

**NUI DAT CONNEXION
TRIG DIAGRAM**

ANNEX B — Nui Dat Connexion — Trig Diagram, Summary of Closures, Summary of Observations

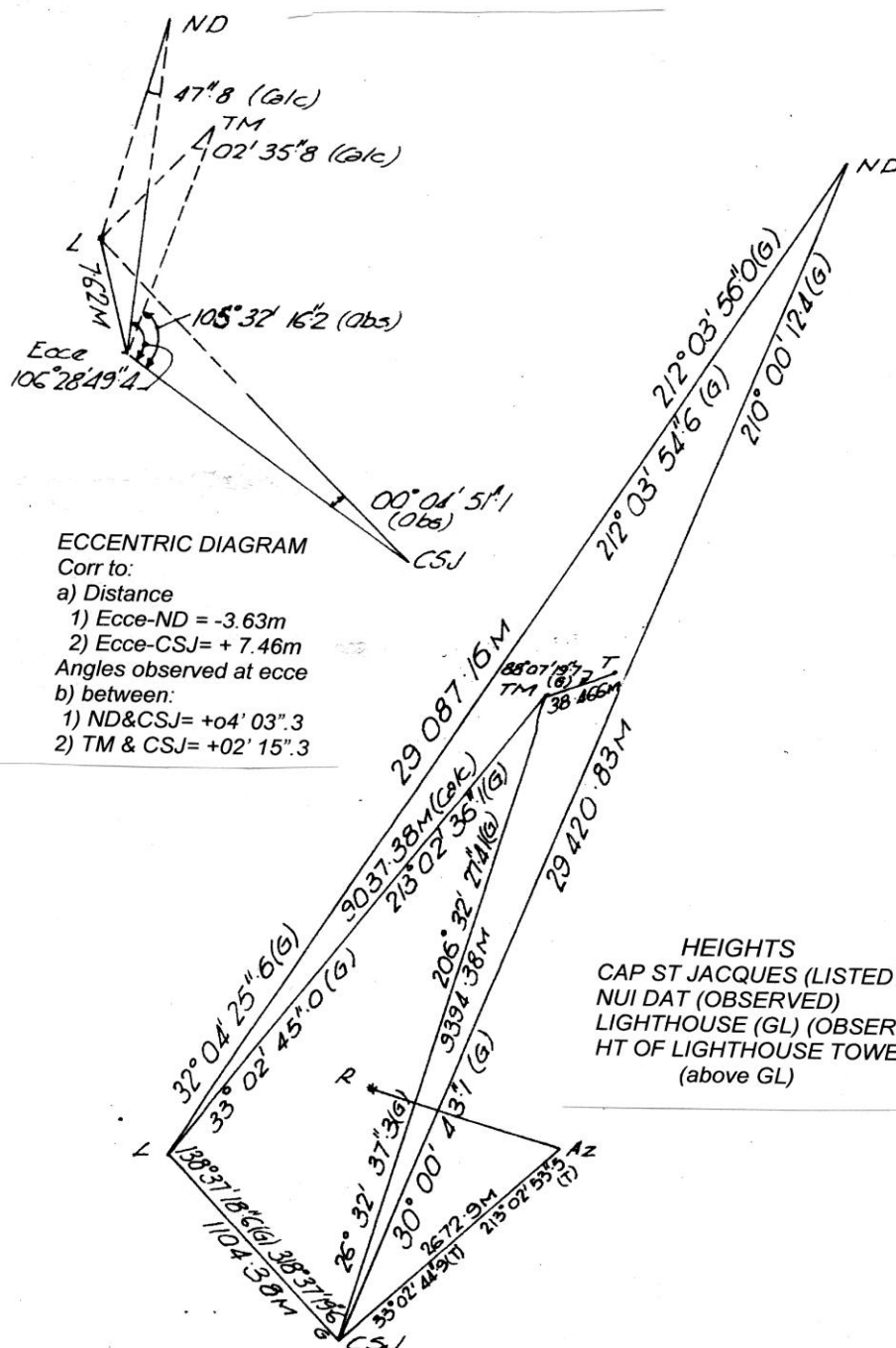
One of thirteen annexes (A–M) to “War in Vietnam: A Surveyor’s Story”, by Lieutenant Colonel Robert Francis Skitch (Retd), 1934–2026 — Officer Commanding, Detachment 1st Topographical Survey Troop, Nui Dat, 1966–67.

