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5 FEB 94.

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UNPROFOR

05 FEB 1994

PAGE 1 OF 3

ROUTINE/PRIORITY/IMMEDIATE/MOST IMMEDIATE
UNCLASSIFIED/RESTRICTED/CONFIDENTIAL/CRYPTO/ONLY

OUTGOING FAX N° :	DATE :
TO : BH MAIN CMD KISELJAK	FROM : SECTOR HQ SARAJEVO
FAX N° :	FAX :
ATTN : G3 OPS	DRAFTER : MAJ BRUNOT
	TITLE : PLANS OFFICER
	RELEASE OFF : COL SONNIE CHIEF OF STAFF
	SIGNATURE :
FO INTERNAL : SC - DSC1 - COS - SMIO - SOO - CAPT VERDY	
INFO EXTERNAL :	
SUBJECT : UN SHELLING REPORT 05FEB94	

MESSAGE

A/ UNIT : CAPT VERDY (ANALYST)

B/ DATE/TIME OF SHELLING : 051210 FEB 94

C/ LOCATION (GRID AND UN FACILITIES) : 34T BP 92900-59650 (MARKET NEAR CATHEDRAL)
MAP 1/15000 CITY MAP

D/ TYPE - CALIBRE - AND NUMBER OF ROUNDS : 1 SHELL MORTAR 120 MM

E/ PRESUMED ORIGINE OF FIRE : ANGLE OF DESCENT : 1400 MILS
ANGLE OF APPROACH : FROM 800 TO 1000 MILS
MAXIMUM RANGE : 2000 TO 3500 ~~METERS~~ **METERS**

F/ NUMBER AND DESCRIPTION OF CASUALTIES : ACCORDING TO MEDICAL SOURCES AT 1800 HRS :
- 52 PEOPLE KILLED
- 119 PEOPLE WOUNDED

G/ DESCRIPTION OF DAMAGE : THE MORTAR SHELL IMPACTED ON THE WOOD OF A STALL (0.90 M FROM THE GROUND) SO THAT THE ANALYSIS WAS VERY DIFFICULT.

H/ ACTION TAKEN : UNPROFOR HAS PARTICIPATED TO THE EVACUATION OF 9 WOUNDED PEOPLE

I/ RECOMMENDATIONS : - THE RANGE IS SHORT. LOW ANGLE FIRE
- THE SHELLING IS EXTREMELY POINTED AND PREPARED

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05 FEB. 94

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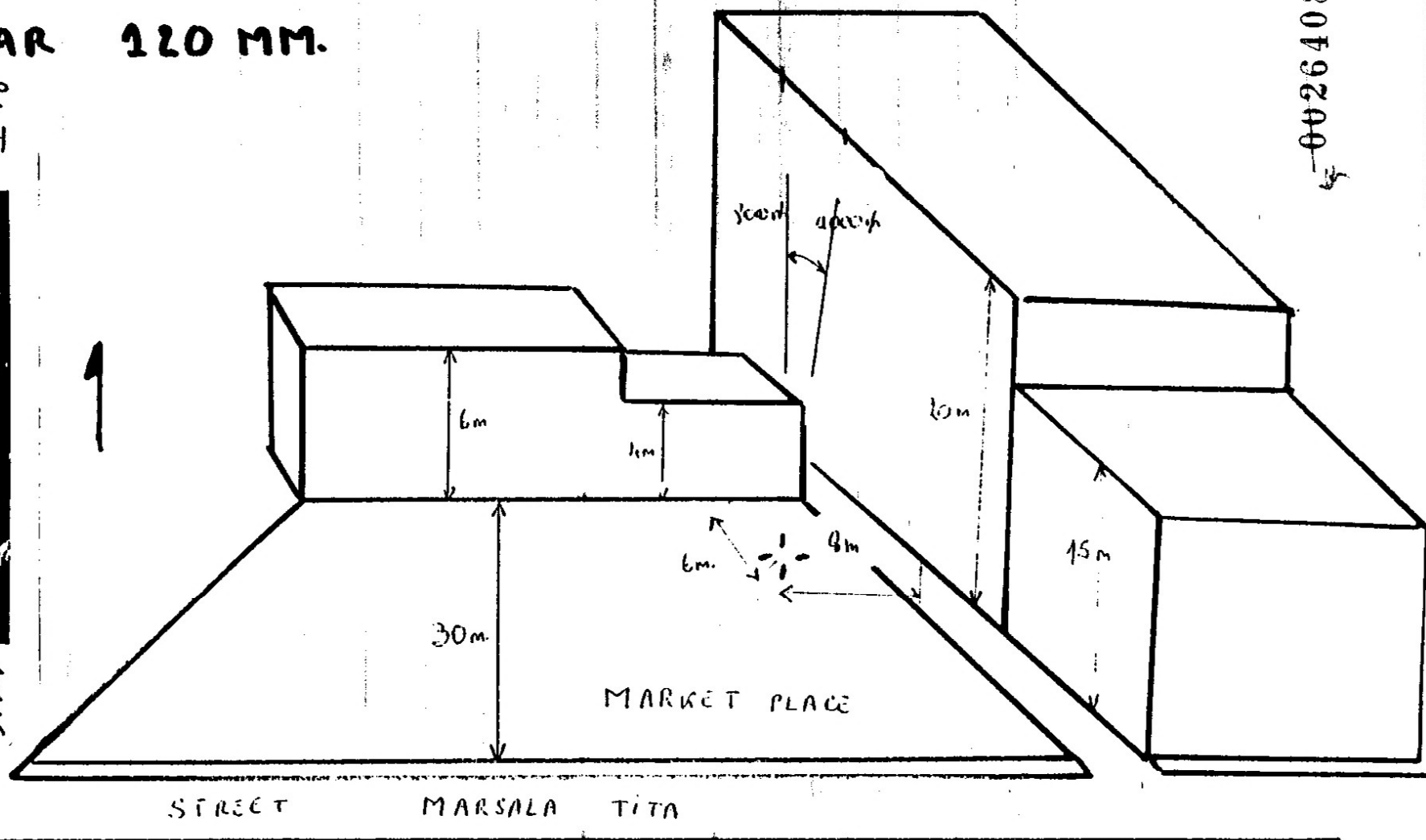
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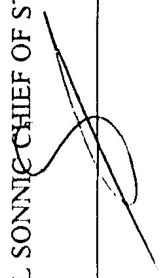
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PAGE 1 OF 3

**ROUTINE/PRIORITY/IMMEDIATE/MOST IMMEDIATE
UNCLASSIFIED/RESTRICTED/CONFIDENTIAL/CRYPTO/ONLY**

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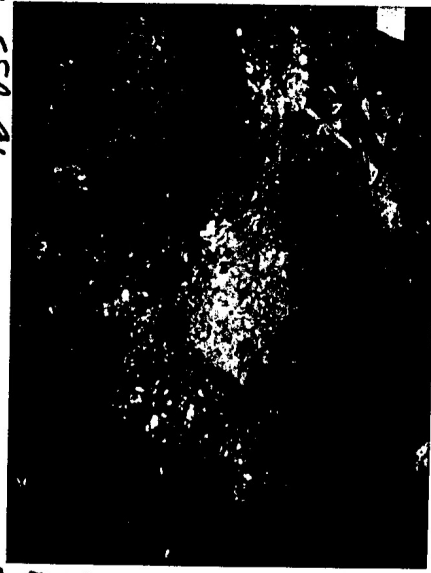
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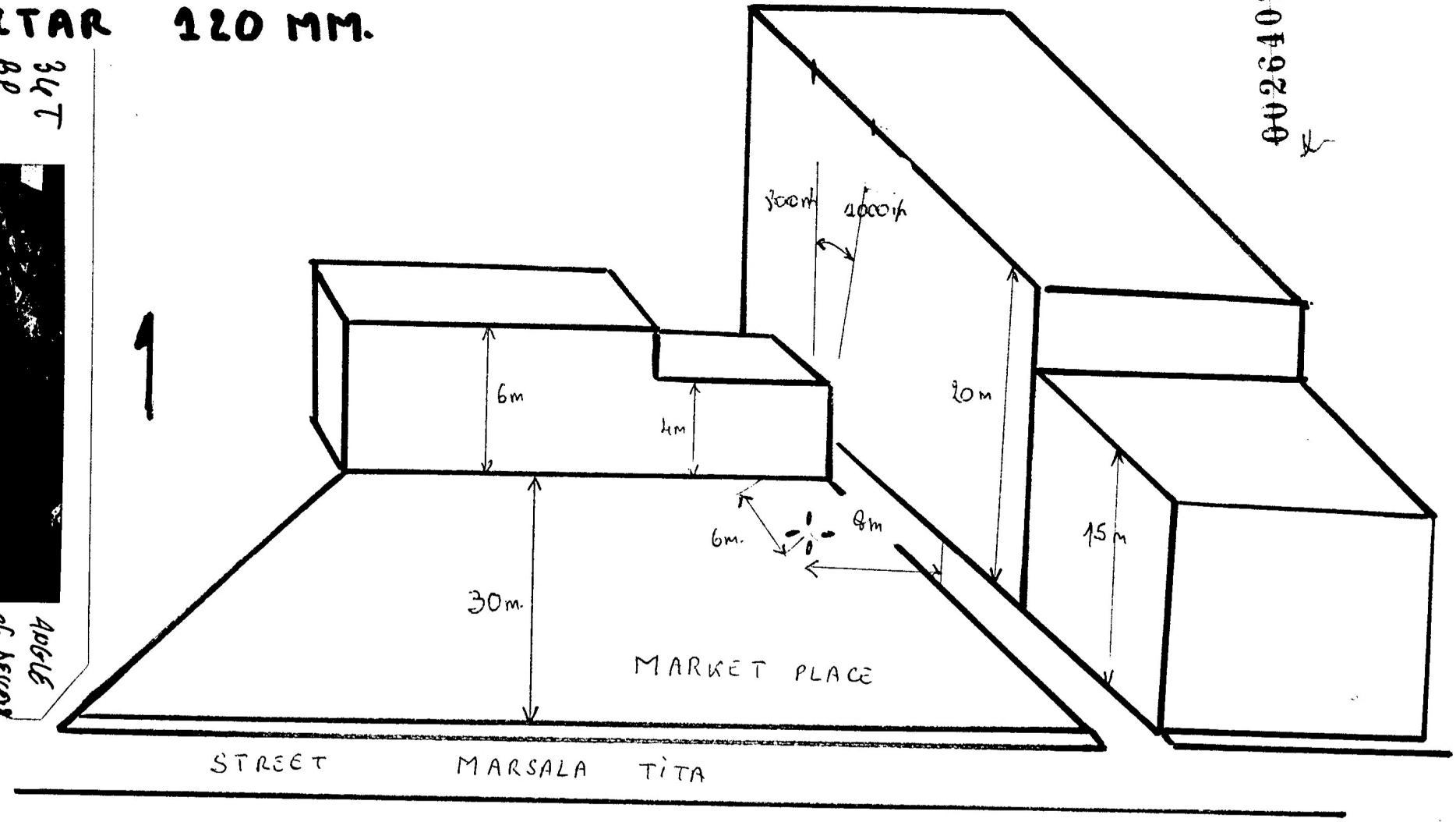
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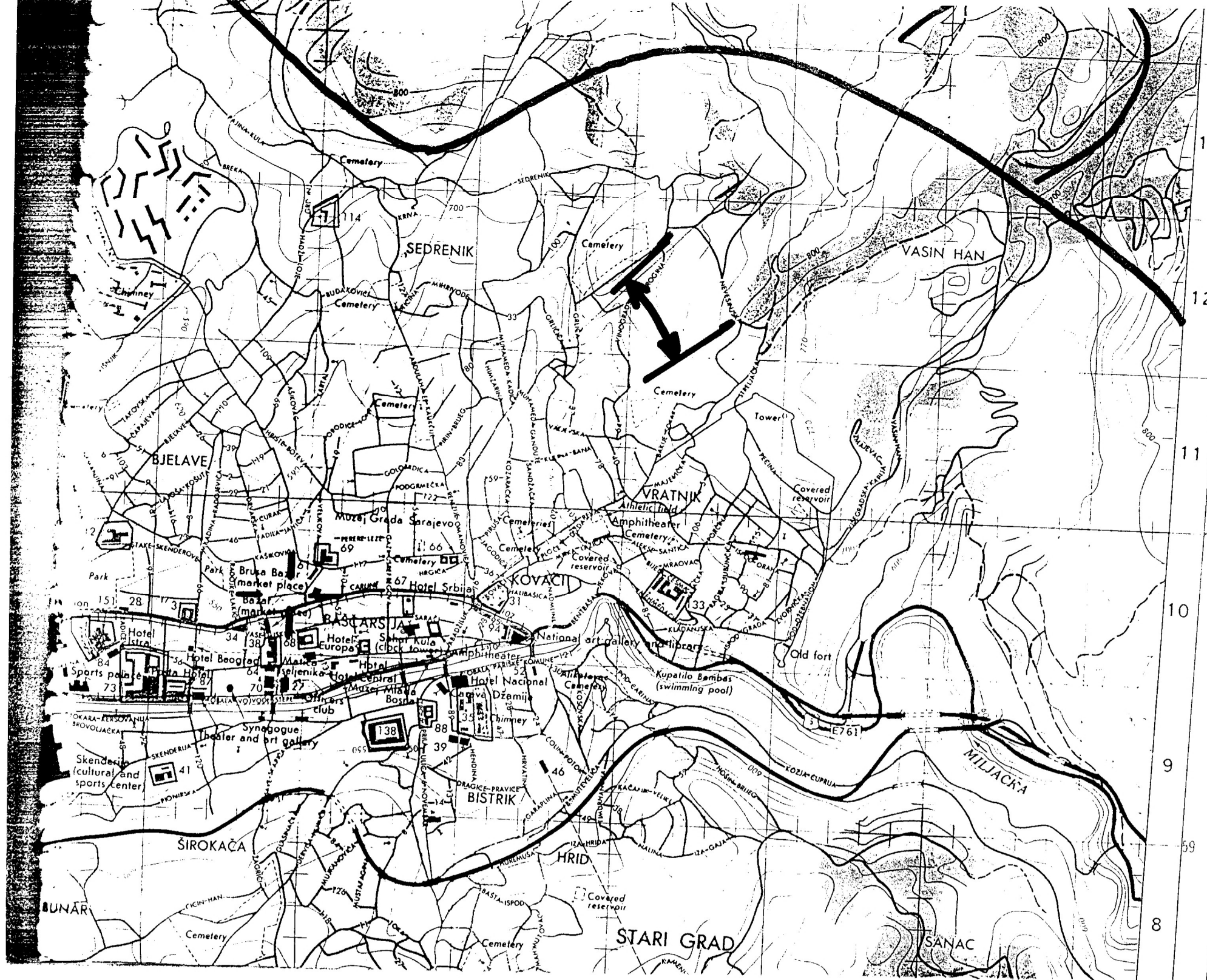
05/20 FEB 94



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from 800
to 1000 m



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ANNEXE 02 / 1572

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FORCE COMMANDER'S OFFICE

FAX : 19.365.41.176.707

FROM : LCL EGNELL
HQ UNPROFOR ZAGREB

TO : GENERAL SOUBIROU
COMMANDANT LE SECTEUR SARAJEVO

INFO : /

ROUTINE / URGENT / IMMEDIAT / FLASH

NON PROTEGE / DIFFUSION RESTREINTE / CONFIDENTIEL DEFENSE / SD

N° 1/94/FC/SP

DATE : 21 02 94

OBJET : Explosion sur le marché de Sarajevo le 05 février 1994

Suite à communication téléphonique de ce jour veuillez trouver le document demandé.

