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March 16, 1978.

To Whom It May Concern:

The attached report by Grant Hendrickson describes the results of orientation EM surveys performed by him in August, 1977 in the Macmillan Pass district. Mr. Hendrickson is a graduate geophysicist from U.B.C. who is employed by Aquitaine Co. of Canada Ltd. and performed this test survey under my supervision. The work was performed on behalf of Itsi Joint Venture (Aquitaine, St. Joseph Exploration Ltd. and Union Oil Co. of Canada Ltd.).

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.,

RJC:jm

R.J. Cathro, B.A.Sc., P.Eng.

090386

REPORT ON HORIZONTAL COPLANAR LOOP ELECTROMAGNETIC SURVEYING ON THE MOONLIGHT CLAIMS

FOR

ITSI JOINT VENTURE

G. HENDRICKSON
AQUITAINE CO. OF CANADA LTD.
OCTOBER, 1977

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INTRODUCTION

During the latter part of August, 1977, several test E.M. lines were run by Aquitaine in the Macmillan Pass area of the Yukon. The purpose of these tests was to see what role horizontal coplanar loop E.M. surveying could play in the detection of lead zinc mineralization. From the outset it was realized that graphitic zones would cause many anomalies and that some of these graphitic zones may be associated with possible ore zones. Test lines were run on the following:

a) Tom Deposit
b) Howard Pass Anniv zone
c) Jason Deposit
d) Moonlight claims
e) Ess claims

INSTRUMENT

The new five frequency Maxmin II was used on this survey. This instrument was set up in the metric mode. Inphase and Quadrature compensator were both set at 5.0, the electrical 0 position, thus all values shown on the accompanying profiles are absolute.

SURVEY PROCEDURE

A topographic profile of the line was first obtained using a small portable inclinometer. From the topographic profile the information necessary to keep the coils coplanar is obtained. Survey stations were put in at a 25 metre horizontal interval. Corrections were made to the inphase response. These corrections were due to the fact that the coil separation was varying with the topography.

DISCUSSION OF RESULTS (refer to the accompanying profiles)

Only the profiles over the Tom and Jason properties and Moonlight claims are included here as the others have little bearing on the Moonlight claims.

A. Tom Deposit

Three conductive zones were picked up on this line. The conductive Shale at the west end of the line is the most obvious anomaly. The interpretation of this anomaly as graphitic Shales is based on a conversation with a H.B.M.& S.field crew working on the deposit.

At 4+60W there appears to be a rather deep thin conductor. The conductivity of this zone appears to be good, however, the low amplitude of the response makes any calculations of its conductivity thickness suspect.

At 3+92W a moderate conductor has been mapped. The width appears to be 15 to 20 metres. This zone appears to be dipping steeply east.

It is not known for sure if any of these conductive zones are due to lead-zinc mineralization. The response at 3+92W is probably a part of the Tom deposit. The conglomerates are not conductive.

B. Jason Deposit

The electromagnetic response indicates a rather sharp change in conductivity near station 4+00E. West of station 4+00E the rocks are more conductive, probably Shales. East of station 4+00E the rocks are quite resistive, probably the Conglomerates. There may be another Shale zone around 6+75E.

The anomaly centered around station 3+68E may be reflecting the graphitic zone associated with the mineralization at the Jason. It is unfortunate that we have no drill hole information on this property.

C. Moonlight Test

The electromagnetic response of this line indicates that conductive rock, Shale, underlies this area. There is no geophysical evidence that would suggest conglomerates anywhere on this line.

A wide zone of improved conductivity is centered around station 2+00S. This improvement in conductivity is probably only due to an increase in the carbon content of the Shale and thus should not be considered as a target for sulphides.

The zone between 11+50S and 9+50S is the only interesting area on this line. Three anomalies lie within this zone, however, the only one of interest would be the anomaly centered around station 11+15S. The conductivity thickness product of this anomaly is around 10 MHOS. The geophysical evidence suggests this response is due to Graphite, however, the presence of a water geochemical anomaly in the same approximate area is encouraging. This geophysical anomaly is more typical of the type of response seen at the Jason.