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NUI DAT CONNEXION SUMMARY



NUI DAT.....ND
VUNG TAU LIGHTHOUSE.....L
THANH.....T
THANH MINOR.....TM
CAP ST JACQUES.....CSJ
VUNG TAU AZ PT.....AZ
RADAR TOWER LIGHT.....R

**NUI DAT CONNEXION
SUMMARY OF CLOSURES**

SUMMARY OF CLOSURES (continued)*(Transcribed from the hand-lettered original)***AZIMUTH**

	TRUE	GRID
Observed Azimuth at Vung Tau Az Mk (8 arcs on Polaris – Range 7.0'')	295° 21' 25".0	
Observed Sun Az at Nui Dat to Lighthouse	212 ° 28' 22".0	212 ° 03' 54".6
Azimuth at Nui Dat to Lighthouse carried from Vung Tau Az Mk	212 ° 28' 23".4	212 °03' 56".0
Misclose	1".4	1".4

GENERAL DESCRIPTION:

The feature Nui Dat was fixed from the 1st order point NOUVEAU PHARE CAP ST JACQUES (VUNG TAU LIGHTHOUSE) by tellurometer measurement and angle observation.

CONSISTENCY OF EXISTING CONTROL

To obtain an indication of the consistency of the control a connexion was also made to the third order points CAP ST JACQUES and THANH from VUNG TAU LIGHTHOUSE. The triangle so formed was measured on two sides and two angles were observed. The third side could not be measured because of radar interference from Vung Tau airfield and possibly the lighthouse. The results indicate a complete lack of consistency in the control with a tendency for the 3rd order point THANH to support the first order point VUNG TAU LIGHTHOUSE. For this reason and also because the 3rd order point CAP ST JACQUES is listed three times in the Geodetic Coordinate Listing the 1st order point VUNG TAU LIGHTHOUSE was adopted as datum for the theatre.

DETAILED DESCRIPTION OF CONNEXION:

The triangle formed by NUI DAT, VUNG TAU LIGHTHOUSE & CAP ST JACQUES was fully observed and measured, ie, all sides and all angles. Azimuth was introduced at CAP ST JACQUES & NUI DAT. For convenience and security an azimuth point was established in the ALSG area of Vung Tau Peninsula and 8 arcs on Polaris observed to the Radar Tower Light, this being a convenient RO for night observations.

At NUI DAT 8 arcs of sun azimuth were observed, (4 arcs AM and 4 arcs PM) on the line NUI DAT to LIGHTHOUSE.

At THANH a satellite station named THANH MINOR was established in a position to give intervisibility to VUNG TAU LIGHTHOUSE and CAP ST JACQUES. THANH MINOR was treated as an independent station and not as an eccentric to THANH.

At VUNG TAU LIGHTHOUSE an eccentric station was established and measurements taken to determine the relationship of the eccentric to the centre of the lighthouse. All angles and distance measurements at VUNG TAU LIGHTHOUSE were reduced to centre.

COMPUTATIONS

1. A preliminary computation of Lat, Long and Reverse Azimuth carried the true azimuth from the azimuth point to the line VUNG TAU LIGHTHOUSE to CAP ST JACQUES. Grid convergence was applied at LIGHTHOUSE.
2. The UTM coordinates of CAP ST JACQUES were computed from VUNG TAU LIGHTHOUSE and the comparison obtained between the computed and the listed values. The computed values carried from LIGHTHOUSE were adopted.
3. The triangle LIGHTHOUSE – CAP ST JACQUES – THANH MINOR was solved

to give the unmeasured side and angle. The triangle was adjusted angularly.. The sides were adjusted to maintain the sine-rule relationship with the adjusted angles.

4. The UTM coordinates of THANH MINOR were computed from CAP ST JACQUES and LIGHTHOUSE by UTM bearing and distance computation.

5. The coordinates of THANH were computed from THAN MINOR and comparisons obtained between the listed values and the values carried from LIGHTHOUSE.

6. The triangle NUI DAT- CAP ST JACQUES-LIGHTHOUSE was closed angularly.

7. The UTM coordinates of NUI DAT were computed from both LIGHTHOUSE and CAP ST JACQUES by UTM bearing and distance computation using adjusted angles and measured distances. (Misclose 0.32 metres easting: 0.01 metres northing).