SIGNATURE REDACTEUR :

LCL EGNELL
tel : 180 025
LCL EGNELL
tel : 180 026

SECRETARIAL :

NUMERO DE MESSAGE ET NUMERO DE PAGE

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UNPROFOR INVESTIGATION REPORT
SARAJEVO MARKET EXPLOSION OF 5 FEBRUARY 1994

15 February 1994

Reference: Terms of Reference dated 11 February 1994

GUIDANCE

1. By the Terms of Reference issued on 11 February 1994, Deputy Force Commander UNPROFOR ordered a follow-on investigation into the explosion that occurred at the Sarajevo Market (GR BP 929596) on 05 February 1994.
2. **Scope.** The referenced guidance directed that the investigation be complementary to earlier investigations conducted by the UN, and that it be confined to the crater analysis and related technical aspects of the explosion. The report was to include all relevant physical information concerning the explosion, a technical assessment, and any relevant findings with respect to culpability.
3. **Composition.** The composition of the Investigation Team is shown at Annex A.
4. **Liaison.** Liaison Officers from the parties were to be permitted to maintain contact with the investigation team, but not to participate in the investigation. Information released at the discretion of the Team Leader was to be released identically to both sides, whereupon such information would be considered in the public domain.

PROCEEDINGS

5. Team members arrived in Sarajevo on 10 February, and were joined by the Team Leader and EOD Advisor on 11 February. Team Members conducted an initial visit and crater analyses at the Market on the morning of 11 February. The remainder of the day was spent gathering evidence, examining various reports produced immediately following the incident, identifying witnesses, and compiling lists of questions for various categories of witnesses.
6. All members of the team returned to the Market on 12 February to analyze and collect all available physical evidence from the scene of the explosion. During the period 12 - 13 February, a total of 13 witnesses were called before the team. Interviews were also conducted with military formations from both the Military Commission to collect details of the local military situation.
7. The Team Leader, and other members as available, met with the designated representatives of the parties on 13 February. The investigation process was described to both parties, as well as the nature of any physical evidence to be used by the Team.

arriving at its findings. The representatives were informed that no information relating either to the Team's analysis or its findings would be revealed until after the Investigation Report had been approved by the convening authority. Both sides were offered the opportunity to hand over any physical evidence or technical information relevant to the investigation. The records of these meetings are at Annexes F and G.

ANALYSIS


8. **Technical Analysis.** The Team, aided by its two technical advisors, conducted a detailed technical analysis based on the physical evidence in the Market and surrounding area, the crater analyses conducted on 5 February, and technical information arising from the questioning of general witnesses. In addition to the technical assessments conducted by competent members of the Team on the site, personnel involved in the 5 Feb crater analyses were questioned, and their methods scrutinized closely. It was the Team's assessment that the two crater analyses conducted in the hours following the investigation were procedurally flawed, and that certain details of the associated findings were therefore suspect. The team's complete technical analysis and associated findings with respect to the precise location, nature and cause of the explosion, and the approximate direction of delivery are at Annex C.

9. **General Analysis.** Questioning of witnesses who were near the Market at the time of the explosion, or arrived on the scene within minutes after the explosion, allowed the Team to make findings concerning the time of explosion, and the general nature and extent of casualties. The question of casualties was only pursued to the extent that it might corroborate the technical findings regarding the nature of the explosion and hence the type of weapon used. An exhaustive investigation of the specific nature and types of casualties, with the necessary supporting data, was judged to lie well beyond the Team's mandate, and was not pursued. The relevant information recorded from the questioning of some 10 general witnesses is summarized at Annex D.

10. **Military Analysis.** Military Information Officers and UNMOs were questioned to confirm the location of the confrontation line in the area of interest to the Team as well as any known weapon positions which could be linked to the explosion. Records of shots reported on this same date were also examined. Theoretically, with a fully accurate crater analysis, this military information could then be correlated with the estimated direction, angle of fire, and range to draw reasonably specific conclusions. In practical terms, no such correlation was possible. UNMOs have been denied freedom of movement by the BSA in the North-East quadrant of the Sarajevo area since last October, and the information concerning BiH positions in this area, provided by the BiH, is inconclusive. Furthermore, the data resulting from the various crater analyses does not pinpoint a specific location or locations on the map which could be inspected visually. Rather, it points to an area of roughly two and one half square kilometers which includes the total area of the Market and its immediate surroundings, including physical evidence resulting from a mortar fired from such a location on the date and at the time in question. With hardly a dozen shots during the past several days, were the source identified that any such evidence has long since vanished, it was impossible for the Team to make any correlation between the generally unhelpful evidence and the location of any uncollected analysis. The results of the military analysis are summarized at Annex E.

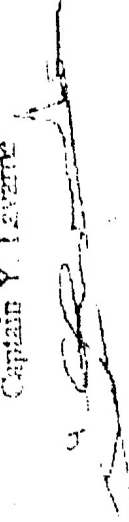
FINDINGS

11. Time and Location of the Explosion. Based on witness testimony, it can be concluded that the explosion occurred between 1210 and 1215 hours on 5 February 1994 into an exceptionally crowded Sarajevo Market (GR BP 929 596) (See Site Plan Appendix 1 to Annex D, and Site Sketch Appendix to Annex C)
12. Nature of the Explosion. The explosion was caused by a conventional factory-produced 120mm high explosive mortar bomb. The mortar bomb detonated upon impact with the ground.
13. Cause of the Explosion. The bomb appears to have been launched in the conventional manner from a 120mm heavy mortar tube.
14. Direction of Origin of Fire. The Team estimates that the direction of fire was between 330 to 420 mils UTM from the point of detonation.
15. Distance of Origin of Fire. Based on the condition of the crater at the time of analysis by the team, it was not possible to estimate with any acceptable degree of accuracy the angle of descent. Therefore the possible distance of origin of fire, based on published weapon data, is between 300 and 5,551 metres from the point of detonation.
16. Casualties. Independent inquiries by Sarajevo UNMOs and the Sector Sarajevo Medical Liaison Officer have confirmed the total number of casualties as being consistent, in order of magnitude, with the officially reported statistics, ie, between 250 and 275 dead and wounded. It is the Team's assessment that, with a single 120 mm mortar bomb, projected into an exceptionally dense crowd, surrounded by metal-framed stalls, together with the chaotic evacuation process that followed, casualties of this order of magnitude are conceivable.
17. Culpability. The distance of origin of fire clearly overlaps each side of the confrontation line by 2,000 metres. Both parties are known to have 120 mm mortars and the bombs to go along with them. The Team has no reason to believe that either party does not have access to the type of ammunition reported in paragraph 12. There is insufficient physical evidence to prove that one party or the other fired the mortar bomb. The mortar bomb in question could have been fired by either side.




Col M. Gauthier, Team Leader

Major S. Khan



Captain Y. Levente



Lt-Col M. Rumyantsev

Captain J. Auzanov

LIST OF ANNEXES

- Annex A - Composition of the Investigation Team
- B - List of Witnesses
- C - Technical Analysis
- D - Summary of Testimony - General Witnesses
- E - Military Analysis
- F - Record of Meeting - Bosnian Government Representative
- G - Record of Meetings - Bosnian Serb Representative

COMPOSITION OF INVESTIGATION TEAM

TEAM LEADER

COL M GAUTHIER (CAN), MILITARY ENGINEER, FORCE ENGINEER,
UNPROFOR HQ.

TEAM MEMBERS

LT COL N RUMYANTSEV (RUS), INFANTRY CORPS, UNMO HQ, MIO.

M&J S KHAN (PAK), ARTILLERY CORPS, INSTRUCTOR IN GUNNERY, UNMO.

CAPT J GRANDE (SPA), ARTILLERY CORPS, UNMO.

CAPT Y LAVARDE (FRA), MARINES CORPS, SPECIALITY ARTILLERY, HQ COY
COMD, SECTOR SARAJEVO.

TECHNICAL ADVISERS

COMDT J HAMILL (IRE), UNMO DCCO, INSTRUCTOR IN GUNNERY.

SGT CHEF E DURANT (FRA), EOD TEAM, FORCE ENGINEER'S OFFICE,
UNPROFOR HQ.

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LIST OF WITNESSES1. UNPROFOR PERSONNELA. TECHNICAL WITNESSES

1. 1ST LT J DUFUY (FRA), UN ID AC 29067
DEPUTY COMD, HQ BTY, FREBAT 4
2. SGT MAJ J C CAZAUX (FRA), UN ID AC 29156
ASSISTANT MIO, FREBAT 4
3. CAPT J VERDY (FRA), UN ID AB 25250
CAMP COMDT

B. GENERAL WITNESSES

1. CAPT J J ADHUY (FRA), UN ID AC 25229 LO TO 1ST BIH CORPS
2. CWO P LIEUNARD (FRA), UN ID AC 25045 SEC COS OFFICER,
SECTOR SARAJEVO
3. 2/LT J STEEVES (CAN), UN ID AB 55292 CAMBAT 2 LO
4. MAJ AFZAAL NIAZ (PAK), UN ID 130461 UNMO, PAPA SIDE
5. COL G SONNIC (FRA), UN ID 25159 COS SECTOR SARAJEVO
6. CAPT J L SEGADE (FRA), UN ID AC 29153, MIO FREBAT 4
7. SGT CHEF P BOUQUET (FRA), UN ID AC 25013 HQ COY,
SECTOR SARAJEVO
8. MAJ J RUSSELL (CAN), UN ID 130252 MA DRSRG
9. COL A PARDON (FRA), UN ID AC 25086 DCOS SECTOR SARAJEVO
10. COL F AMBROSI (FRA), UN ID AC 25218 SMEDLO

2. LOCAL LIAISON OFFICERS DESIGNATED BY PROPER AUTHORITIESA. BOSNIAN SIDE

1. MR M JAMAKOVIC, MEMBER OF THE BIA BIAH INVESTIGATION TEAM
- B. CERP SIDE
1. COL R CVETKOVIC, ASSTY REGT COMD, BSA ROMANTIJA CORPS

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3. MethodologyPrebat 4 Team Crater Analysis

This was the first crater analysis after the explosion. The Prebat 4 team used a method which was unconventional, in that the two members individually stood over the center of the crater and by looking at the ground, and the shrapnel scrape pattern thereon, estimated the center of the direction from which the round might have come. They then took a compass bearing along this estimated line, and noted this as their result. Comment: To obtain an alignment, it is essential to fix two points along a line, and shoot the bearing based on these two points. The accuracy of the method used by this team is therefore suspect. The Prebat 4 team did not attempt to measure the angle of descent. A copy of their analysis report is at Appendix 1.

Second Analysis - Capt Verdy (see Report at Appendix 2)a. Bearing

Capt Verdy used a more conventional method; he began by marking the lines formed by the wings of the fragment scrape, and measured the angles formed by these lines. Based on these measurements, he then calculated the backbearing from the crater to the weapon. However, based on his notes, he appears to have made a mathematical error which led to an incorrect final backbearing. Therefore, though his method may have been sound, based on the figures he used his results were flawed.

b. Angle of Descent

Capt Verdy reported an "angle of descent" of 1400 mils. When questioned by the team, he stated that, since the crater had been disturbed by the previous team, he did not attempt to measure the angle of descent; instead, he estimated the vertical angle from the crater to the top of an adjacent building along the calculated bearing, and used this figure as the minimum possible angle of fire. Since the bearing used was flawed, this presumed angle of descent must also be flawed.

c. Range

The minimum range given in his report, based on the estimated angle of descent, was derived from tables tabular for a given position since mortar bombs and artillery shells follow very different trajectories, such extrapolation is undoubtedly erroneous. The reported range of between 2000 and 7,000 meters is without basis.

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Other Analyses

The results obtained by the other eight analyses were based on three different conventional methods of crater analysis. These results, along with the original two, are summarized in the following table. Individual analysis reports from three team members are at Appendices 3 - 6.

Table of Results

	Bearing to weapon	Angle of Descent
Frebat 4 05 Feb	0620 MILS	Not measured
Capt Verdy 05 Feb	0800 - 1000 MILS	>1400 MILS
Maj Russell 05 Feb	0450 MILS	1200 - 1300 MILS
Maj Khan 11 Feb	0360 MILS	1000 - 1100 MILS
Comdt Hamill 11 Feb	0360 MILS	950 - 1100 MILS
Capt Grande 11 Feb	0320 MILS	Not measured
Maj Khan 12 Feb	0360 MILS	Not measured
Comdt Hamill 12 Feb	0330 - 0360 MILS	Not measured
Capt Grande 12 Feb	0420 MILS	Not measured
Sgt Dubant 13 Feb	0420 MILS	Not measured

4. Analysis and FindingsLocation

The location of the explosion was in the market square at Markale, on Ulica Marsala Tita, Sarajevo BP 929596. The crater was located near the north-east corner of the market place. See various sketches enclosed with the EOD Report at Appendix 6.

Crater

The Frebat 4 Crater Analysis team has confirmed that the crater resulting from the explosion appeared to be fully intact and fresh when they arrived on the scene. It did not appear to have been tampered with. There was a continuous UN presence on the scene, with two very brief exceptions, from the arrival of Capt Audhuy five minutes after the explosion (see Annex D), until the Frebat 4 team arrived. In entering the team fin assembly from the crater, the Frebat 4 team (unavoidably) disturbed the integrity of the crater for any measurements. The scrapes however, other elements were not affected. The scrapes attached allowed for an accurate measurement of the bearing. In addition, the original sketches enclosed

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tunnel could not have changed, thus allowing the fuse tunnel method of bearing estimation to be employed. Sketches of the crater are enclosed with Appendix 6.

