made without difficulty due to climb through overcast and dark assembly. This caused a late departure to Splasher #4 so an interception course was held to right of course with Group intercepting briefed course approximately thirty (30) miles out over North Sea.

3. Ship No. 7766 piloted by Lt. Hargrove aborted from the formation at 0930 while over the North Sea due to #2 supercharger freezing up. Ship No. 0218 piloted by Lt. Tucker became lost from the formation at 0830 when it went through a cloud. Pilot continued on course for fifty (50) minutes and returned to base due to #2 loss of power on #2 engine. Ship No. 1123 piloted by Capt. Snow became lost from the formation at 0830 when it went through a cloud. Pilot continued on course for fifty (50) minutes and was unable to find the Group or any other Group so he returned to the base. Ship No. 3545 piloted by Lt. Rongstad was unable to assemble with the 95th Group in the dark so proceeded to Splasher #4 where he was unable to find the 95th Group so joined a Group in the 1st Bomb Division. Proceeding on course with this Group the Ball Turret gunner froze his hands so pilot returned to base.

4. Ship No. 0674 piloted by Lt. Smith became separated from the 95th Group in a cloud and being unable to find them again joined the 385th Group and bombed with that Group. Ship No. 0342 piloted by Lt. Carson became separated from the 95th Group in a cloud and being unable to find them again joined the 96th Group and bombed with them. Ship No. 0634 piloted by Lt. Rogers became separated from the 95th Group in a cloud and being unable to find them again joined the 96th Group and bombed with them. Ship No. 6098 piloted by Lt. Scott became lost from the formation in a cloud and being unable to find them again joined the 390th Group and bombed with them.

5. The 95th Group made land fall on the Norweigan Coast with fourteen aircraft from this Group and one from the 1st Bomb Division. Confusion at the target by so many Groups caused the 95th Group to make two (2) 360° circles before dropping bombs. Bombing run was short but effective with good results.

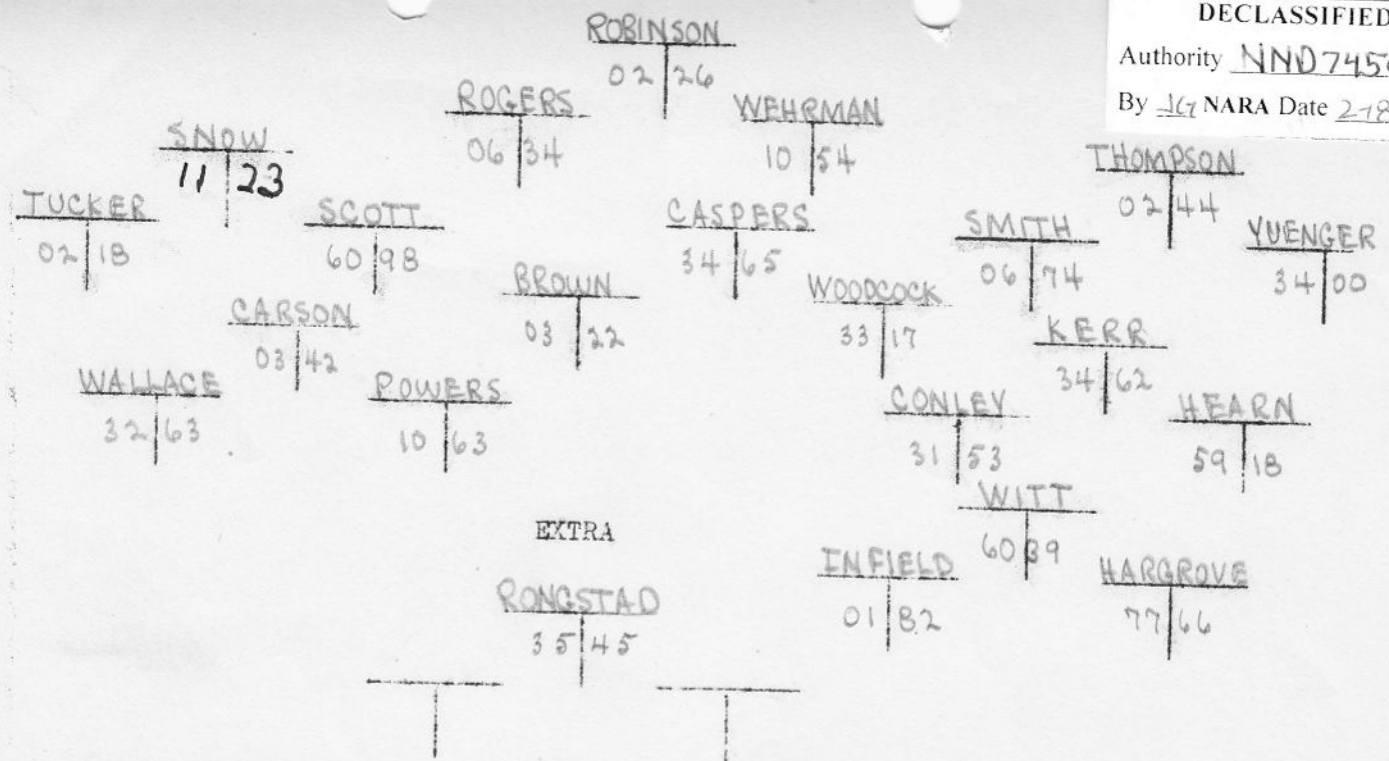
6. No flak was encountered over the target and slight flak on departure from Norweigan Coast on return. No damage to aircraft or injury to personnel was sustained.