CONCLUSION

Horizontal coplanar loop electromagnetic surveying is a useful mapping tool in this type of geological environment. It is not possible to differentiate between the responses of Sulphides and Graphitic Shales since they both cover a broad range of conductivity. Additional information, such as Geochemistry and Gravity, will be required to screen the numerous conductors that will be picked up when surveying in this area.

If more geological information had been available before the test work, the geophysical program could have been designed better for each particular

case. Additional lines and in some cases longer lines would have helped.

RECOMMENDATION

In reconnaissance electromagnetic surveys in this area the Maxmin II should be used with coil separations of 50 metres or 100 metres. The choice of coil separation will depend on overburden depth. Two frequencies should generally be read, 888Hz and 222 Hz. The shorter coil separations and low frequencies should reduce the response of the conductive background.

In areas of special interest all five frequencies of the Maxmin should be read and one should try a couple of different coil separations. More interpretable information will be obtained by doing this.

Grant Hendrickson

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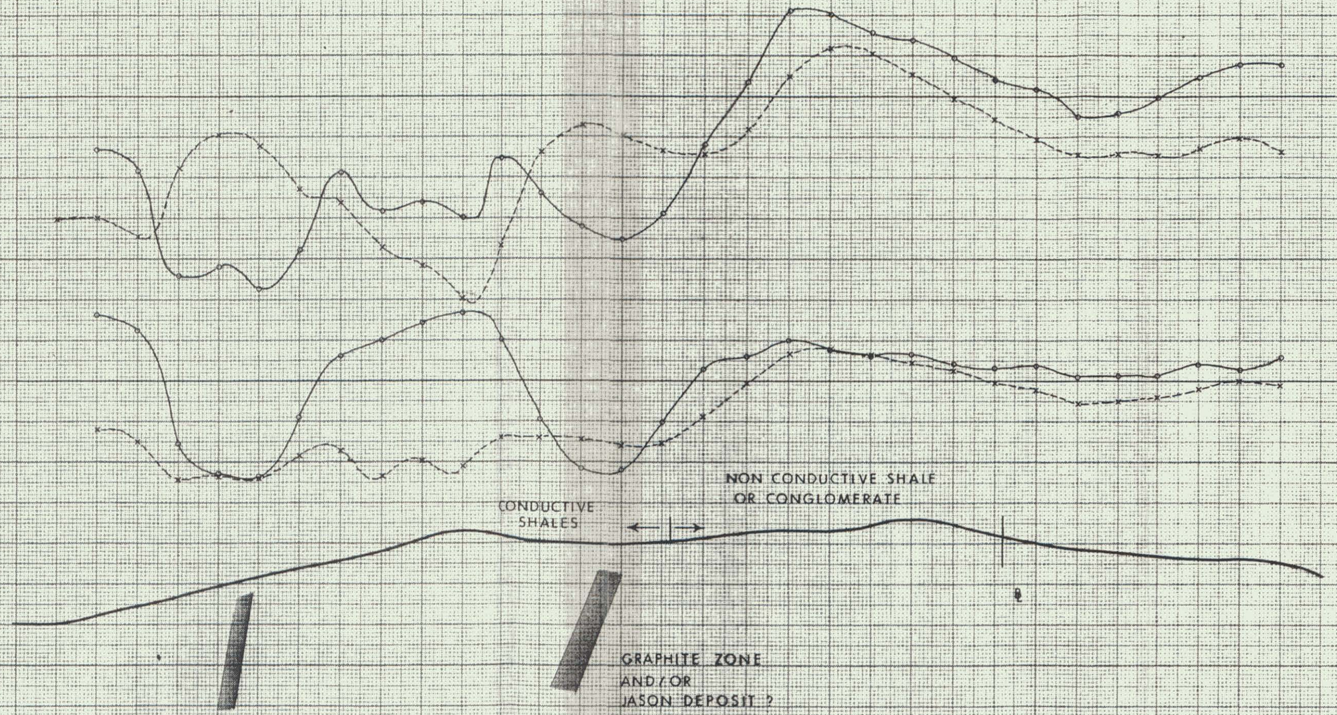


INSTRUMENT USED
MAX.MIN. II

o——o IN PHASE RESPONSE
x- - -x QUADRATURE RESPONSE

NOTE
0+00 WAS SET AT
STATION 20 SW I ON O.I.V
LINE 20 S.E.