Weapon

a. Tail Fin Assembly

The Prebat 4 Team found and excavated a mortar tail fin from the crater. It was confirmed by measurement to be a 120 mm mortar bomb tail fin. The tail fin was buried approx 8 cm below the surface of the asphalt. This is consistent with the bomb having followed a normal trajectory. This tail fin had a serial number on the primary charge recorded by the team as HB8701 NK3M74. This tail fin was confiscated by local police after examination by the analysts. It was later recovered from BH Government authorities by the Investigation Team, and, on 13 Feb, shown to members of the Prebat 4 team who confirmed, based on the number and the appearance, that it appeared to be the same tail fin recovered by them on 5 Feb. The assembly was inspected closely by Sgt Chef Dubant, an EOD specialist. He concluded that it was the tail fin assembly from a 120mm mortar round, and based on the workmanship, that it was produced in a conventional ammunition factory. He noted that the cartridge of the primary charge had been struck, showing that the bomb appears to have been fired in the normal manner from a mortar tube.

b. Height of Burst

The shape of the "butterfly" formed by the scrapes on the asphalt is also consistent with a ground explosion of a mortar bomb following a standard high angle trajectory. The shape of the crater is also consistent with the normal impact of a mortar bomb, with the front edge being undercut, and the fragment "splash" lying predominantly in the direction of the origin of fire. The damage caused to metal-framed stalls in the immediate vicinity of the crater indicates clearly that the bomb burst on the ground. The damage to the stalls was in an upward direction with the stall legs, made of tubular steel, being splintered in an upward and outward direction, black powder being found on the underside of the table nearest the crater, and table tops being splintered in an upward direction also. It is inconceivable that the tables which were examined in the vicinity of the crater could have been in any other position than that in which the Team found them. The damage caused can only be satisfactorily explained by a ground burst. It was noted by the Team that the crater and surrounding damage were caused as a result of the detonation of the mortar bomb upon impact with the asphalt surface. The initial burst was

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surface of the asphalt and allowed the tail fin to follow into the ground in the normal way. The POD expert also confirmed that this crater could not have been caused by any device other than a mortar bomb.

thus, the crater was clearly caused by a 120 mm high explosive mortar bomb which exploded at ground level at the site of the crater. See POD Expert report at Appendix 6.

Bearing

The method used by the Prebat 4 team on 5 Feb was inherently inaccurate. The method used by Capt Verdy on 5 Feb, owing to mathematical error, produced results totally at variance with all other results. There was a great degree of consistency in the estimated bearing derived in each of the last eight crater analyses.

The bearing from the crater to the origin of fire, based on eight independent crater analyses, is estimated to be between 0330 and 0420 mils Grid UTR.

Angle of Descent

a. Estimate

On 11 Feb, during their first visit to the site, the team's analysts measured the angle of descent at between 950 and 1100 mils. Based on official Yugoslav firing tables, obtained from both the Bosnian Government and Bosnian Serb representatives, the estimated angle of descent can be related to an estimate range. With a bracket between 950 and 1100 mils, the corresponding ranges lie between 950m at charge 1, and 5450m at charge 6, based on official firing tables for a M49p1 (representative) 120mm mortar bomb (see Appendix 2).

b. Measurement

By the time the team conducted its analyses, six days had elapsed since the explosion. It is reasonable to suspect that the crater was thoroughly excavated by the local authorities during that period. Hence the angles measured on 11 Feb are not beyond suspicion. To assure accuracy, the angle must be measured when the tail fin and fuse are in the ground, and this was not done on 5 Feb. Accordingly it is assessed that the results measured on 11 Feb are not sufficiently accurate to be used as a basis for a finding.

c. Range Calculation

Mortars can be fired on a choice of six charges yielding six different ranges.

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elevation. Hence, even when the angle of descent can be measured accurately by crater analysis, it is impossible to estimate a single pinpoint distance to the origin of fire. For even the most accurate crater analysis, there will always be at least six possible ranges to the point of origin.

d. Site Restrictions

The market place was surrounded by buildings and it was assumed that the restrictions imposed by the height of these buildings in relation to the crater location might provide some evidence concerning the angle of descent. The angle to the highest building in the estimated direction of flight was calculated based on the measured distance to the building and the height of the building (see sketch accompanying Appx 6). The associated angle was 870 mils which in the firing tables possible mortar bomb trajectories in the range to the used by the team. Hence, the possible range to the point of origin of fire, based on the full spectrum of trajectories in the firing tables, lies between 300 and 5551 m from the point of impact.

5. Conclusions

- a. The explosion in the market square on 05 Feb 94 was caused by a conventional factory-produced 120mm high explosive mortar bomb which exploded at ground level.
- b. The bomb was almost certainly fired from a 120mm mortar in the conventional manner.
- c. The bomb impacted having approached at a bearing of between 0330 and 0420 mils UTM.
- d. It is not possible to determine the exact range from the firing point to the target with mortars. The range lies in the region of 300 m to 5551 m, which is the published data for the M49P1.

LIST OF APPENDICES

1. Crater Analysis Report - Pochat 4 team
2. Crater Analysis Report - Capt Verdy
3. Crater Analysis Report - Maj Smith
4. Crater Analysis Report - Comdt Hamill
5. Crater Analysis Report - Capt Stenham
6. 500 Trajectory Diagram - Sgt Chef Dubant
7. Firing Tables for M49P1 120mm Mortar Bomb

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Appendix 2. TO Annex C

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OUTGOING FAX NO.	DATE
TO : BH MAIN CMD KUSELJAK	FROM : SECTOR HQ SARAJEVO
FAX NO.	FAX
ATTN : GS OPS	DRAFTER : MAJ BRUNCI PLANS OFFICER
	TITLE : RELEASE OFF : COL SONNIG CHIEF OF STAFF
	SIGNATURE
INFO INTERNAL : SC - DSCI - COS - SMIO - SOO - CAPT VERDY	
INFO EXTERNAL	
SUBJECT : GUN SHELLING REPORT AFEB 94	

MESSAGE

A/ UNIT : CAPT VERDY (ANALYST)
 B/ DATE/TIME OF SHELLING : 161210 FEB 94
 C/ LOCATION (GRID AND UN FACILITIES) : 34T BP 92900-89650 (MARKET NEAR CATHEDRAL)
 MAP 1/15000 CITY MAP
 D/ TYPE - CALIBRE - AND NUMBER OF ROUNDS : 1 SHELL MORTAR 120 MM
 1400 MILLS
 FROM 800 TO 1000 MILLS
 2000 TO 3500 METERS #61544
 E/ PRESUMED ORIGINE OF FIRE : ANGLE OF DESCENT
 ANGLE OF APPROACH
 MAXIMUM RANGE
 ACCORDING TO MEDICAL SOURCES AT 1800 HRS :
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 ANALYSIS WAS VERY DIFFICULT.
 H/ ACTION TAKEN : THE REPORT WAS PARTICIPATED TO THE EVACUATION OF
 9 WOUNDED PEOPLE
 I/ COMMENTS/REMARKS : THE RANGE IS SHORT, LOW ANGLE FIRE
 THE SHELLS WERE COMPLETELY POINTED AND PREPARED

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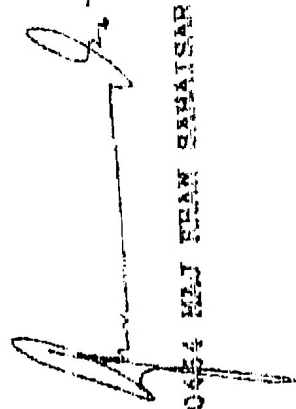
Appendix 3
TO annex C

STATEMENT OF NAME: SARAJEVO MIAN, RANK: MAJOR,
NATIONALITY: PAKISTAN, EMPLOYMENT: UNMO, ID NO: 130464
MEMBER UNITED NATIONS COMMISSION DETAILLED TO INVESTIGATE/ANALYZE
MORTAR BOMB BLAST IN MARKET SQUARE SARAJEVO ON 05 FEBRUARY 1994.

- 1.- I am performing my duties as UNMO in KNIN Sector South since 03 October 1993.
- 2.- On 10 February 1994, I was detailed as a member of the United Nations Commission headed by COL. GAUTHIER (CANADA) to investigate/analyze the mortar bomb blast incident in Market Square of SARAJEVO resulting into serious loss of human lives.
- 3.- I visited the place of incident with other members of the commission at 0920 hrs and 0815 hrs on 11 and 12 February respectively.
- 4.- After having seen the crater itself, conduct a crater analysis, examination of all possible witnesses and taking into consideration concrete and available evidences, I have drawn following conclusions:
 - a. Results of crater analysis
 - (1) Grid Bearing to Likely Firing Position = 360 mils (Approximately)
 - (2) Approximate angle of descent = 1000 - 1100 mils.
 - b. The crater analysis has been conducted seven days after the occurrence of the incident. This crater formed by the bomb has been tempered time and again by various personnel. The exact fuze tunnel or the place where nose of the fins was buried cannot be ascertained at this stage. Therefore, it is not possible to work out accurately the angle of descent and thus the range bracket to the mortar position. However, an approximate angle of descent has been worked out from the approximate location of the fins in the crater. In view of this, the direction to the firing position can be fairly accurate and the angle of descent measured should only be taken as a guide line.
 - c. From the shape of the crater, it is clearly evident that it has been formed by the explosion of a mortar bomb. Size of the crater in the asphalt surface and the number of casualties clearly reveal that this crater has been formed by a bomb of heavy calibre most probably 120 millimeter.

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- d. Availability of the tail fins which were examined by the members of the commission and confirmed by the analysis team ex FREKAT 4 clearly reveal that a high explosive 120 millimeter bomb exploded at the scene of explosion.
- e. Definite shape of the crater, spray of the fragments and place of hitting of splinters to the dead and wounded clearly reveals that the type of burst was a ground burst.
- f. As per the statements of the SNEPLO COL AMEROSI ID NO AC 25218 and UNMO MAJ AFZAAL ID NO 130461, number of dead and wounded as a result of this explosion and released by the Bosnian Government corresponds to the number of dead and wounded physically checked by above mentioned members of UNPROFOR. Therefore the total number of casualties is likely to be correct.
- g. As per the statement of UNMO MAJ Afzaal ID NUMBER:130461 who is performing his duties in the area of incident since last four months, this particular area has been a lucrative target continuously and it has been shelled/bombed for approximately ten to twelve times during the last three months approximately. Although the market square having very small dimensions did not receive any bomb/shell directly and the bombs/shells kept landing in the very close vicinity (few meters away) from the market. Therefore the possibility of this area shelled/bombed at this time from the position from where it was bombed previously cannot be ruled out.
- h. As per the statement of UNMO, two crater Analysis were conducted by a UNMO MAJ SALEH ex JORDAN in the same vicinity during the last three months. It is recommended that the results of these crater analysis maybe consulted and compared with the crater analysis of present incident to reach to some conclusion.
- i. The Commission so set up for such purposes should have an easy access to the opposing sides to gather definite information/evidences and draw solid conclusions.



(130461 MAJ FRYAN SAHAISAR)

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Appendix 4 to
Annex C

TO : INQUIRY TEAM
FROM : COMDT J HAMILL
DTG : 120945A FEB 94
SUBJECT : CRATER ANALYSIS SARAJEVO

1. I analyzed a crater I found at the north east corner of the market place in Sarajevo, Gr 929596 on two separate occasions 11 and 12 Feb 94. The results are as follows.
2. Location
Market place, Sarajevo. BP 929596. 5m from the nearest small building to the north of the crater.
3. Type of analysis
Fuse tunnel method on 11 Feb and two poles aligned on centre of splash pattern on 12 Feb.
4. Type of Round
Mortar. Known by splinter groove pattern. Ground of slightly below ground detonation. The damage to the surrounding stalls was such as to indicate that the burst occurred at or below ground level. I do not accept that the round could have detonated at an altitude of 1 metre. The crater was a classic mortar crater with the front edge undercut and the back edge grooved by splinters. The size of the crater is such that it was probably caused by a 120mm bomb. Insufficient fragments were found to be more authoritative.
5. Bearing.
The round came in at an approx angle of between 0330 and 0360 mils grid (0270 - 0300 magnetic). The angle was measured with a tested prismatic compass and varied by up to 30 mils depending on the distance behind the crater. The market was full of stalls which had steel frames. This probably accounts for the slight anomaly. The bearing was the same on both occasions within 10 mils.
6. Angle of Descent.
The angle of descent was probably between 0950 and 1100 mils. It is not possible to be more accurate due to the fact that several days elapsed between the impact and the analysis. Further the crater was disturbed between the first and second analyses, making the measurement impossible on the second occasion. The angle was measured using a standard artillery protractor, a plumb line and a length of steel tube.
7. Other Information
The mortar bomb was fired in the normal manner. It is not possible to state where the round was fired from, as it could have been fired at any one of a number of different charges, giving a different range. It is certain that it was not launched from a building nearby.

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Appendix 5
To Annex C

CRATER ANALYSIS REPORT

NAME: CRATER, MOOR
 GRADE: CROVAIN
 BRANCH: ARMY ARTILLERY
 NATIONALITY: SPANISH
 UN ID NO: 130357
 EMPLOYMENT: DMMO (SECTOR SOUTH)
 DATE: 13 1800 FEB 94

On the 10th February 1994 I was instructed by the CMO to take part in a investigation team about the explosion in the market place in SARAJEVO ON THE 25th OF FEBRUARY.

I visited the site in the morning in the morning of the day and at 08.30 and when on the 12th, at 08.15 hrs.

After observing the physical evidence in the area I can state:

The probable trajectory of the mortar shell in the crater crater seems to be the mortar craters surrounding by the crater which crater caused by the explosion of a mortar grenade or an artillery shell that has followed a trajectory with high angle of descent (2000 mls).

RESULTS OF THE CRATER ANALYSIS

MORTAR 120 MLS
420 mls
800-5000 M

- 1.- TYPE OF WEAPON:
- 2.- GRID BEARING TO THE FIRING POSITION:
- 3.- POSSIBLE RANGES:

2.- The crater itself and the damage to the shells around the crater (the trajectory of the splinters was upwards) indicated that the explosion happened at ground level.

3.- EXPLANATION OF THE RESULTS:

3.- BEARING : studying the pattern of the crater I estimated that the bearing to the point of fire was about 355 mls (true north). 420 mls (true grid north). Estimated accuracy +/- 100 mls.

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This bearing was obtained with a compass aligned at a line of reference marked by two poles situated respectively in the crater and in the estimated center of the butterfly shaped splash pattern.

b.- TYPE OF GRENADE 120 MM MORTAR. Based on the size of the crater and on the evidences found by the analyst team of frebat 4 on the 05 feb.

c.- POSSIBLE RANGE :

The estimation of the range based upon the study of a crater analysis of a mortar round cannot be accurate in any case. The only information that can be obtained from the crater is the angle of descent, and from this datum (with the firing tables of the mortar) we will obtain a minimum range for each of the six possible angles that can be used with this kind of weapon.

When I arrived to the site 15 days after the incident) the crater had been excavated and slightly enlarged as we were informed by the previous analyst teams. Therefore I consider myself unable to give an estimation of the angle of descent.

The dead angle to the minimum in the situation of the estimated bearing is about 800 mils. Therefore any trajectory of a mortar grenade is possible and the only possible estimation of range is in my personal opinion the gap between the minimum and the maximum range of this kind of weapon.

(130357 CAPT. GRANDE)

-00264111-

Staff sergeant Dubant
Force Engineers
EOD Team

Re.: Examination of the crater at Sarajevo market

First of all, we noted that the day we were at the market, around 8:40 hours on 12 FEBRUARY 1994, the square had been cleaned and a great deal of the evidence and fragments had, therefore, been removed.