7. Route home was flown on top of overcast as briefed and descent to land was made individually at one (1) minute interval by ships.

8. Aircraft No. 3465 piloted by Lt. Caspers and aircraft No. 6039 piloted by Lt. Witt were unable to transfer gasoline from Tokyo tanks so left 95th Group on route home to procede to advanced bases in Scotland. These two aircraft returned to this station at 1700 and were diverted to Bassingborn due to weather.

9. All aircraft returned safely.

HARRY G. MUMFORD
Major, Air Corps,
Operations Officer.



READINESS 0555
 STATIONS 0640
 TAXI 0655
 TAKE OFF 0710
 RENDEZVOUS 0735

EXTRA SHIPS
 334 1123 (lead)
 335 _____
 336 7734
 412 9869

RENDEZVOUS ALTITUDES:
NONE

BOMBING ALTITUDES:
12,000'
95th

OPERATING PROCEDURES
 CLIMB 150 m.p.h., 250' min.
 CRUISE 155 m.p.h.
 DESCENT 170 m.p.h., 222' min.

F/DF G BOMBER-BOMBER A

VHF CHANNEL NONE
 (IN) (OUT)

HF CALL SIGNS:
 OMERS _____
 LIGHTERS _____
 ROUND _____
 (IN) (OUT)

VHF/DF STATIONS:
 FRAMLINGHAM: U.S.

BURY ST. EDMUNDS: CHAIRLEG (B) BAKER
 ON CHANNEL "B"

R/T COLLECTIVE CALL SIGNS:
 rd B.D. STAMPOUT
 3th C.W. ZOOT SUIT
 5th B.G. " RED "
 10th B.G. " YELLOW "
 90th B.G. " GREEN "

95th GROUP R/T CALL SIGNS
 LEAD SQUADRON ZOOT SUIT RED ONE
 HIGH SQUADRON ZOOT SUIT RED TWO
 LOW SQUADRON ZOOT SUIT RED THREE

BRANFF TOWER - "SHORTLEG" 6440K.C.

LARES:
 3th C.W. G-G
 5th B.G. R-G
 10th B.G. R-Y
 90th B.G. G-Y

COLORS OF THE DAY:
 0100-0700 G-G "L" LOVE "O" OBOE
 0700-1300 R-G "C" CHARLIE "I" ITEM
 1300-1900 Y-Y "P" PETER "V" VICTOR
 PERIOD CARTRIDGE CHALLENGE REPLY

3th C.W. COLLECTIVE ALDIS
 5th B.G. RED "B"
 10th B.G. RED "D"
 90th B.G. RED "J"

95th B.G. COLLECTIVE ALDIS FOR NIGHT RENDEZVOUS
 LEAD SQUADRON AMBER "B"
 HIGH SQUADRON GREEN "B"
 LOW SQUADRON RED "B"

INTERPRETATION REPORT NO. K.1812.

Photographs taken by 540 Squadron.

<u>SORTIE</u>	<u>DATE</u>	<u>SCALE</u>	<u>MEAN TIME OF PHOTOGRAPHY.</u>
N/975	17 Nov. 43.	1/7,400 (F.L.36")	1320 hours.
N/976	18 Nov. 43.	1/8,500 (F.L.36")	1300 hours.

LOCALITY : RJUKAN

- I. Vemork Power Station and Electrolysis Plant.
- II. Electro-Chemical Works.

DAMAGE ASSESSMENT

COVER AND QUALITY.

The Vemork Power Station, Electrolysis Plant and the Electro Chemical Works are covered on both these sorties. Photographs of the targets on both sorties are of poor quality (scale 1/7,400 and 1/8,500)

PERIOD UNDER REVIEW.

These photographs were taken after the daylight attack on 16 Nov. 43 by aircraft of VIIIth U.S. Bomber Command.

STATEMENT ON DAMAGE.

These plants belong to the Norsk Hydro Elektrisk Kraelstof A/s, which is the largest undertaking in Norway. The Electrolysis Plant, the largest in the world, supplies the electro-chemical works with hydrogen and oxygen by pipe line and also produces heavy water. The Hydro-electric Power Station at Vemork is one of the two largest on the grid supplying the Norsk Hydro complex. The water, after being used at Vemork, is passed on to the other large station at Saheim. The Electro-Chemical Works is the largest plant of this undertaking and produces ammonia as its main product.