8. The UTM coordinates of NUI DAT were converted to geographical values. The sun azimuth of the line NUI DAT to LIGHTHOUSE was converted to a grid bearing and the comparison obtained with the Grid Bearing carried through from LIGHTHOUSE.

**NUI DAT CONNEXION
SUMMARY OF OBSERVATIONS**

ANNEX B-2

SUMMARY OF OBSERVATIONS

(Transcribed from the hand-lettered original)

DISTANCES MEASURED

VUNG TAU LIGHTHOUSE

– NUI DAT – 20 fine readings -	29,087.16 M (Ecce Corr applied)
CAP ST JACQUES – 20 fine readings	1,104.38,M (Ecce Corr applied)

CAP ST JACQUES

– NUI DAT – 10 fine readings	29,420.83M
THANH MINOR – 10 fine readings	9,394.38M
AZIMUTH POINT – 5 fine readings	2.672.9 M
THANH MINOR – THANH – chained	38.466M

DIRECTIONS OBSERVED

AT LIGHTHOUSE ECCE	TO	NUI DAT	00° 00' 00".0 – 8 arcs
(reduced to NuiDat as common RO)		CAP ST JACQUES	106° 28' 49".4 – 8 arcs Ra 8".5
		THANH MINOR	00° 56' 33".2 – 4 arcs Ra 7".0
AT CAP ST JACQUES	TO	NUI DAT	00° 00' 00".0 – 8 arcs
(reduced to Nui Dat as common RO)		AZ MK	02° 39' 34".4 – 8 arcs Ra 13".0
		LIGHTHOUSE ECCE	288° 31' 46".4 – 8 arcs Ra 6".5
		LIGHTHOUSE	288° 36' 37".5 – 8 arcs
		THANH MINOR	356° 31' 53".1 – 8 arcs Ra 6".0
AT NUI DAT	TO	CAP ST JACQUES	00° 00' 00".0 – 8 arcs
		LIGHTHOUSE	02° 03' 42".9 – 8 arcs Ra 7".5
AT THANH MINOR	TO	LIGHTHOUSE	00° 00' 00".0 – 4 arcs
		THANH	235° 04' 43".2 – 4 arcs Ra 5".0
AT VUNG TAU AZ PT	TO	CAP ST JACQUES	00° 00' 00".0 – 8 arcs
		RADAR TR LIGHT	82° 18' 31".5 – 8 arcs Ra 4".5

SUMMARY OF CLOSURES

POSITION		E	N
THANH –	LISTED COORDS	732,903.58	1150,334.82
	COMPUTED COORDS	732,896.47	1150,341.36
	(From Lighthouse)		
	Difference	+7.11M	-6.54m
CAP ST JACQUES –	LISTED COORDS	728,683.83	1141,928.19
	COMPUTED COORDS	728,658.74	1141,933.86
	(From lighthouse)		
	Difference	+25.09M	-5.67M

NOTE: LISTED VALUE OF NOUVEAU PHARE CAP ST JACQUES (VUNG TAU LIGHTHOUSE) 1ST ORDER STATION ADOPTED AS DATUM FOR THEATRE GRID. VALUES AS FOLLOWS:

	E	N
	727,928.5	1142,762.8
NUI DAT – ADOPTED VALUE	743,380.36	1167,418.42
	LONG 07° 13' 27".704E	LAT 10° 33' 13".724 N
GRID CONVERGENCE	00 ° 24' 27".41	

TRIANGLE CLOSURES

THANH MINOR TRIANGLE: ANGLE AT –

LIGHTHOUSE	105° 34' 31".5 (Observed)
CAP ST JACQUES	67° 55' 15".6 (Observed)
THANH MINOR	06° 30' 07".8 (Calc from sides)
TOTAL	179° 59' 54".9
MISCLOSE	- 05".1

NUI DAT TRIANGLE: ANGLE AT –

LIGHTHOUSE	106° 32' 52".7
CAP ST JACQUES	71° 23' 22".5
NUI DAT	02° 03' 42".9
TOTAL	179° 59' 58".1
MISCLOSE	- 01".9

Compiled RF Skitch Capt
Checked Cpl J Roberts