I went on to examine the crater and the lateral spray (sketch 1, nos. 1 and 2) brought about by the impact and the detonation of the projectile. I could see that the lateral spray /as printed/ which was clean and sharp had been produced by direct impact on the ground. We were able to rule out the possibility that the mortar shell had hit one of the market stalls before hitting the ground. Three points led me to this conclusion:

- 1) the base of that stall (sketch 1, no. 3) was the most damaged base of all the stalls in the market.
- 2) the stall, on the axis running in the opposite direction to the crater, was definitely the one there when the mortar shell exploded. We can very clearly make out the black traces left on the legs and on the underside of the table of the stall.
- 3) the table of that stall is the one most punctured with fragments. Moreover, even if we tried to place the stall elsewhere in the market place, we would not be able to explain the broken corner of the table and, above all, the impacts resulting from the fragmentation would no longer correspond to the logical trajectory of the fragments (sketch no. 2).

The crater is clean and very sharply defined. It is somewhat similar to a slightly deformed circle. The longest part measures /illegible/cm and the narrowest part /illegible/cm and it is /illegible/cm deep (sketch 3). The first layer is asphalt and below that is a mix of soil

and pebbles. By scraping the crater we found the hole made by the missile known as the "detonator tunnel". The angle at which the projectile was falling at the moment of impact can be found by placing a stake in the hole and following the angle at which the missile entered. However this action became impossible since the hole had been changed and, more particularly, redug in order to extract the empennage. I therefore went on to look for the direction from which the mortar shell had come. I went about this in a different way to the other teams to allow for a better crosscheck of the different directions found. I looked for two opposite and distinct traces and I linked them with a line (sketch 4) and checked that the centre of this line was at the level of the crater. From one of the two extremities I drew two arcs, one in front and one behind the crater. I repeated the operation using the other fixed point. This gave me three points on the ground, the two intersections of the arcs and the centre of the crater. I drew a line through these three points which then gave me the most accurate direction (see sketch). All that was left to do then was measure an azimuth with a compass, which would be the direction the fire had come from. The azimuth was 355 thousandths (sketch 1, no. 4 and sketch 4).

It is difficult to establish the calibre of the ammunition without a large enough fragment or without the empennage. When we had the empennage it was easy to say that it was a 120mm mortar shell, but previously it has been difficult to confirm this since the fragments which we had were not sufficiently large and we did not have enough of them. It was difficult to say where the ammunition was produced since there were no traces of paint. In an effort to establish with the highest degree of certainty the origin of the mortar shell, I collected two 120mm empennages which had fallen on Sarajevo airport, one green and one without paint. I was able to tell that both the shape and the thickness of the fins was identical. The soldered joints were also similar. The tail of the empennage was also similar as were the holes which allowed the cartridge flame to reach the additional loads. Thus it seems to me that the shell was industrially produced.

Finally, I can rule out the possibility of a booby trap since we would have found a quite different sort of crater and, more particularly, a crater without lateral spray. Moreover I think it would also be difficult to disguise any blast in a 120mm mortar blast.

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Therefore without being able to indicate the exact point of departure or know the angle at which it fell, I conclude that it was a shot from a 120mm mortar shell, industrially produced, without paint, coming from a direction of 355 thousandths.

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APPENDIX 6.

TO ANNEK C 21/43

SERGENT-CHEF DUBANT

FORCE ENGINEERS

EOD TEAM

OBJET : Analyse de cratère du marché SARAJEVO

Dans un premier temps, on peut signaler que le jour de notre présence sur le marché le 12 FEVRIER 1994 vers 8 heure 40 la place avait été nettoyé et donc une grande partie des indices et éclats de fragmentations ont été enlevés.

J'ai ensuite procédé à l'observation du cratère et de la gerbe latérale (croquis 1 / n° 1 et 2) causé par l'impact et la détonation du projectile . J'ai pu constater que cette gerbe latérale a été produite par un impact direct au sol , celle-ci étant propre et nette . Nous pouvons écarter la possibilité que l'obus de mortier ait tapé un des étals du marché avant d'avoir tapé le sol. Trois points m'amène à cette conclusion

- 1) les pieds de cet étal (croquis 1 / n°3), sont les pieds les plus touchés de tous les étals du marché .
- 2) Cet étal, dans l'axe opposé au cratère, est bien celui qui se trouvait à l'ors de l'explosion de l'obus de mortier . On peut distinguer très nettement les traces noires laissés par l'explosion sur les montants et sous le plateau de l'étal .
- 3) Le plateau de cet étal , est le plateau le plus criblé par les éclats de fragmentation . Et de plus même si l'on essayait de placer cet étal ailleurs sur la place du marché , on ne pourrait pas expliquer alors , le bris du coin de la table , et surtout les impacts de fragmentation ne correspondraient plus avec la trajectoire logique des éclats (croquis 2)

Le cratère est propre et très net . Il ressemble un peu à un cercle légèrement déformé . Il mesure dans sa partie la plus large 50 cm et 20 cm dans la partie la plus étroite . Pour une profondeur de 11 cm (croquis 3) . La première couche est de l'asphalte et en dessous on trouve du toulévant ,

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melange de terre et de cailloux . En grattant le cratère , l'on découvre le trou causé par la fusée appelé " tunnel de détonateur " et en y insérant un piquet en suivant l'angle d'entrée de la fusée , cela donne un angle de descente d'impact . Dans ce cas cette action est devenue impossible car le trou a été modifié et surtout recréusé pour en extraire l'empennage . j'ai donc procédé à la recherche de la direction de la provenance de l'obus de mortier . Pour cela j'ai procédé d'une manière différente de-a autres afin de permettre un meilleur recouplement des différentes directions trouvées . j'ai donc cherché deux traces opposés disjoints et je les ai reliées par un trait (croquis 4) et vérifier que le milieu de cette ligne était à la hauteur du cratère . En maintenant une des extrémité j'ai tracé 2 arcs de cercle , un devant et un derrière le cratère . j'ai renouvelé cette opération en inversant le point fixe . cette action m'a donné trois points sur le sol , les deux intersections d'arcs de cercle , et le centre du cratère . En traçant une ligne passant par ces trois points cela me donne une direction avec un minimum d'erreur (voir croquis) . il ne me reste plus qu'à prendre a l'aide d'une boussole un azimut , qui sera celui de l'origine du coup . L'azimut est de 355 millièmes (croquis 1 / n°4 et croquis 4) .

Concernant le calibre de la munition , il est difficile de déterminer celui-ci si l'on ne possède pas d'éclat suffisamment gros ou si l'on n'a pas l'empennage . Lorsque l'on a été en possession de l'empennage il a été facile de dire qu'il s'agissait d'un obus de mortier de 120 mm , mais auparavant il était difficile de l'affirmer car les éclats en notre possession n'étaient pas assez gros et nombreux . quant à définir l'origine de la fabrication de la munition cela semble délicat car il n'y a pas de trace de peinture . Pour essayer de déterminer avec un maximum de certitude l'origine de l'obus de mortier j'ai récupéré deux empennages de 120 mm , tombés sur l'aéroport de SARAJEVO , dont un est de couleur verte et l'autre sans peinture . j'ai pu vérifier que la forme des ailettes étaient identiques ainsi que l'épaisseur de ces ailettes . les soudures sont également similaires . la queue de l'empennage est également semblable ainsi que les orifices permettant la transmission de la flamme de la cartouche aux charges additionnelles . il apparaît donc pour moi que cet obus est un obus de fabrication industrielle

En conclusion je peux éliminer l'hypothèse d'un colis piégé car on aurait retrouvé un cratère tout autre et surtout sans gerbe latérale . il me semblerait également difficile d'avoir maquiller une explosion quelconque en une explosion de mortier de 120 mm . je conclus donc à un tir de mortier de 120 mm explosif de fabrication industrielle , sans peinture , provenant d'une direction de 355 millièmes , sans pouvoir donner son point exacte de départ , ne connaissant pas son angle de chute .

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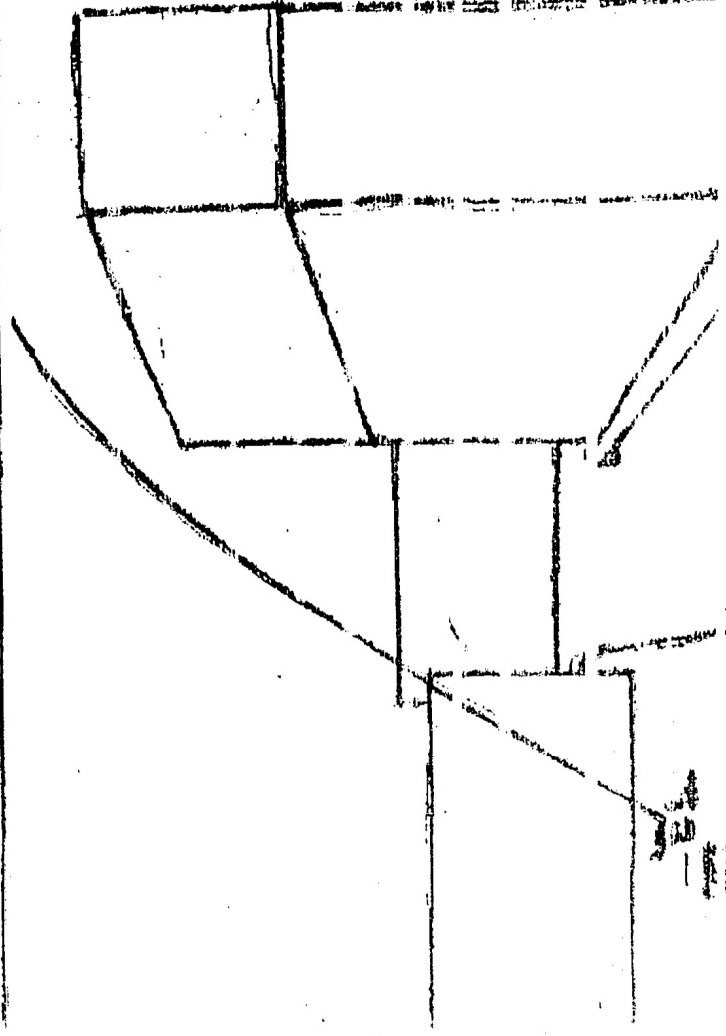
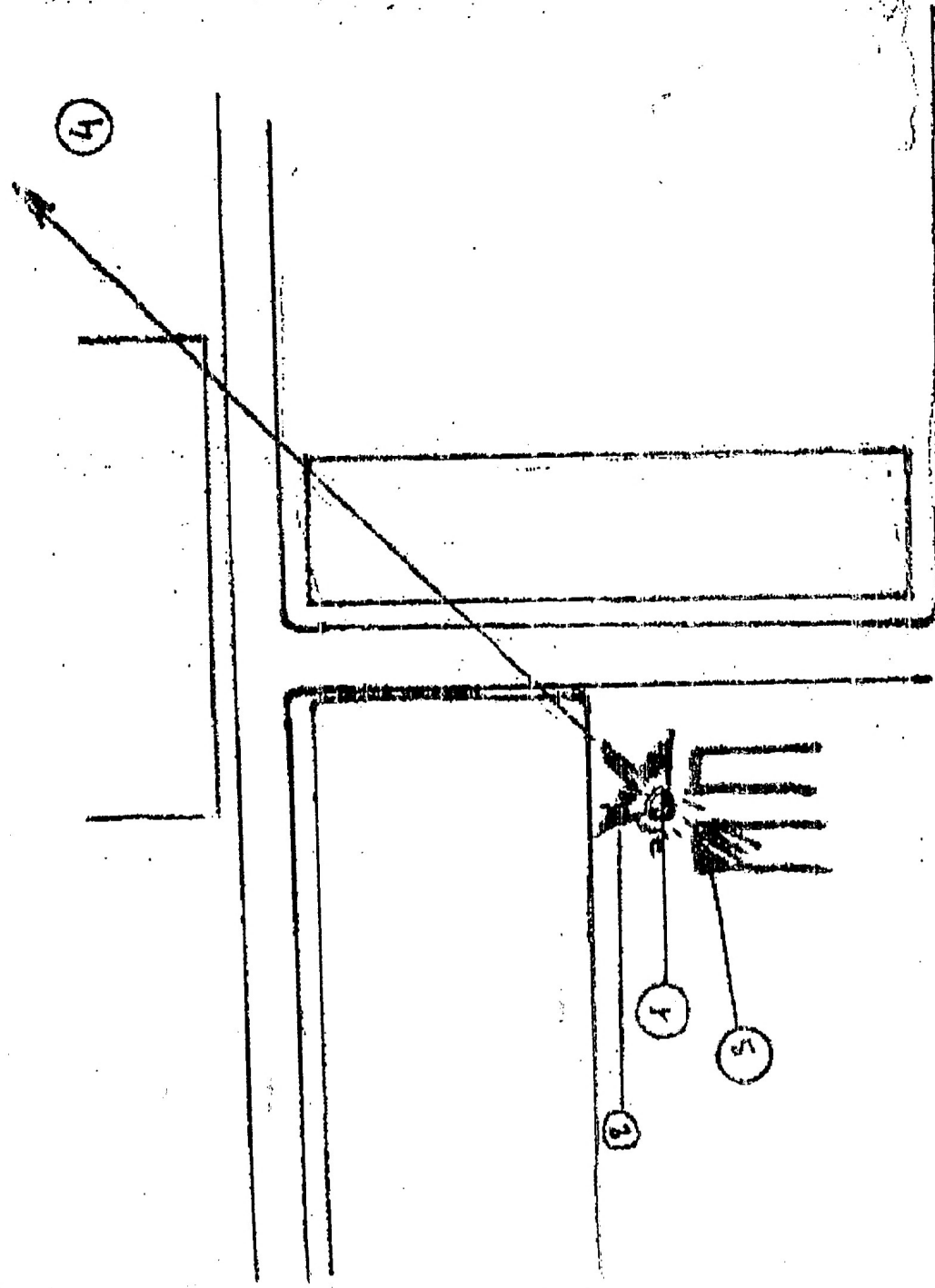
APPENDIX 6-1