Assessment of damage is difficult owing to the poor quality of the photographs. As it is unlikely that better quality can be obtained at this time of the year, a detailed assessment is being made from the present photographs. Many of the statements below should be treated with considerable reserve.

I. Vemork Power Station and Electrolysis Plant.

The Power Station is fairly heavily damaged at the W. end and two smaller incidents have affected the central portion of the roof. There appears to be a second area of roof damage involving the N. half of the mechanical workshop and a direct hit may have been obtained in the lower reaches of the penstocks.

The Electrolysis Plant appears to be more severely damaged, the W. central portion of the upper storey being partly destroyed and the hydrogen gas holder severely damaged. (3053 of N/975 and 4035 of N/976).

II. Electro-Chemical Works.

There is considerable damage to the central and eastern parts of the works; damage to the latter has mainly affected the transport facilities. No damage is apparent amongst the important buildings at the extreme western end of the target area.

Numbers refer to annotations on the print distributed with this report, No. 4045 (N/976), Neg. No. 31,784.

- (3) Compression house (reported not to be in use): possibly on fire.
- (4) Building for dissolving limestone in nitric acid: probable damage by fire (smoke obscured)
- (5) Building for filtering nitrate solution: probable damage.
- (6) Building for concentrating nitrate solution: severe damage at N. end and still smoking; roof probably damaged over the whole area.
- (7) Water pumping station: roof possibly destroyed.
- (8) Building for packing nitrate of lime: possible damage.
- (9) Building housing absorption towers (reported not to be in use): hits on W. end of building.
- (10) Building housing nitric acid concentration plant: possible damage at N. end.
- (11) Mechanical workshops and forge: S.E. corner destroyed and possible damage to remainder.
- (12) Telephone exchange and electric workshop: roof partly destroyed.
- (13) Rolling stock repair shops (including carpenters' shop): 3/4 destroyed.
- (14) Locomotive sheds: roof of S. building collapsed.
- (15) Laundry and unidentified adjacent building: roof damage over about half of each building.
- (16) School of technology: roof of S. building possibly damaged; roof and upper storey of N. building destroyed by fire.
- (17) Railway storage shed: probably damaged by hits on adjacent tracks.
- (18) Railway station: gutted over half its area; one or two hits on adjacent tracks and wagons damaged.

Print 4045 (N/976), Neg. No. 31,784 distributed.

Plan used: A.I.(k) Plan of Works.

SECRET.

R.A.F. STATION,
MEDMENHAM.

K/KWS/A

DISTRIBUTION NO. 24.

A.I.(k)	5	1
E	:	162
I	:	<u>31</u>
		194 copies.



INTERPRETATION REPORT NO. S.A. 661.

ATTACK ON HYDRO ELECTRIC POWER STATION AND CHEMICAL WORKS
AT RJUKAN, NORWAY ON 16.11.43.

(i) INFORMATION RECEIVED ON THE ATTACK

- (a) This report is based on photographs taken during a daylight attack on the HYDRO ELECTRIC POWER STATION and CHEMICAL WORKS at RJUKAN by 174 aircraft of United States Eight Bomber Command from 1131 to 1212 hours on 16.11.43.
- (b) Bombs were dropped as follows:-
 - 1. 162 aircraft dropped 711 x 1000 lb. G.P. Bombs and 201 x 500 lb. G.P. bombs on the HYDRO ELECTRIC PLANT.
 - 2. 12 aircraft dropped 118 x 500 lb. G.P. bombs on the CHEMICAL WORKS.
- (c) The aircraft were not escorted.
- (d) The aircraft approached the Hydro Electric Plant from the Southwest and the Chemical Works from the East.

(ii) BOMB BURSTS OBSERVED ON AND NEAR THE HYDRO ELECTRIC POWER STATION.

- (a) A concentration of bomb bursts is seen in the Northwestern part of the target extending from the Power Station and felling across the Water Electrolysis House. The Northern portion of the Penstock has received direct hits. It is impossible to positively determine the location of bomb bursts in some areas of the target due to small scale photographs and haze over the target.
- (b) One direct hit is seen on the North wall of the Power Station and there are other possible direct hits on the Northwest corner of the building. Bombs are seen bursting in the area between the Power Station and the Water Electrolysis House. The eastern portion of the latter building has received at least five direct hits with many additional bomb bursts along the North side on and about possible water cooling units. Two direct hits, and a possible third, are seen on the East and West sides of the penstock approximately 500 feet from the power station.
- (c) A group of five bomb bursts is seen to cover a small area near the South end of the Penstock just West of the Sluice Gate House.
- (d) Approximately 95 bomb bursts are observed to extend Northeast, Northwest and West from the target for a maximum distance of 1/2 mile. The majority of these bombs fell in woodlands with the remainder striking roads and streams.

(iii) BOMB BURSTS OBSERVED ON AND NEAR THE CHEMICAL WORKS.