METRIC SYSTEM

0 50E 100E 150E 200E 250E 300E 350E 400E 450E 500E 550E 600E 650E 700E 750E 800E

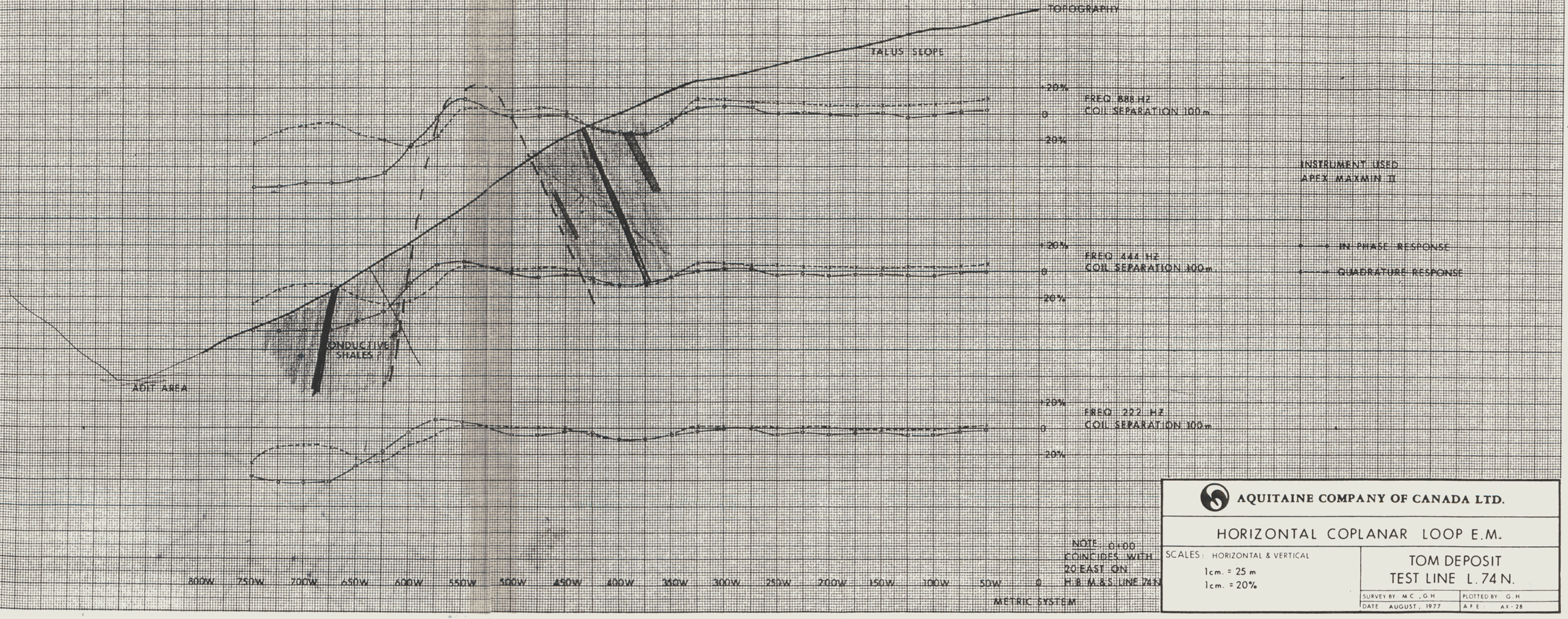
AQUITAINE COMPANY OF CANADA LTD.

HORIZONTAL COPLANAR LOOP E.M.

SCALES
1cm = 25 meters
1cm = 10 %

JASON DEPOSIT
TEST LINE 20 S.E.