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CARQUIS 1



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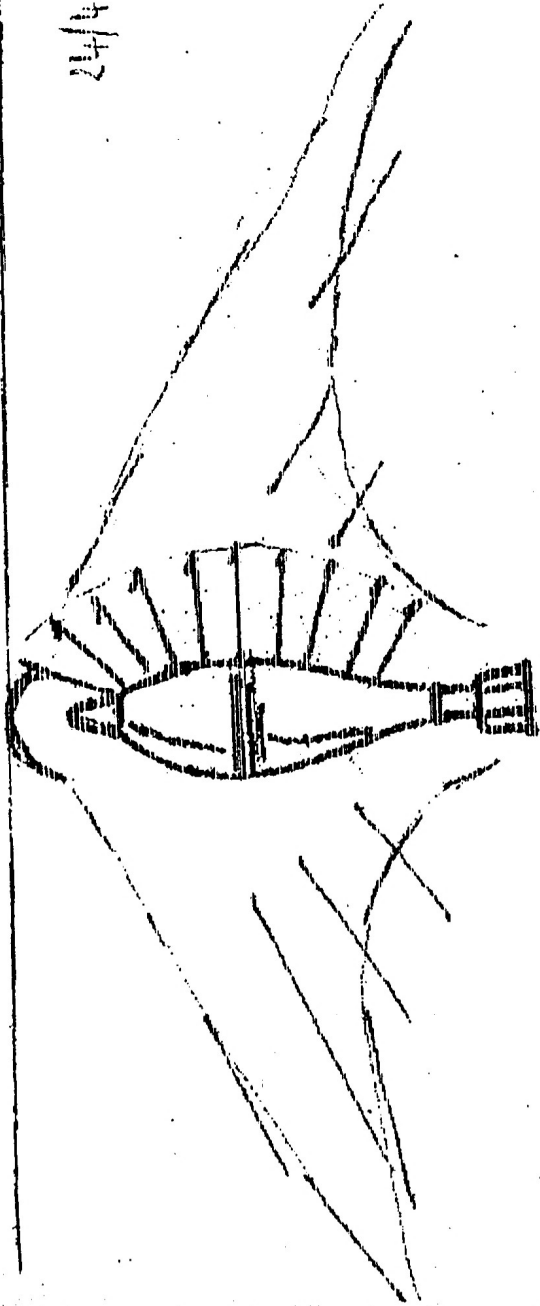
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ANNEXE 6-4

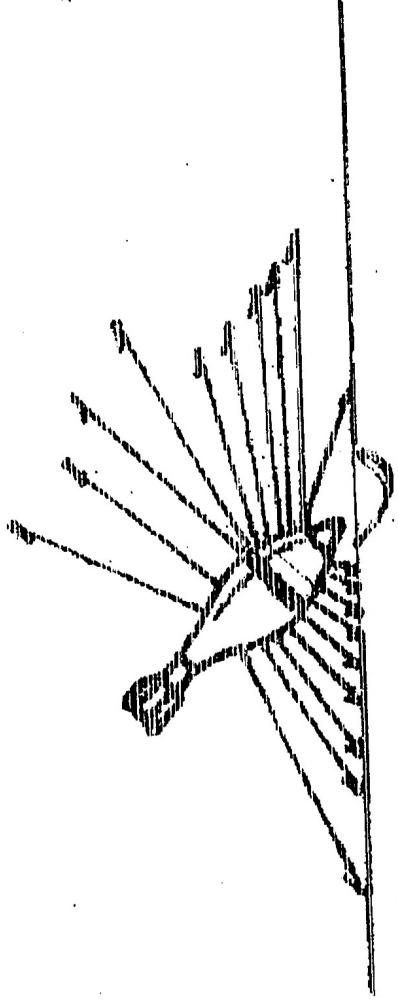
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VUE 2/3

GROQUIS 2

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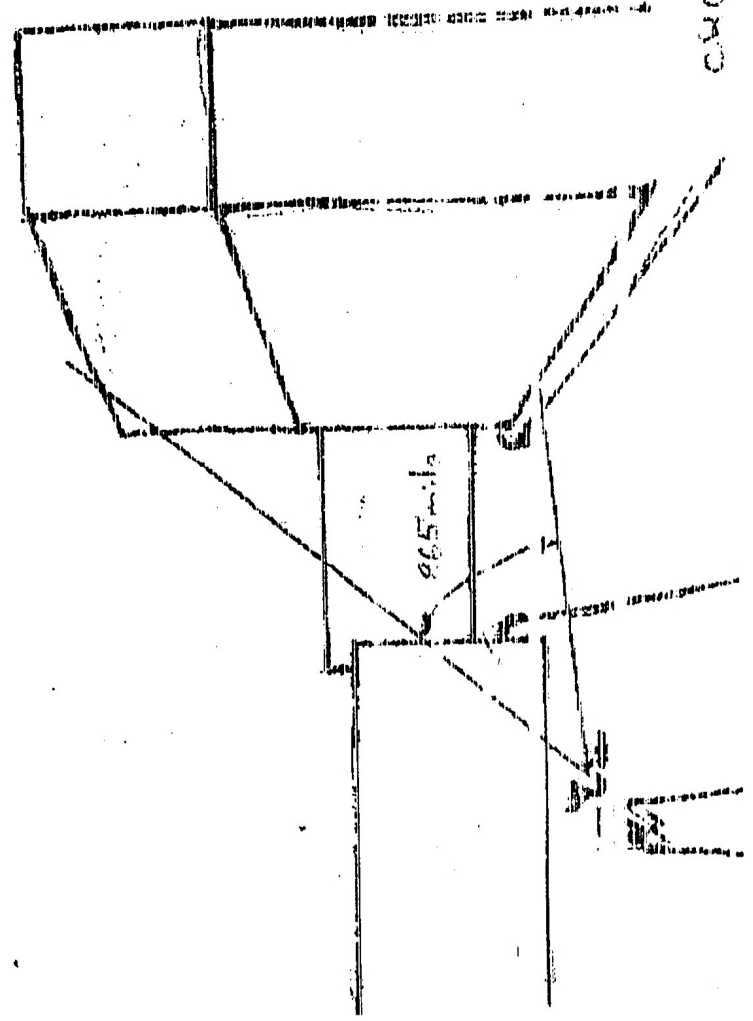
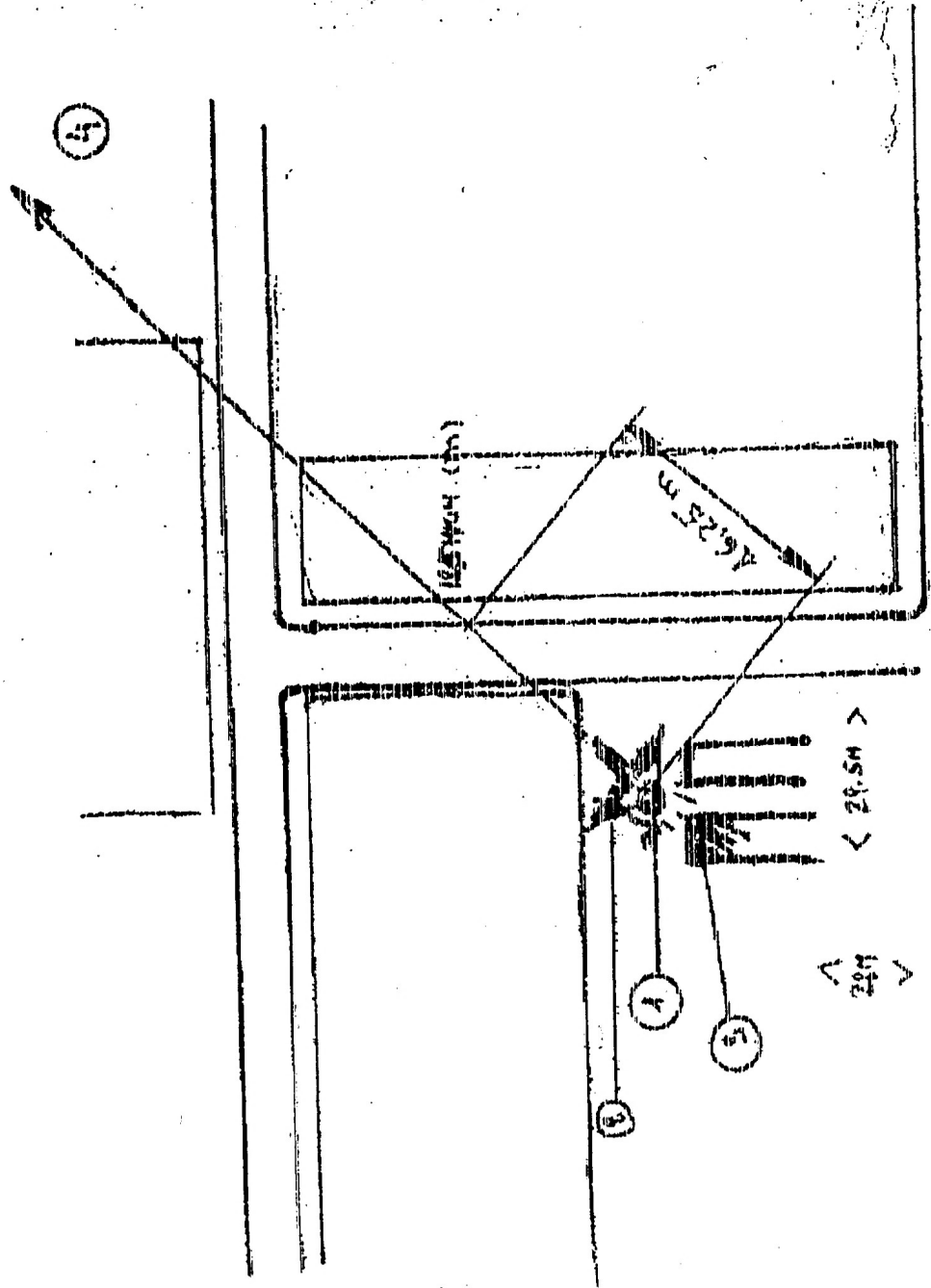
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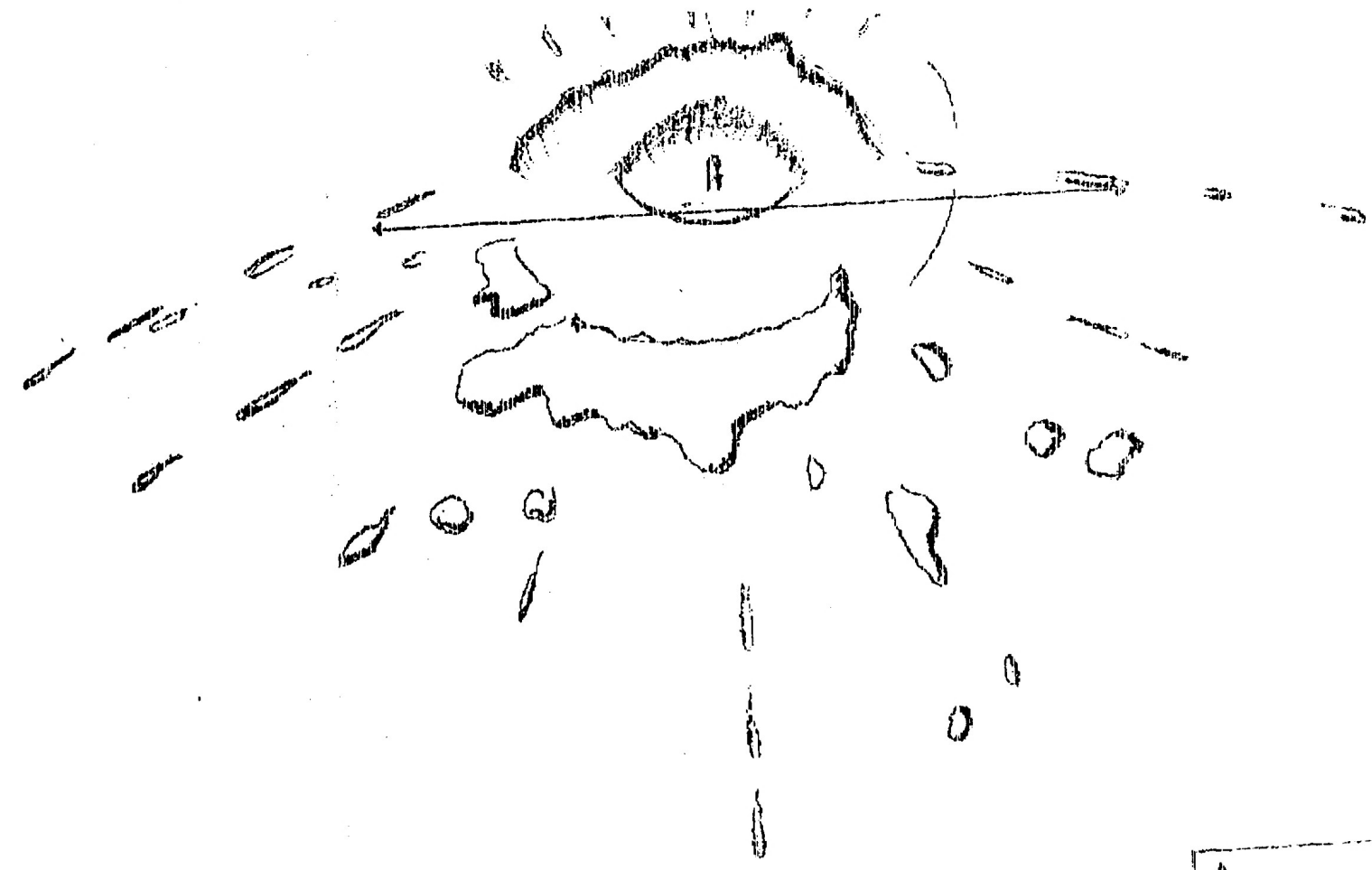
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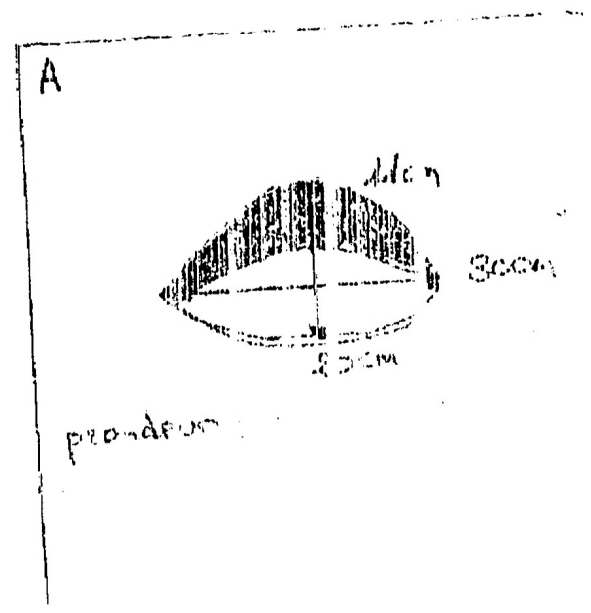
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GERBE LATÉRALE ET LE CRATÈRE



croquis B

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TO ANNEX.