- (a) The majority of bursts seen are concentrated on and very near the Chemical Works. There are a number of direct hits on various buildings, but due to haze and smoke over this target also it is difficult to accurately plot many of these direct hits.
- (b) At least 1 direct hit can be seen on the Nitric Acid Concentration plant and 2 direct hits on the Absorption towers. 3 direct hits are observed on the Mechanical Workshops and forges.
- (c) A heavy concentration of bursts are seen across the Carpenters

possible hits on the Rjukan storage house and the Rjukan railway station. There are also several probable hits on the railway tracks within the target area.

- (d) Another concentration of bursts can be seen on the Combustion of Ammonia plant, Compression house and another unidentified building, with bursts extending in the wooded area to the South.
- (e) Scattered bursts are observed in the wooded area immediately South of the Locomotive sheds and two bursts can be seen on the banks of the river, just North of the Locomotive sheds.
- (f) Eleven bombs can be seen falling over an area, approximately 3 miles South of the target area, but no bursts are seen on the photographs.
- (iv) ANNOTATED PRINT NO. 1. (Photo. SAV.95/160 No.7)
- A. A concentration of bomb bursts falling across the Water Electrolysis House to the Northwest corner of the Power Station.
- B. A group of bomb bursts striking the Northern part of the Penstock.
- (v) ANNOTATED PRINT NO. 2 (SAV 392/8 No. 8)
- A. Shows a concentration of bursts on the Nitric Acid concentration plant and the Absorption towers.
- B. Shows another concentration of bursts across the Locomotive sheds, Carpenters shop, Rolling stock repair shop, Rjukan storage house and Rjukan railway station.

(vi) BOMB PLOT AND PRINTS

A bomb plot has been prepared for each target and will be generally distributed with Annotated Prints Nos. I and II.

(vii) PHOTOGRAPHS RECEIVED.

SAV 93/14	16.11.43.	1204 hrs.	1/22,300	(F.L.7")	13,000'	'B'
" 93/964	"	1131 hrs.	1/20,600	"	12,000'	'C'
" 389/	"	1210 "	1/22,300	"	13,000'	'B'
392/8	"	1212 "	1/24,000	"	14,000'	'B'
392/9	"	" "	"	"	"	'B'
392/10	"	" "	1/24,000	(F.L.6 ³ / ₈ ")	14,000'	'B'
O - 392/11	"	" "	Oblique	"	14,000'	'B'
O - 392/12	"	" "	"	"	12,000'	'B'
SAV 94/154	"	1155 "	1/20,600	(F.L.7")	12,000'	'B'
94/155	"	1202 "	"	"	"	'B'
94/156	"	" "	"	"	"	'B'
94/157	"	" "	"	"	"	'A'
389/80	"	1145	1/12,000	(F.L.12")	"	'A'
389/81	"	"	1/20,600	(F.L.7")	"	'B'
385/82	"	1144	1/20,600	"	"	'B'
95/159	"	1204	1/20,600	"	"	'B'
95/160	"	1200	"	"	"	'B'
100/80	"	1142	1/12,000	(F.L.12")	"	'A'
100/82	"	1143	1/18,000	(F.L.8")	"	'A'
100/85	"	"	1/18,000	"	"	'B'
390/64	"	1204	1/20,600	(F.L.7")	"	'B'
390/65	"	"	"	"	"	'B'
O - 390/66	"	"	Oblique	(F.L.6 ³ / ₈ ")	"	'B'
SAV 96/81	"	Unknown	1/12,000	(F.L.12")	"	

19 November, 1943

Authority NND 745005By 167 NARA Date 2-18-09IMMEDIATE INTERPRETATION REPORT NO. K.1812

LOCALITY: RJUKAN

- (i) Venork Power Station and Electrolysis Plant.
- (ii) Chemical Works.

PERIOD UNDER REVIEW

These photographs were taken after the daylight attack by aircraft of VIIIth U.S.D.C. on 16 November 1943.

PROVISIONAL STATEMENT ON DAMAGE(i) Venork Power Station and Electrolysis Plant

Owing to the poor quality of these photographs it is not possible to make more than a very conservative estimate of damage to the Power Station and adjacent Electrolysis Plant. Fairly heavy damage can be seen at the W. end of the Power Station and two smaller incidents have affected the central portion of the roof. There appears to be a second area of roof damage involving the North half of the Mechanical Workshop, and a direct hit may have been obtained on the lower reaches of the Penstocks. Damage to the Electrolysis Plant would seem to be more severe, the west central portion of its upper storey being partly destroyed, and the hydrogen gasholder severely damaged.

(3053)

(ii) Chemical Works

Here also precise assessment is impossible owing to some buildings being on fire and owing to the quality of the photographs where snow has been blasted away; but there is no doubt that the central part of the works has suffered considerable damage.