SURVEY BY M.C., G.H. | PLOTTED BY G.H.
DATE AUG. 1977 | A.F.E. AX-28



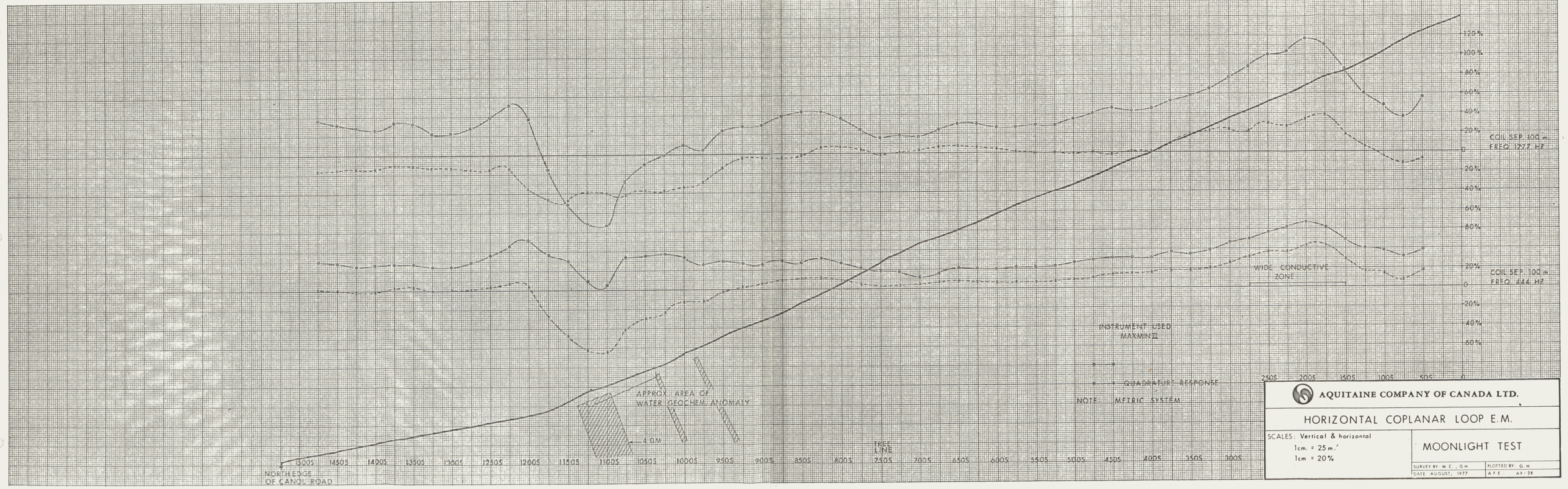
AQUITAINE COMPANY OF CANADA LTD.

HORIZONTAL COPLANAR LOOP E.M.

SCALES: HORIZONTAL & VERTICAL
1cm. = 25 m
1cm. = 20%

TOM DEPOSIT
TEST LINE L. 74 N.

SURVEY BY: M.C., G.H	PLOTTED BY: G.H
DATE: AUGUST, 1977	A.F.E.: AX-28


+120%
+100%
+80%
+60%
+40%
+20%
0
-20%
-40%
-60%
-80%
COIL SEP. 100 m.
FREQ. 1777 HZ
COIL SEP. 100 m.
FREQ. 444 HZ
WIDE CONDUCTIVE ZONE
INSTRUMENT USED
MAXMIN II
QUADRATURE RESPONSE
NOTE: METRIC SYSTEM
APPROX. AREA OF
WATER GEOCHEM. ANOMALY
4 Ω M
TREE LINE
NORTH EDGE
OF CANOL ROAD
1500S
1450S
1400S
1350S
1300S
1250S
1200S
1150S
1100S
1050S
1000S
950S
900S
850S
800S
750S
700S
650S
600S
550S
500S
450S
400S
350S
300S
250S
200S
150S
100S
50S
0
AQUITAINE COMPANY OF CANADA LTD.
HORIZONTAL COPLANAR LOOP E.M.
SCALES: Vertical & horizontal
1cm. = 25m.
1cm. = 20%
MOONLIGHT TEST
SURVEY BY: M.C., G.H.
PLOTTED BY: G.H.
DATE: AUGUST, 1977
A.F.E.: AX-28