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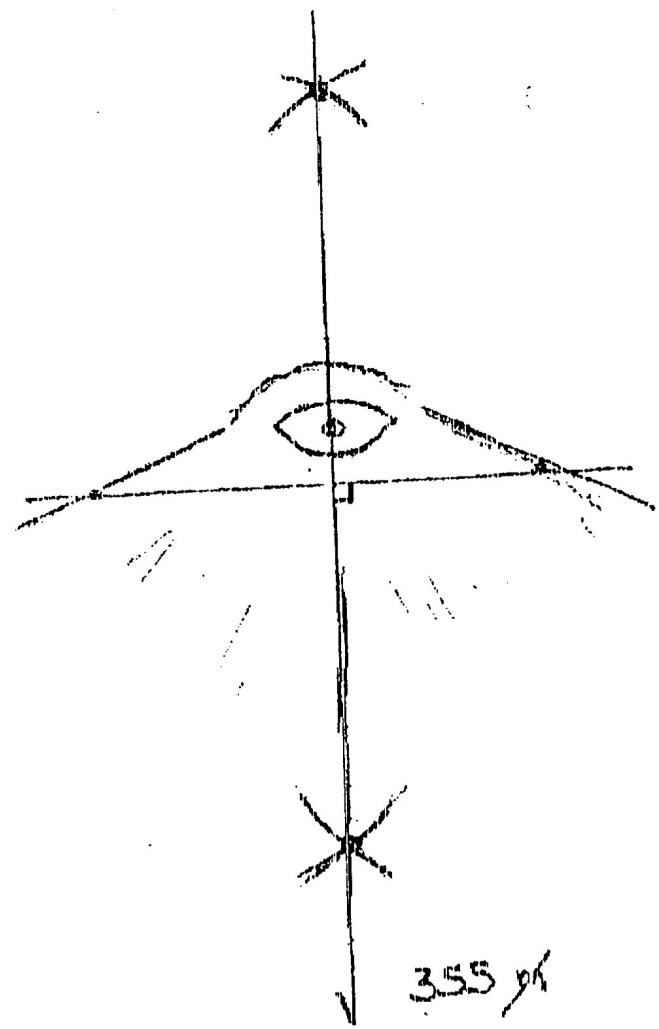
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APPENDIX 7

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Tablica 1a

IZBOR PUNJEVA
ZA 120 mm TREKUTNO PLGASNE MINE M49PI (OF-843)
ILI M49PI (OF-843/1) ILI M49

Duljina	Prva punjeva V ₀ =115 m/s			Druga punjeva V ₀ =134 m/s			Treća punjeva V ₀ =192 m/s		
	Duljina	Padni ugao	V ₀	Duljina	Padni ugao	V ₀	Duljina	Padni ugao	V ₀
m	pod.	hilj.	m	pod.	hilj.	m	pod.	hilj.	m
300	3-64	1380	3						
400	4-04	1383	4						
500	4-45	1314	5						
600	4-87	1274	6	3-81	1379	6			
700	5-32	1232	7	4-04	1368	6			
800	5-80	1187	8	4-27	1337	7			
900	5-32	1137	9	4-51	1319	8			
1000	6-01	1081	10	4-75	1293	9			
1100	7-02	1014	11	5-00	1270	9			
1200	3-62	917	12	5-26	1247	10	4-63	1320	8
1300				5-52	1223	11	4-69	1303	10
1400				6-80	1197	12	4-87	1280	10
1600				6-10	1170	13			
1600				6-41	1142	14	5-05	1275	11
1700				6-75	1111	15	5-23	1259	12
1800				7-12	1077	15	5-41	1243	12
1900				7-63	1039	16	5-61	1226	13
2000				8-03	999	17	5-80	1209	13
2100				8-08	932	18	8-01	1191	14
2200							8-23	1172	14
2300							8-45	1153	15
2400							8-59	1132	16
2500							8-94	1110	16
2600							7-21	1038	17
2700							7-51	1030	17
2800							7-84	1030	18
2900							8-22	936	18
3000							8-68	952	18
3100							9-38	838	20

Tablica 1b

IZBOR PUNJEVA
ZA 120 mm TREKUTNO PLGASNE MINE M49PI (OF-843)
ILI M49PI (OF-843/1) ILI M49

Duljina	Četvrta punjeva V ₀ =233 m/s			Peti posrednik V ₀ =295 m/s			Šesti posrednik V ₀ =328 m/s		
	Duljina	Padni ugao	V ₀	Duljina	Padni ugao	V ₀	Duljina	padni ugao	V ₀
m	pod.	hilj.	m	pod.	hilj.	m	pod.	hilj.	m
2200	5-24	1264	16						
2300	5-40	1252	16						
2400	5-55	1240	17						
2500	5-70	1227	18						
2600	5-85	1214	18						
2700	5-02	1200	19						
2800	6-18	1186	19						
2900	6-37	1171	20						
3000	6-55	1156	21						
3100	6-74	1140	21						
3200	6-94	1123	22	5-06	1216	25			
3300	7-15	1108	23	5-10	1204	25			
3400	7-38	1088	23	5-24	1191	26			
3500	7-62	1068	24	5-39	1177	27			
3600	7-89	1041	24	6-54	1110	28			
3700	8-20	1014	25	6-70	1107	28			
3800	8-57	982	26	6-88	1104	29			
3900	9-04	938	26	7-05	1100	30			
4000				7-22	1105	30	6-35	1094	31
4100				7-41	1099	31	6-48	1086	32
4200				7-62	1092	32	6-61	1076	33
4300				7-84	1083	33	6-75	1064	33
4400				8-09	1072	33	6-89	1054	34
4500				8-37	1060	34	7-04	1041	35
4600									
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Annex D

SUMMARY OF TESTIMONY - GENERAL WITNESSES

1. Testimony - Captain Andhuy, Headquarters Sector Sarajevo.

At the time of the explosion, Capt Andhuy was in an apartment approximately 150 meters northwest of the Market. He states that he heard a single explosion from the area of the Market between 1200 and 1215 hours on 5 February. He immediately went to a window from which he had a view, partially obstructed by low buildings to his front, of the Market area. He recalls seeing a cloud of smoke and dust clearly emanating from the area of the Market. After reporting this information to Sector Headquarters, he proceeded to the edge of the Market standing on Marshall Tito Street, looking North, where he remained in the Market itself was blocked by local police. He remained in the Market area continuously until approximately 1500 hrs, with the exception of two short walks down the road to act as a guide for other UN personnel. The weather was cloudy, but not raining.

Upon his arrival on the scene, all local efforts were devoted to the evacuation of casualties. This was done exceptionally quickly, with little apparent coordination by local authorities. The wounded were loaded into the trunks of small cars, two and three at a time, and onto the backs of trucks in much larger numbers, with little regard for their condition. There was no evident involvement of medical authorities in the evacuation process. By approximately 1240 hours, local police indicated to him that all wounded had been evacuated and that no further assistance from the UN would be required in the evacuation process. His estimation of the total number of casualties, which he described as liberal, was between 100 and 150 dead and wounded. He also stated that when he passed near the Market one hour before the explosion, it was very crowded with at least 300 - 500 people present.

In terms of physical evidence of the blast, he indicated that few of the market stalls were turned over or damaged, and only those in the immediate vicinity of the impact area were fragmented. Some stalls were displaced to allow the evacuation of the wounded. During his monitoring of the Market area from the time of his own arrival to that of the Friebat 4 Crater Analysis Team, he observed no signs of tampering or foul play in the area of the crater. He was on the scene while this team conducted their analysis, and confirms that they removed a tail fin from the crater.

2. Testimony - CWG Meinard, Headquarters Sector Sarajevo.

CWG Meinard was with Capt Andhuy just prior to the explosion and accompanied him to the scene. Her testimony was consistent with that given by Andhuy, although not as detailed. She estimated that there were at least 100 casualties and bodies

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evacuated during the period she was in the area of the Market.

3. Testimony - 2nd Lieutenant Steeves, Combat 2 IO

2Lt Steeves was at the Kosovo Hospital when, at approximately 1215 hours, he heard an explosion not far away. He proceeded to the area of the Market where he was met by Capt Audhuy at approximately 1230 hours. He entered the market place with shell dressings but encountered hostility from the crowd and returned to Marshall Tito Street. He estimated the number of casualties at roughly 25 - 30 dead and 60 - 70 wounded. He also observed that a discernable arc was formed by the casualties (bodies) south of and in the immediate area of impact. He also observed that many of the injured appeared to have received wounds to their limbs as a result of fragments.

4. Testimony - Major Afzaal, UNMO P2

Major Afzaal, following instructions from his UNMO Operations Centre, arrived at the Market at approximately 1300 hours and remained for roughly 30 minutes. He noted that earlier that morning he had passed by the market and observed that it was "absolutely jam-packed". By the time of his arrival, most of the casualties had been evacuated and the area cordoned off by police. There remained much blood in the area, numerous partial remains and limbs. He noted that the crowd was clearly hostile to the UN and that two men, apparently Arabs, "almost stopped us and shouted abuse at me in Arabic". He did not have any specific recollection of the physical damage or disruption.

Later in the day, as is normal UNMO procedure, he toured all hospitals and personally counted all bodies in the morgue and wounded in the hospital. At 1715 hours 5 February, he reported a total count of 61 dead and 148 wounded. He also noted that many of the wounds appeared to have been caused by shrapnel.

5. Testimony - Colonel Sonnic, Headquarters Sector Sarajevo

Col Sonnic arrived on the scene with the Sector Medical Liaison Officer at approximately 1330 hours. At this point, all casualties and remains had been removed from the Market. He observed a great deal of debris and blood in the area. Most of the market stalls in the square were in relative order; a small number in the vicinity of the blast were disrupted, and some of the metal frames showed signs of being struck by shrapnel.

6. Testimony - Captain Segade, Prebat 4

Capt Segade accompanied the initial Crater Analysis Team from Prebat 4 to the Market, arriving at approximately 1315 hours, and observed the analysis process. He described the crater, upon their arrival, as appearing to be fully intact and showing no signs of tampering. He watched as the Prebat 4 analysts scraped away soil from the mouth of the crater, excavated, and investigated the tail fins. When shown the tail fins held by the investigation team, he confirmed that some certainty

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that this was the same tail fin extracted from the crater. He is a trained and experienced mortar officer. He also observed that, in extracting the tail fin, the analysts had to chip away at the asphalt lip around the mouth of the crater, and enlarge the actual hole formed by the penetration of the tail fin.

As the MIO of Prebat 4, which is responsible for coverage of the Sarajevo area of interest to this Team, was also asked to provide information concerning the exact position of the confrontation line, and known BiH and BSA 120 mm mortar position. This information is included in Annex E.

7. Testimony - Sergeant Chief Bouquet, Headquarters Sector Sarajevo

SgtC Bouquet led a detachment of soldiers from Sector Sarajevo Headquarters tasked to assist in cleaning up the Market late on the afternoon of 5 February. His description of the site matches that of other witnesses. He confirmed seeing only one wooden stall surface that showed major effects of the blast and fragmentation.

8. Testimony - Major Russel, BH Command Forward

During the afternoon of 5 February, Maj Russel was at the Residency. He was ordered to visit the site by Brigadier Ramsay, COS BH Comd HQ, and arrived at the market between 1615 and 1630 hours. He walked directly to the site of the crater. There were many reporters in the area, some tables were upset, and he noticed tools - a chisel and a red pipe wrench - within one metre of the crater. He saw no shrapnel in the area, and concluded that the entire area had been swept thoroughly. He noted that most of the tables (stalls) were intact.

9. Testimony - Colonel Pardon, Headquarters Sector Sarajevo

Colonel Pardon was not directly involved in the events of 5 Feb. However, on 9 February he led a three-person UNPROFOR team visit to the Headquarters of 1 BiH Corps, in response to their invitation. The team was taken to a 105th Brigade ammo storage facility in which they observed only crudely manufactured 120 mm mortar bombs. There were no markings on these bombs, and they appeared to be made of a different metal than that produced in a factory. From there, they visited a 120 mm mortar position in Kosevo Stadium where they saw a 120 mm mortar (M75, No 2977, Yugoslav). The base plate was clearly embedded on an angle which would have precluded firing in the vicinity of the market, and, in his opinion, the base plate had been there for many months. The same type of crudely-produced ammo was also present at this site. They later visited a second position in Vasin Gan (and Mountain Brigade), where they were shown another 120 mm mortar. The base plate also appeared to have been dug in for some time, and it was the opinion of the team that the height of the wall immediately behind the mortar would have precluded firing in the general direction of the market.

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Colonel Pardon, without warning, was then taken back to 1 Corps HQ where he was brought before the members of B-H Government Commission of Inquiry into the 5 February Market incident. He was presented with various pieces of evidence and the commission's findings, and was confronted with various demands which are not relevant to this investigation. Col Pardon's report is attached to Annex E of this report.

10. Testimony - Colonel Ambrosi, SMEDIC, Sector Sarajevo

Colonel Ambrosi arrived in the area of the Market with the Sector COS, Colonel Somic, at approximately 1250 hours. Access to the site was blocked by local police. He was informed that all casualties had been evacuated from the scene, and proceeded to Kosevo Hospital. He observed a very large number of casualties at the entrance to the hospital. He offered UN assistance with both the treatment and evacuation of casualties. Offer accepted, and a small number of wounded were evacuated to UN medical facilities. Throughout the day he alternatively visited the PTF building, Kosevo Hospital, and the Airport.

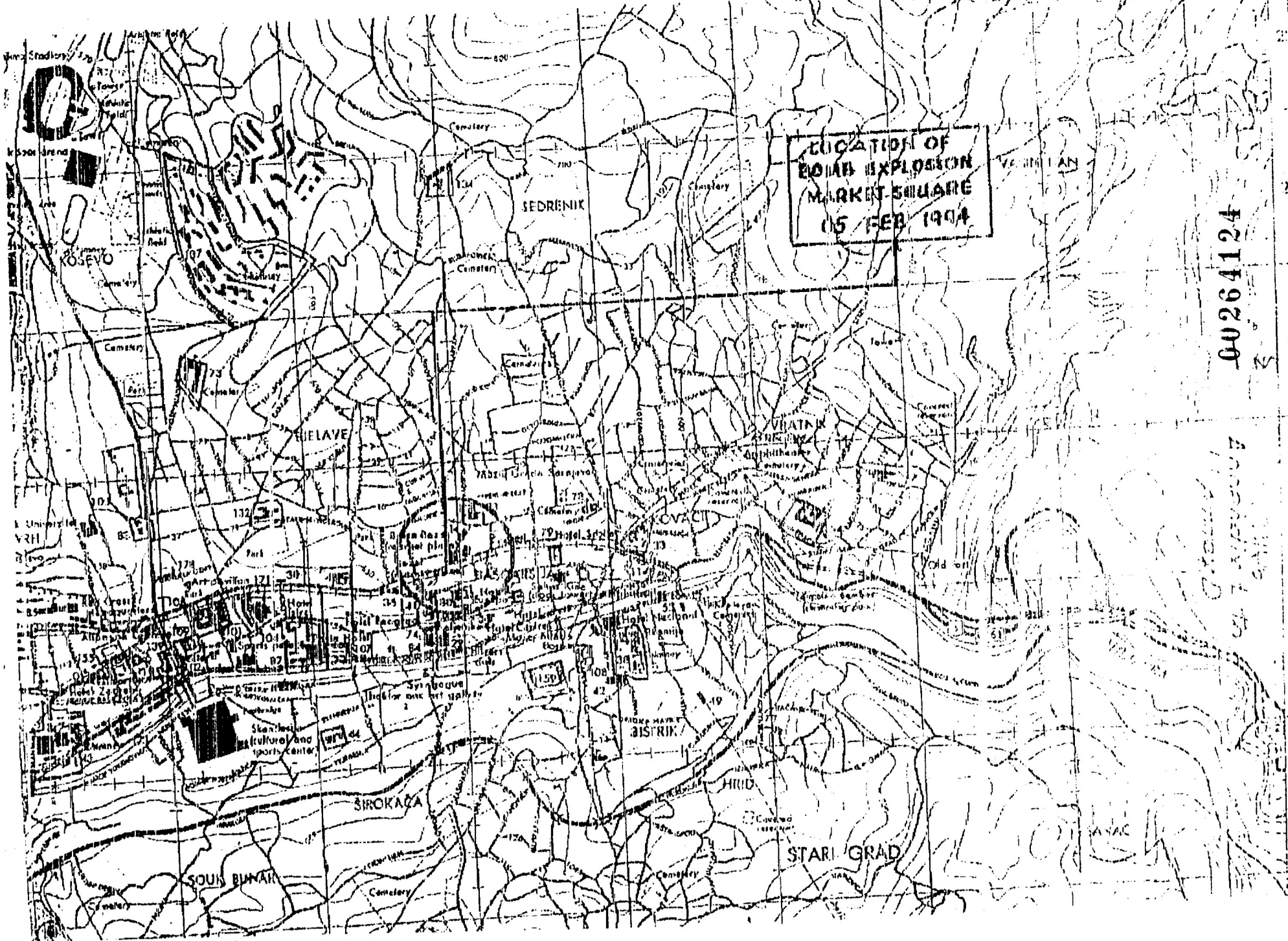
His estimate of observed casualties on the first day (5 Feb) was reported as 52 dead and 119 wounded. He noted that many less seriously wounded were turned back from the hospital without treatment. He expressed the opinion that the quoted figure of 65 dead and 119 wounded was not unreasonable based on his observation of activity at the hospitals on 5 and 6 Feb.