Details are as follows:

Mechanical workshops and forge:	S.E. corner destroyed and possible roof damage to whole.	(3043)
Carpenter's shop:	destroyed.	"
Locomotive shed:	probable damage	"
Rolling stock repair shop:	partly destroyed.	"
Rjukan railway station:	probable roof damage and damage to waggons.	"
" storage house:	damaged.	"
Absorption towers (not used any more):	on fire.	(3045)
Telephone exchange and electric workshop:	probably damaged.	"
Shop for packing nitrate of lime:	almost entirely gutted.	"
Absorption towers for nitrate fumes:	on fire.	"
Shop for dissolving of lime-stone in nitric acid:	" "	"
Shop for concentration of lime solution:	" "	"

Research Section
Command

13th Combat Wing

CONFIDENTIAL

Target: BJUKAN, NORWAY

Date: 16.11.43

A/C	Bomb Load
Tracking	Per A/C
20	5 x 1000
18	5 x 1000
18	5 x 1000

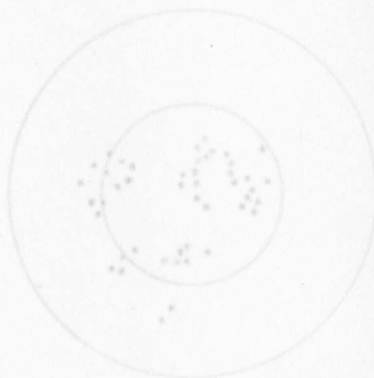
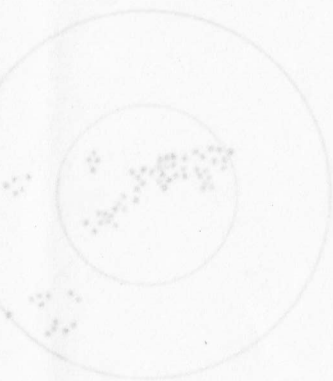
Total Bombs		% of Identified Bombs Within	
Dropped	Identified	1000' of A.P.	2000' of A.P.
100	76	69%	91%
90	46	51%	100%
90	-	-	-

Errors of Center of Pattern (Ft)		
Range	Deflection	Radial
0	0	0
0	0	0
-	-	-

100th

95th

190th



All identified bombs over 1 mile NE of target.

Track

Track
CONFIDENTIAL

DECLASSIFIED
Authority NND 745005
By LEG NARA Date 2-18-09

HEADQUARTERS
NINETY-FIFTH BOMBARDMENT GROUP (H)
OFFICE OF THE INTELLIGENCE OFFICER

16 November 19 43

SUBJECT : S-2 Report.

TO : Commanding Officer, 95th Bomb Gp (H), APO 634.

1. Today from 0658 until 0723 22 of our A/C were taking off on a bombing mission for Rjukan, Norway. Eighteen of our A/C bombed the primary target. The four A/C that failed to bomb the target were for reasons as follows:

A/C #7766 turned back at splasher number 4 because they couldn't find the group.

A/C #545 returned from splasher number 4 because the BT gunner had both hands frozen.

A/C #0218 turned back from 55 degrees 22 minutes North---02 degrees 24 minutes East because of carburetor icing in number 2 engine that caused that engine to fail.

A/C #1123 turned back from 55 degrees 22 minutes North---02 degrees 24 minutes East because they lost the group while going through a cloud.

2. Some flak, very meagre, was encountered at Ogne and Hellvg. It was accurate as to altitude, but this group made a turn just as it was coming up and thus avoided it. There were no E/A encountered.

3. First phase interpretation of the pictures would indicate that the target area was hit. Crews reported good results with some of the members saying they had seen many near misses.

FLORENCE J. DONOHUE
Major, AC
Group S-2 Officer.

HEADQUARTERS
NINETY FIFTH BOMBARDMENT GROUP (H)
Office of the Operations Officer

APO 634
16 November 1943

SUBJECT: Navigation Report of Operations of 16 November 1943.

TO : Commanding Officer, 95th Bombardment Group (H), APO 634.

1. The Ninety Fifth Bombardment Group (H), was flying as lead group in the Thirteenth Combat Wing formation.
2. It was impossible to follow the briefed course for rendezvous to Splasher # 4, because of cloud conditions. After the group had formed, an interception course was followed which cut the briefed course at 54 12N 00 57E at 0845 hours. The briefed route was then followed to the Norwegian Coast, where the landfall of the group was to the right of course. The briefed course was again crossed and paralleled to the Initial Point, where it was necessary to make a 360° turn because of prop wash of another group ahead. The bombs were dropped on the second run across the target, and visual reports showed good results. The briefed course was followed beyond the rally point, but it was necessary to turn to the right of the briefed course on the way to the enemy coast after the rally point because of sequence of groups on course. The briefed route was paralleled, on the course back, and landfall made on England at Hornsea. It was necessary for planes to land individually at home base because of low clouds and poor visibility.
3. The bombs were dropped at 1200 hours and the second bomb run on a magnetic heading of 40°. The altitude was 12,000 feet. The approach to the bomb run was from a newly-chosen I.P. to afford a better view of the target through smoke and clouds.
4. The "Gee" boxes worked very well on Eastern Wyoming, but only the lead plane was able to receive pulses on Northern Utah, due to tuning difficulties. Two radio compasses failed in flight; all other instruments functioned very well.
5. The difficulties encountered were caused by the weather and darkness at take-off time, which caused a delay in group assembly. Several

planes became separated from the group in the clouds, and joined the other groups for the raid.

ELLIS B. SCRIPTURE
Capt., Air Corps,
Group Navigation Officer.

1167 1881 5 8 42 E/36
16 5

LEGEND.

1. Combustion of Ammonia.
2. Manufacture of calcium nitrate.
3. Absorption towers.
4. Workshops and forge.
5. Carpenters' shop.
6. Locomotive Sheds.
7. Nitric acid concentration plant.
8. Compression house.
9. Storage house.
10. Railway station.



S. A. 661
CHEMICAL WORKS
RJUKAN, NORWAY
16.11.43

NEG. N° 32919.

APPROXIMATE BOMB PLOT

- Position of well defined bursts
 - //// Area of heavy concentration
- Photographic background 5.8.42 N/607 516

21809

745005

FIED

IFIED
745005
2-18-09



(C-63-GI-1-95)(16-II-43)(R) (JUKAN) (SECRET)

C O N F I D E N T I A LHEADQUARTERS
VIII BOMBER COMMAND
APO 634Bomber Command Narrative of Operations
131st Operation - 16 November, 1943.Mission No. 1 - Rjukan (Power Plant and Nitrate Works).

Mission No. 2 - Knaben (Molybdenum Mine).

Mission No. 3 - Rjukan (Power Plant).

Industrial and economic targets in Norway were attacked by 3 Combat Wings each of the 1st and 3rd Bombardment Divisions and 2 Combat Wings of the 2nd Bombardment Division. Weather over the targets was clear and bombing results were good, photographs showing hits on the important molybdenum mine in Knaben and the hydro-electric works and nitrate plant at Rjukan. Although there was no fighter escort, enemy fighter opposition was reported as weak. Claims against e/a are 4-0-4. 2 B-17s are missing.

Unit	Number of A/C					Claims	Personnel Casualties		
	(Participated)	Attacked	Failed		Lost		(Killed)	Wounded	Missing
<u>2ND BOMB DIV.</u>	<u>MISSION NO. 1</u>								
<u>RJUKAN</u>	<u>To Bomb*</u>								
			A.	B.					
93	14	10	1	3	0	0-0-0	0	0	0
389	4	4	0	0	0	0-0-0	0	0	0
44	3	2	1	0	0	0-0-0	0	0	0
392	18	13	2	3	0	0-0-0	0	0	0
	<u>39</u>	<u>29</u>	<u>4</u>	<u>6</u>	<u>0</u>	<u>0-0-0</u>	<u>0</u>	<u>0</u>	<u>0</u>

1ST BOMB DIV.
MISSION NO. 2
KNABEN

384	21	19	2	0	0	0-0-0	0	0	0
303	20	0	0	20	0	0-0-0	0	0	0
379	22	19	2	1	0	0-0-0	0	0	0
351	20	17	2	1	0	0-0-0	0	0	0
91	20	0	1	19	0	2-0-4	0	0	0
381	22	22	0	0	0	0-0-0	0	1	0
305	23	21	1	1	0	0-0-0	0	0	0
92	21	13	4	4	1	0-0-0	0	0	10
306	20	19	0	1	0	0-0-0	0	0	0
	<u>189</u>	<u>130</u>	<u>12</u>	<u>47</u>	<u>1</u>	<u>2-0-4</u>	<u>0</u>	<u>1</u>	<u>10</u>

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

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

Unit	Number of A/C					Claims	Personnel Casualties		
	(Participated)	Attacked	Failed		Lost		(Killed)	Wounded	Missing
			To Bomb*						
<u>MISSION NO. 3</u>			A.	B.					
<u>RJUKAN</u>									
385	20	19	0	1	0	0-0-0	0	0	0
94	20	19	1	0	0	0-0-0	0	0	0
388	19	17	1	1	0	2-0-0	0	0	0
96	40	36	2	2	0	0-0-0	0	0	0
95	20	18	1	1	0	0-0-0	0	0	0
100	21	20	0	1	0	0-0-0	0	0	0
390	20	18	0	2	1	0-0-0	0	0	10
	<u>160</u>	<u>147</u>	<u>5</u>	<u>8</u>	<u>1</u>	<u>2-0-0</u>	<u>0</u>	<u>0</u>	<u>10</u>
TOTAL	388	306	21	61	2	4-0-4	0	1	20

* Failed to Bomb - A - Mechanical and Equipment Failures.

B - Other than Mechanical and Equipment Failures (includes weather, enemy action, recall, etc.)