He also observed that a majority of the casualties treated by UN medical personnel were shrapnel wounds. In all cases the shrapnel was returned to the patients, and thus there is no physical evidence of such extracted shrapnel.

Appendices

Appendix 1 - Sarajevo Site Plan showing location of explosion

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MILITARY ANALYSIS

1. Interviews were conducted with UN Military Information Officers and UNMOs to gain a better understanding of the capabilities and dispositions of the warring parties in the area of interest to the team. The following personnel were interviewed:

- a. Capt VILLOT, MIO Sector Sarajevo
- b. Capt JL SEGAGE, MIO FREBAT 4
- c. Capt D. HASELL, MIO UNMO HQ Sarajevo.

2. Confrontation Line. The location of the confrontation line (CL) changes as local battles are won and lost. Since the area of interest to the team was in the Prebat 4 area of operations, this information was obtained from this unit's MIO. The most current depiction of the CL in this area is shown on the map at Appendix 1, along with the direction of fire estimated by the Team's crater analysts. The range bracket clearly overlaps both sides of the confrontation line.

3. BiH Orbat and Positions. The area of interest to the team, overlaps two Bosnian Formations: 105th Brigade and 2nd Mountain Brigade. As described in Annex D, on 9 Feb 94, Col Pardon, DCOs Sector Sarajevo, visited two 120mm mortar positions - one in each brigade's area - and an ammo storage facility which included what appeared to be locally produced (as opposed to factory-run) 120 mm mortar bombs (see Appendix 2). Both positions appeared to have been established in 1993, and both were located outside the estimated direction of fire. Comment: This information was gained from a visit at the invitation of the BiH. The visit was orchestrated by the BiH, and UN personnel were shown only what the BiH had prepared in advance to show them. The information is only conclusive on the basis of what was actually seen: it does not provide conclusive evidence of the extent of BiH mortar weapon holdings, nor the variety of types of ammunition held.

4. BSA Orbat and Positions. The Bosnian Serb area close to the directional bracket is controlled by Kosevo Brigade. Prebat 4 MIO confirmed the existence of a 120 mm mortar position in BR BP 22242 which is outside the directional bracket. Col Cvethovic, CO, BSA Arty Regt stated that Kosevo brigade has mortar positions (including 120mm mortar) in the Mirovici area (BP 9463). These positions have not been visited by UN personnel in at least four months, and cannot be located with any accuracy. Since October 1993, UNMOs have been denied freedom of movement in this brigade area, although most shots fired from the area can be observed from UNMO detachment areas.

5. Shots. UNMOs reported no shots from the area close to Kosevo

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Brigade area on 5 Feb 94. The explosion in the Market was recorded as an incoming round from UNMUS on the BiH side, but with no indication of the origin of fire.

6. CONCLUSIONS. The known BSA and BiH 120 mm mortar positions in the general area of interest are plotted at Appendix 1. It is clear from discussions with UNMUS and MICO that, with their limited freedom of movement and small number of observers, their knowledge of the details of 120 mm mortar positions and ammunition holdings in the area of interest is far from complete. Mortars are easy to hide and equally easy to move. From Appendix 1 it can be seen that the Serb position at Mrkovići is the nearest known position to the directional bracket. However, there could be any number of well concealed 120 mm mortar positions which are unknown to UNPROFOR personnel on either side of the CL within the estimated range bracket. It can only be concluded from this assessment that, in theory, the fire could have originated from either side of the CL.

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APPENDIX 1

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PROPERTY 2 TO

ANNEX C

2/7/94

ROUTINE //CLASSIFIED//IMMEDIATE// MOST IMMEDIATE
PAGE 1 OF
UNCLASSIFIED//RESTRICTED//CONFIDENTIAL//CRYPTO ONLY//
TRANSMIT NR : DTG:10/0294
TO: BH CDR FROM: SHQ SARAJEVO
FAX NR :
FAX NR :
DRAFTER: MAJ BARRAL
RELEASING OF : COL PARDON DCUS
INFO : SC, DSC, COS, SMO, FREBATA, SMIO
REFERENCE :
SUBJECT : BHA GUN/MORTAR POSITIONS CHECKING AS TO 09/02/94

SEE REPORT ENCLOSED

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BHA MORTARGUN POSITIONS CHECKING
AS TO 09/02/1994

At bosnian authorities request an UNPROFOR delegation was appointed (see annex 3) to check bosnian guns mortar positions in Sarajevo on the 9th of feb. This took place in a general process of cease-fire.

CHRONOLOGY

- 08.45 Briefing with B.H. cder
 - 09.45 Briefing at BHA 1st Corps
 - Gal DAHIC
 - Col HADZNAZIC
 - Amir DELIJK security officer
- The only subject Gal DAHIC spoke about was the shelling of the market on the 5th feb. He rapidly oriented the checking on the north-east area of Sarajevo in connection with this shelling. although he declared that the delegation could ask to see anything anywhere.
- So following agenda was decided:
- 1 - 105th brigade
 - 2 - 2nd brigade

- 10.00 visit to 105 TH brigade HQ
 - Brief with : Esad BAJRAMOVIC - COS
 - Sejver ALADUZ - DCOS
- Delegation visited ammo storage on place and a mortar position in KOSEVO STADIUM (near ZETRA)
 - (See annex 1 for report)

- 11.00 Visit to 2nd brigade HQ
 - Brief with Sejo KRESO - DEPUTY CDER
- Delegation only visited a mortar pos in VASTN HAN
 - (See annex 1 for report)

- 12.00 In 1st Corps HQ looking at the reliefs of the shell and C.L. on map.
 - In fact delegation was invited to take place in a meeting room. A committee was sitting there composed of a judge, 3 ballistic experts, the deputy chief of security and COL HADZNAZIC
 - (see annex 2 for report)

14.00 End of this hard meeting.

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ANNEX I

A/105 TH BRIGADE

WHAT : 1 x 120 mm mortar M75 N° 2977

WHERE : KOSEVO STADIUM

CIRCUMSTANCES : aiming at VOGOSCA (N-W) Obviously, because of

the base plate altitude this mortar can only (on this position) fire to north / northwest .

AMMUNITION : only one round shown .

AMMUNITION STORAGE :

- at 105 TH BDE 5x 120 mm rounds
- 2x boxes of 82 mm rounds
- All plain fabrication .

MARKS : - painted marks : 01.94

- carved marks : UP 08793 67 UF 12

- propellant charge : 01.93

B / 2ND MOUNTAIN BRIGADE

WHAT : 1x 120 mm mortar

WHERE : BP 956 610 (VASIN HAN)

CIRCUMSTANCES : - base plate highly inclined at east so that it could fire

anywhere except to west (and because of a wall) .

- gun and bipod were in a house at hundred meters,
- 6 rounds shown - same marks than 105TH BDE.
- 1x82mm mortar with ammo could be also seen .

CLASSEMEYI

- the tail fins finded on the market place and that was shown to us later was different from the other we saw today .

- the two mortars which were shown couldn't fire in market direction .

- On VASIN HAN , a witness (Frank SLAKU ? UN ID N° 23535 working in

YUGO) stated that , at the time of the shelling an AFC from EGYPTBAT was in vicinity of the mortar . It will be easy to confirm this information .

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ANNEX 2

MEETING REPORT

From the beginning, the committee we met at IST Corps considere us as skilled and appointed delegation to give an official assessment of UNPROFOR about the origin of the 5TH FEB. shelling , that was the reason that explain the composition of their committee which aim is to participate to inquiry about war crimes

The meeting followed the above progress :

1/ They ask us to state the identification of the origin of the shelling

2/ We only agreed about the general direction were it came from.

3/ They showed us their own analysis :

- crater analysis.
- fire table.
- ballistic diagram,
- shell analysis -funs
- propellant cartridge and marks
- fragmentation of spinters
- video on impact area .

4/ They try again to make us giving an assessment, but chief of delegation refused and told them that Gal ROSE would first be informed .

5/ They asked us to transmit to BH CDEP their request which is to create us soon as possible an UNPROFOR inquiry committee which could work as well :

- A - on his own side but with all results and proofs they hold and without any movement restrictions . In this case, the only restriction will be the judge presence,
- B - a joint committee BHA-UNPROFOR which could work in a close cooperation, exchanging proofs and results in order to issue a common official statement.

6/ As a conclusion, HADZNAZIC asked:

- A - if UNMOS were able to state about outgoing (scrib or besnian) in this area.
- B -if UNPROFOR agreed with one of the two above propositions.
- C -insisting about urgency of a solution as the matter is secured until the end of inquiry.
- D -the judge repeated those requests but under the juncture frame in the taken in consideration is an official written request is to be done in the

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page 2

7/ COLPARDON, chief of the UNPROFOR delegation stated that:

- A - their requests would be transmitted as soon as possible to BH CDER.
- B - delegation appreciated frankness of contacts.

GENERAL CONCLUSION

It is to be noticed that during the whole meeting bosnian declarations were aggressive at UNPROFOR general policy, blaming for its incompetence and lack of abilities of its members and accusing at several times that UN or UNPROFOR members often stated on bosnian responsibility in the market shelling.

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ANNEX 3

LIST OF UNPROFOR DELEGATION

- | | |
|--------------|--------------|
| COL. PARDON | DCGS SHQ |
| MAJ. BARRAL | DSMIO SHQ |
| MAJ. VILLOT | DMIO SHQ |
| CPT. AUDHUY | LO (BHA) SHQ |
| MAJ. THOMAS | SMO SHQ |
| MAJ. ZAITSEV | UNMO SHQ |
| CPT. SEGADE | MIO FREBATA |
| CWO CAZAUX | MIO FREBAI4 |

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APPENDIX 3 TO R 1024754
ANNEXE - 43/46

PAPA
DATE: 05 FEB 94

V1 SENDER SERIAL	2 TIME		3 ACTIVITY DETAILS	4 SOURCE OF INFO	5 REMARKS
	FROM	TO			
✓ P3-01	0530	0535	B: A	UH	NTR
✓ P3-02	0600	0615	A: B	UH	NTR
✓ P3-03	0645	0645	C: D	UH	NTR
✓ P2-01	0745	0645	B: C	UH	NTR
✓ P3M-01	0847	0847	SMOKE 1	UH	NTR
✓ P1-01	0935	0935	B: D	LP	1 slightly wounded
✓ P2-02	0900	0900	B: C	UH	NTR
✓ P3-04	0956	0956	B: C	UH/S	NTR
✓ P2-03	1000	1000	B: C	UH	NTR
✓ P5-01	1130	1145	B: B	UH	NTR
✓ P1-02	1221	1231	B1 (MARKATE)	VH	NTR
✓ P2-04	1305	1305	B: B	VH	NTR
✓ P2-05	1332	1332	B: B	VH/S	NTR
✓ P5-02	1444	1444	B: B	VH/S	NTR
✓ P5-03	1532	1532	C: A	VH	NTR
✓ P5-04	1635	1635	B: A	UH	NTR
✓ P2-06	1704	1704	B: B	UH	NTR
✓ P2-07	1844	1844	B: A	UH	NTR
✓ P5-05	1900	1915	B: B + 2	UH	NTR
✓ P5-06	2045	2200	B: B	UH	NTR
✓ P2-08	2048	2108	B: A	UH	NTR
✓ P3-05	2025	2025	B: B	UH	NTR
✓ P2-09	2000	2000	B: A	UH	NTR

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Annex F

45/46

RECORD OF MEETINGBH GOVERNMENT REPRESENTATIVE - 13 FEB 94

On 13 February 1994, the investigation team leader, Col Gauthier, and 1col Ruyantsev, team member, met with Mr. M. Jamakovic at 1200 hrs at the Ministry of the Interior, Sarajevo.

Mr. Jamakovic confirmed that he was to act as the B-H Government representative for the purposes of the UN investigation into the Sarajevo Market explosion of 5 February 1994.

Col Gauthier explained the process being followed by the investigation team and the timeframe in which the report was to be completed (by 15 Feb). He explained that the BH representative would be allowed to maintain contact with the team, but that, given the independent nature of the team, investigation, he would not participate as a member of the team. The team welcomed any physical or technical evidence the government wished to offer us, but we were not prepared to discuss any analysis or findings related to such evidence. The team's findings would only be released after they had been reviewed and endorsed by the Force Commander and the SRSG.

Mr. Jamakovic agreed to handover to us the tail fin extracted from the crater, confiscated from the Frebat 4 Analysts at the site by local police, with the proviso that it be returned after the investigation. They also offered to provide the team with shell fragments apparently recovered from the Market. Since they had no way of proving that these fragments actually resulted from the 5 Feb explosion, it was agreed that they would be of little use. They also offer to provide a copy of a videotape by local authorities, showing scenes from the Market some time after the explosion and footage of the Frebat 4 Analysts scraping dirt from around the tail fin. The content of the tape provided no new information and was not used by the Team.

The following was collected from Mr. JAMAKOVIC:

- a. Tail Fin, with primer number MX3M74; BB 9701 (Recorded previously by the Frebat 4 Team).
- b. A photocopy of firing tables for the Yugoslav 120 mm mortar.
- c. A photocopy of a manufacturer's brochure for an Austrian-made 120 mm mortar bomb.