MISSION NO. 1 - RJUKAN (POWER PLANT AND NITRATE WORKS)

MISSION NO. 3 - RJUKAN (POWER PLANT)

Three Combat Wings of B-17s of 3rd Bombardment Division attacked their primary target at Rjukan. Two Combat Wings of 2nd Bombardment Division were unable to attack Oslo-Kjeller A/D, their primary target, due to 10/10 cloud, and consequently attacked Rjukan. The B-17s and 3 groups of B-24s attacked the hydro-electric works with good results, many hits being scored in the target area. 1 group of B-24s attacked the chemical works at Rjukan with very good results. There were direct hits on the absorption towers, the nitric acid concentration plant and other buildings. The B-17s reported few enemy fighter attacks, and B-24s reported no enemy attacks. Flak encountered on both missions was meager and inaccurate. Claims are 2-0-0. 1 B-17 is missing.

BOMBING RESULTS: 143 B-17s dropped 711 x 1000 G.P. 1/10 sec. nose, 1/10 sec. tail from 12,000 - 13,500 ft. at 1143 - 1145 hours, and 29 B-24s dropped 295 x 500 G.P., 1/10 sec. nose, 1/10 sec. tail, from 12,000 - 14,000 feet at 1204 - 1212 hours on Rjukan. 160 of these a/c bombed the Hydro-electric plant scoring at least 5 direct hits in the western portion of the water electrolysis house and 1 direct hit on the north wall of the power station. The other 12 of these a/c bombed the chemical works, and the majority of bursts seen were concentrated on and very near the target. Strike attack photographs show at least 1 direct hit in the nitric acid concentration plant and 2 direct hits on the absorption towers. The mechanical workshops and forge also received direct hits. There was a heavy concentration of bursts across the carpenters shop, locomotive sheds and rolling stock repair shop, with at least 2 direct hits on the Nitric fume pipelines and possible hits on the Rjukan storage house and railway station. Another concentration of bombs fell on the ammonia combustion plant, the compression house and another unidentified building. 4 B-17s dropped 20 x 1000 G.P. 1/10 sec. nose, 1/10 sec. tail on Knaben. (For results, see Mission No. 2)

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

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

REASONS FOR FAILURE TO BOMB: 23 a/c failed to bomb - 9 because of mechanical or equipment failures, 4 which could not find the formation, 7 due to adverse weather, 1 could not find the target, 1 to personnel failure, and 1 which was lost before reaching the target.

ENCOUNTERS: Enemy opposition was practically nil. Approximately 15 - 20 FW 190s and Me 109s were seen. Only a few scattered attacks were made and none were pressed home. There were no unusual tactics observed. Some crews report that the pilots encountered appeared to be very inexperienced.

CASUALTIES: Personnel - 10 crew members are missing.
Equipment - 1 B-17 was lost for reasons unknown.
Estimated Battle Damage - 3 category "A".

ANTI-AIRCRAFT FIRE: Meager inaccurate AA fire was encountered at scattered points to and from the target. Ineffective automatic weapons fire was reported over the target area. Moderate inaccurate AA fire reported at Larvik, Lister, and from flak ships.

ROUTE: Mission No. 1 - Bases to 54°17'N - 03°20'E to 54°28'N - 03°35'E to 58°10'N - 08°40'E to 59°20'N - 10°50'E to 59°22'N - 09°30'E to 59°56'N - 08°54'E to target to 58°25'N - 05°55'E to Bases.

Mission No. 3 - Bases to 54°21'N - 01°22'E to Eigeron Island to 59°43'N - 08°01'E to target to 59°48'N - 08°42'E to Flekkefjord to Great Yarmouth to Bases.

OBSERVATIONS: Power plants protected by barrage balloons were observed in the Mos Lake area at 59°49'N - 08°19'E, and at 59°43'N - 08 10'E. Other barrage balloons were observed at 59°50'N - 08°22'E and at 59°10'N - 07°50'E. An ineffective smoke screen was observed over the target.

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WEATHER

Route out: 8/10 to 10/10 stratocumulus, base 800 to 1200 feet, tops 5,000 to 7,000 feet, occasional cumulus tops 10,000 to 12,000 feet. Over North Sea cloud broke, 7/10 to 9/10 towering cumulus and altocumulus tops 14,000 to 16,000 feet, occasional tops to 20,000 feet. From 56°N. cloud tops lowered and cloud amounts decreased to 4/10 to 6/10 cumulus and stratocumulus with tops 8,000 to 10,000 feet on Norwegian Coast. Cloud amounts decreased inland over Norway.
Target: 1/10 to 3/10 cumulus and stratocumulus. Persistent contrails were formed at 12,000 feet forming thin 6/10 to 8/10 coverage over the target. Visibility 10 to 30 miles. Return Route: Similar to route out except tops of cumulus decreasing to 10,000 to 12,000 feet.

MISSION NO. 2 - KNABEN (MOLYBDENUM MINE)

Three Combat Wings of B-17s of the 1st Bombardment Division attacked the Knaben Molybdenum Mine. Strike attack and PRU photographs show good results. Enemy fighter opposition was nil to weak, and flak was meager to moderate and inaccurate. Claims against e/a are 2-0-4. One B-17 is missing.

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

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

BOMBING RESULTS: 128 B-17s dropped 1252 x 500 G.P. 1/10 sec. nose, 1/40 sec. tail from 12,500 - 15,000 feet at 1133 - 1238 hours on the Molybdenum Mine at Knaben. The weight of the attack fell solidly within the target area, the heaviest concentration of bursts being on the northwest side. The principal building of the plant escaped heavy concentration, only 1 direct hit being seen on it, but numerous subsidiary buildings were destroyed. Evidence of bombing results was obtained from strike attack photographs, and also from PRU photographs which were taken $\frac{1}{2}$ hour after the last bombers had left the target. 2 B-17s dropped 24 x 500 G.P. 1/10 sec. nose, 1/40 sec. tail on the Hydro-electric plant at Rjukan (For results, see Missions 1 and 3.)

REASONS FOR FAILURE TO BOMB: 59 a/c failed to bomb - 12 because of mechanical or equipment failure, 44 which could not locate the target, 1 due to personnel failure, 1 which did not see "bombs away" from lead ship, and 1 which could not find its formation.

ENCOUNTERS: E/a encountered varied in number from none to 15. Types seen were Me 109s, FW 190s, Me 110s and Me 210s. Attacks began at 58°35'N - 06°45'E at 1128 hours and continued sporadically until 1300 hours off the enemy coast on the way back. Attacks were weak and none were pressed home.

CASUALTIES: Personnel - 1 crew member was slightly wounded and 10 are missing.
Equipment - 1 B-17 was lost for reasons unknown.
Estimated Battle Damage - 8 category "A", 1 category "AC".

ANTI-AIRCRAFT FIRE: Flak was meager and inaccurate both enroute and at target. One group reported no flak at all and another group reported that the only AA fire encountered was from flak ships near Lista.

ROUTE: Bases to Louth to 53°40'N - 01°10'E to 58°05'N - 06°40'E to 58°45'N - 07°00'E (IP) to target (Knaben) to 58°15'N to 06°30'E to Louth to bases.

OBSERVATIONS: None.

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WEATHER

Route out: 1/10 to 3/10 stratocumulus becoming 5/10 to 7/10 cumulus at English coast tops 12,000 to 15,000 feet. 7/10 to 9/10 swelling cumulus tops 17,000 to 20,000 feet over North Sea decreasing to 4/10 to 6/10 cumulus tops 10,000 to 12,000 feet at Norwegian coast, further decreasing to 2/10 to 4/10 stratocumulus and cumulus base 2500 feet tops 5,000 to 6,000 feet inland. Target: 2/10 to 4/10 stratocumulus and cumulus base 2500 feet tops 5,000 to 6,000 feet. 2/10 to 4/10 cirrus above 20,000 feet. Visibility 10 to 20 miles. Return Route: Similar to route out except cumulus tops extending to 13,000 to 15,000 feet with isolated tops to 16,000 to 18,000 feet over the North Sea.

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

F O R M 3

DATE 16 November 1943

STATION 119

	LET	SHIP	PILOT	TARGET	TIME OFF		LANDING		REMARKS
					EST	ACT	EST	ACT	
336	L	0226	Robinson		0658		1620		
412	Q	1054	Wehrman		0704		1619		
412	O	0634	Rogers		0659		1536		
412	N	3465	Caspers		0700		1711	Landed at Bassingbourne	
412	R	9869	Woodcock		0701		1624		
412	P	0322	Brown		0702		1608		
336	M	0244	Thompson		0706		1557		
336	D	3400	Yuenger		0706		1553		
336	C	0674	Smith		0707		1510		
336	B	3462	Kerr		0708		1553		
336	J	5918	Hearn		0710		1551		
336	A	3153	Conley		0712		1603		
334	H	6039	Witt		0713		1712	Landed at Bassingbourne	
334	F	7766	Hargrove		0714		0950	"2 Super Charger -- Landed at Snetterton Heath Horham	
334	E	0182	Infield		0715		1554		

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 By 16 NARA Date 2-18-09

DATE 16 November 1943

FORM 3

STATION 119

	LET SHIP	PILOT	TARGET	TIME OFF		LANDING		REMARKS
				EST	ACT	EST	ACT	
334	J 1123	Snow		0727		1048		Lost Formation
335	R 6098	Scott		0716		1600		
335	W 0218	Tucker		0717		1047		Lost Formation
334	B 0342	Cerson		0719		1521		
335	T 1063	Powers		0720		1620		
335	V 3263	Wallace		0722		1549		
334	A 3545**	Rongstad		0723		1003		Extra Ship

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** Extra Ship