Col Gauthier asked if the BH Government had any further evidence it wished to present to the team. Mr. JAMAKOVIC indicated that they did not. He appeared to be entirely satisfied, and agreed to contact the BH IO should he wish to provide further information to the Team.

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ANNEX G

4-6/94

RECORD OF MEETINGBOSNIAN SERB REPRESENTATIVE - 13 FEB 94

On 13 February 1994, the Investigation Team Leader, Col Gauthier, LCOL Rumiyantsev, and Major Hamill, met with Colonel R. Cvetkovic at 1810 hrs in Pale.

Colonel Cvetkovic confirmed that he was to act as the Bosnian Serb representative for the purposes of the UN Investigation into the Sarajevo Market explosion of 5 February 1994.

Col Gauthier explained the process being followed by the Investigation Team, the nature of the evidence at our disposal, and the timeframe in which the report was to be completed (by 15 Feb). He explained that the Bosnian Serb representative would be allowed to maintain contact with the team, but that, given the independent nature of the investigation, he would not participate as a member of the team. The team welcomed any physical or technical evidence he wished to offer us, but we were not prepared to discuss any analysis or findings related to such evidence. The Team's findings would only be released after they had been reviewed and endorsed by the Force Commander and the SRSG.

Col Cvetkovic then discussed numerous aspects of the incident in theoretical terms, and offered his personal opinion concerning the validity of events as portrayed by the media. He had no specific evidence to offer of direct relevance to the investigation. Col Gauthier reiterated that the Team's findings would be based on technical analysis of the evidence at our disposal, and not on conjecture or supposition. Col Gauthier asked if the Bosnian Serb representative wished to submit any technical information to assist in the Team's analysis. The latter agreed to arrange to have such information handed over to the team at Lukavica on 14 Feb (this occurred at 1600 hrs 14 Feb).

Col Cvetkovic expressed full satisfaction with the information he had been presented, and agreed to communicate with the UNPROFOR LO at Lukavica should he wish any further contact with the Team. The Team's representatives departed Pale at 2030 hours.

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HQ BH COMMAND (MAIN)

Page 1 of 3

IMMEDIATE

UN-RESTRI

OUTGOING FAX NO: 236/93	DATE/TIME: 061015A FEB 94
TO: HQ UNPROFOR ZAGREB BHC FWD	FROM: BH COMD MAIN KISELJAK LT COL FINLAYSON CH G3 OPS SIGNATURE: <i>[Signature]</i>
FAX NO:	FAX NO: 8731301520/1522 (INMARSAT)
ATTN:	FILE REF NO: 3178 DRAFTER: LT COL FINLAYSON
INFO: SECTOR SARAJEVO	
FAX NC:	
SUBJECT: HUMANITARIAN ASSISTANCE TO SARAJEVO MEDICAL AUTHORITIES	
INTERNAL DISTRIBUTION: DCOS, ACOS G3	

MESSAGE

ATTACHED PLEASE FIND MEMO FROM BHC ACTIONS CURRENTLY IN HAND TO ASSIST AUTHORITIES.

TV01035

MH HQ 998 1026

MH TQ 395 10250

MH SA 469

SC
CO
SMEDLO
G15

R 417

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UNITED NATIONS



PROTECTION FORCE

HQ BH COMMAND

G5 CIVIL MILITARY OPERATIONS

TO: ACOS G3

FROM: GS

INFO: COS/ UNHCR/ G4 MED/ CAC/ P Info

DATE: 6 Feb 94

FILE NO: 100GSPLANS

SUBJECT: HUMANITARIAN ASSISTANCE TO SARAJEVO MEDICAL AUTHORITIES

SITUATION

1. A mortar bomb landed in Market in SARAJEVO on [REDACTED] approximately 58 were killed and 142 wounded. G5 was [REDACTED] investigate UNPR [REDACTED] response. G4 Med and US coordinated with UNPROFOR MEDEVAC SARAJEVO [REDACTED] night: 05/06 Feb 94 UN medical response.

FACTS

2. Medical crisis is essentially over late last night with only two operations left to complete before morning.
3. UNPROFOR sector SARAJEVO assisted during initial crisis and carried out eight operations in PTT.
4. Some patients were evacuated out of city with no identity. (details to be confirmed).
5. Local surgeons initially reluctant for UNPROFOR surgical assistance however will not likely shun support.
6. Local authorities requested medical stores. List provided.
7. US Medical A/C will arrive SARA at 061100 A hrs Feb 95. 00264139
8. UNHCR MEDEVAC SARAJEVO and ZAGREB making medical assessments at KOSOVO hospital and other BiH State hospital at 060700 A hrs Feb 94.
9. NORMEDCOY, one surg team, 4 ambulances wheeled armoured, one additional doctor

and nurse on standby in KISELJAK after all night drive from LUZLA. Commandant UN
FRANTZEN.

10. NORMEDCOY ordered to move at 0800 hrs to PTT bld to meet UNHCR MEDEVAC
as soon as possible.

ACTION

Strategy is to provide Med Sup when requested by local Authorities.

Recommend: Sector SARAJEVO and

12. Prepare strategy for reception of US Med A/C. Commander's support will be required.

UNHCR SARAJEVO responsibility.

13. There will be pressure to evacuate wounded to MASH etc. This will create administrative problems. No ID cards, many relatives will want to accompany. Croatian Authorities will oppose reception in ZAGREB. Beds will be required in overseas countries immediately should superior medical treatment be required outside of SARAJEVO. UNHCR and IOM will be required to expedite procedures.

14. NORMEDCOY will support UNHCR MEDEVAC and assist local medical authorities when requested. The will deploy to PTT building UNHCR MEDEVAC and await further instructions. Likely tasks:

a. medical surgical assessment of wounded in SARAJEVO hospitals. Conduct of surgery unlikely at this time;

b. delivery of med supplies to local hospital;

c. potential medevac of cas to airport, etc;

15. PR There will be great pressure by press to query what actions UNPROFOR has taken

to:

a. find the guilty and "punish them";

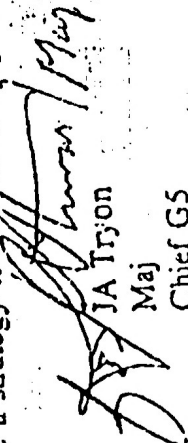
b. explain why the UN has taken no action in stopping bloody war;

c. determine what humanitarian assistance if any UNPROFOR has provided;

d. explain why UN has taken no action to prevent further incidents.

e. explain why UNPROFOR requires US Med A/C to provide support?

16. Comment. P Info should prepare a strategy to answer the above questions.


JA Trjton
Maj
Chief GS

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~~OFFICE OF THE PRESIDENT OF SARAJEVO~~

PRESIDENT

Mo Vendo Ken
T. Bien
FOR SHEDLO
AT U.N.I.C.E.
H

COMMANDER OF UNPROTECTED AREAS FOR
REPUBLIC SARAJEVO

General Subinovic

Honorable General,

Although for almost two years we have been living through the "ninth circle of hell" into what this city has been turned, and bearing horrible ravings of the wild Serbian neonazism over innocent civilians, the massacre we lived through on the 5th of February 1994. on the market place "Markale" is something which has been unseen in the history of wars, and something which none healthy human mind could realize or bear.

In that worst moment, the members of your troops showed all of their humanity and devotion with the most human act, and that is to help the man in trouble. Such an act of your soldiers deeply moved me and all of my citizens and showed to us that humanity and understanding still exist.

Because of that, I want to truly thank you in my name and in the name of all citizens of Sarajevo and especially of the injured's families, for everything you did to help us as much as you could.

Respectfully yours

Sarajevo, 7th of February, 1994.

TAJ MAMOR OF SARAJEVO.
Muhammad Prosenjakovic

→ LOS
SOO
SHEDLO
FREBATT 2
FREBATT 4
AIRPORT

00264141

UKR BAT
EGIBRAC

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P.1

HO BH COMMAND SARAJEVO

CRUT

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MOST IMMEDIATE

TOT

12608

RESTRICTED

R1024762

07 FEB 1994

Pages 3

OUTGOING NO: MA-D-SRSG-0053	DATE: 6 February 1994
TO: SHQ SARAJEVO	FROM: BH COMD FWD SARAJEVO
FAX NC: 071-460 545	FAX: 664 088
INFO: SECTOR COMMANDER / — MA SECTOR COMMANDER	DRAFTER : MAJ RUSSELL TITLE : MA-D-SRSG REL FASING OFF. : MAJ CHRETIEN SIGNATURE: <i>[Signature]</i>
SUBJECT: AMPLIFICATION OF CRATER ANALYSIS OF 5 FEBRUARY 1994 - SARAJEVO MARKET	

Attached, please find a description of some background information on the above mentioned subject.

Notwithstanding the crater analysis provided, could you look at the attachment and provide more specific details on those who conducted the analysis, the problems faced in this particular case and expand on the actual difficulty in not being able to specifically determine the exact firing location.

The information will be required as soon as possible, so that it can be passed to the meeting of the Security Council on 7 February, 1994.

Answers can be in point form, so that they can assist in answering questions on the subject.

Thank you very much for your attention to this matter.

Best regards.

R-439

FWD 2245

Sc (Saraj.)
DSC
CO S

SDO

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SMIO.

Amplification dealing with the Crater Analysis
of 5 February, 1994, at the Sarajevo Market

Two different teams independently conducted the crater analysis. One team was from French Batt 4 - experts in artillery and mortar matters - and the other analysis was conducted by an expert on crater analysis from Sector Sarajevo.

As in a criminal investigation of murdered scenes, it is most important that the site should not be disturbed, so that all factors can be taken into consideration, for example: evidence, which shows the location and direction of explosion, parts of the projectile and crater location. In this case, due to the production of mass casualties by a single 120 millimetre round, understandably, both the dead and injured, were removed from the scene. This obviously disturbed much of the evidence - such as location of fragments. Normally a good crater analysis can be done, due to the fact that when a mortar round impacts on the ground, a specific signature assists the investigators in determining the approximate direction from which it came, and the angle of the descent. With the direction, the angle of the descent and evidence of the type of round, one can determine through the use of range tables the approximate location of the weapon system.

The difficulties in this situations are as follows:

- 1) Only one round was fired. In good crater analysis procedure, a minimum of 3 craters will give a better chance of confirming the location of the weapon system. With one round only, no approximate location can be determined. In this situation, the mortar round apparently struck vendors table which initiated the round, just prior to striking the ground. This can be confirmed by one, the small crater signature (a 120 millimetre mortar round would normally make a bigger crater on the pavement found at the market), and
- 2) The amount of casualties generated by the explosion leads one to conclude that a slightly above ground explosion occurred,

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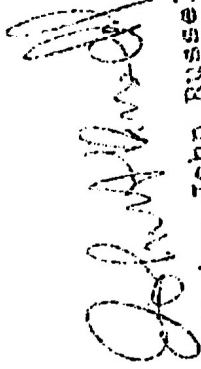
P.3

R1024764

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producing a maximum shower of shrapnel and other projectiles such as glass, wood and pieces of metal.

Based on the evidence available at the site, the minimum and maximum range at which the weapon system could have been fired, straddles the confrontation line. It is therefore, impossible to determine with certainty, on which side of the confrontation line the round was fired.



Major John Russell
Military Assistant to D-SRSB, Sarajevo

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289 e Livano

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19 59 UNPROFOR

ROUTINE/PRIORITY/IMMEDIATE/MOST IMMEDIATE
UNCLASSIFIED/RESTRICTED/CONFIDENTIAL/CRYPTO ONLY

OUT GOING FAX : 204	DATE 05/02/94
TO : ARMEE PARIS	FROM : SHQ SECTOR SARAJEVO
FAX :	FAX :
ATTN : A L'ATTENTION CELLULE YOUGOSLAVIE	DRAFTER : LCL PIETRANTONI
	TITLE : SOO
	RELEASE OFF : COL SONNIC COS
	SIGNATURE : 
INFO :	
INFO INTERNAL :	
SUBJECT : ANALYSE DE CRATER	

MESSAGE

OBJET : VEUILLEZ TROUVER CI-JOINT ANALYSE DE CRATER SUR L'OBUS TOMBE LE 5 FEVRIER 1994
SUR LE VIEUX MARCHÉ DE SARAJEVO.

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PAGE 1 OF 3

ROUTINE/PRIORITY/IMMEDIATE/MOST IMMEDIATE
UNCLASSIFIED/RESTRICTED/CONFIDENTIAL/CRYPTO/ONLY

OUTGOING FAX N°:	DATE:
TO : BH MAIN CMD KISELJAK	FROM : SECTOR HQ SARAJEVO
FAX N°:	FAX :
ATTN : G3 OPS	DRAFTER : MAJ BRUNOT
	TITLE : PLANS OFFICER
	RELEASE OFF : COL SONNIC CHIEF OF STAFF
	SIGNATURE : 
FO INTERNAL : SC - DSC1 - COS - SMIO - SOO - CAPT VERDY	
INFO EXTERNAL :	
SUBJECT : UN SHELLING REPORT 05FEB94	

MESSAGE

A/ UNIT CAPT VERDY (ANALYST)

B/ DATE/TIME OF SHELLING 051210 FEB 94

C/ LOCATION (GRID AND UN FACILITIES) 34T BP 92900-59650 (MARKET NEAR CATHEDRAL)
MAP 1/15000 CITY MAP

D/ TYPE - CALIBRE - AND NUMBER OF ROUNDS 1 SHELL MORTAR 120 MM

E/ PRESUMED ORIGINE OF FIRE ANGLE OF DESCENT 1400 MILS
ANGLE OF APPROACH FROM 800 TO 1000 MILS
MAXIMUM RANGE 2000 TO 3500 MILS

F/ NUMBER AND DESCRIPTION OF CASUALITIES ACCORDING TO MEDICAL SOURCES AT 1800 HRS :
- 52 PEOPLE KILLED
- 119 PEOPLE WOUNDED

G/ DESCRIPTION OF DAMAGE THE MORTAR SHELL IMPACTED ON THE WOOD OF A
STALL (0,90 M FROM THE GROUND) SO THAT THE
ANALYSIS WAS VERY DIFFICULT.

H/ ACTION TAKEN UNPROFOR HAS PARTICIPATED TO THE EVACUATION OF
9 WOUNDED PEOPLE

I/ RECOMMENDATIONS - THE RANGE IS SHORT. LOW ANGLE FIRE
- THE SHELLING IS EXTREMELY POINTED AND PREPARED

~~00264146~~

AS



13
12
11 32'
10
9
8

CONFRONTATION LINE

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STARI GRAD

SANAC

SHELLING

05 FEB. 94

12⁴⁰

1 MORTAR 120 MM.

34T
RP
92900-
59650

05/210 FEB 94



APPLE
OF HEIGHT
1400 M
AVUE
OF
APPROX
FROM 800
TO 1000

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