

Flight Maps and Charts

All Flights

**Mission Operations Directorate
Operations Division**

**Generic, Rev G
April 11, 2005**

NOTE

For STS-114 and subsequent flights

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



United Space Alliance

Verify this is the correct version for the pending operation (training, simulation or flight).
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FLIGHT MAPS AND CHARTS

GENERIC, REV G (Apr 11, 2005)

PCN-3 (Feb 16, 2007) Sheet 1 of 1

List of Implemented Change Requests (482s):

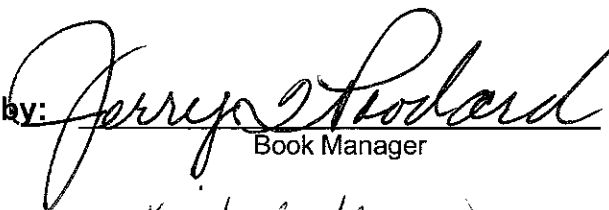
MAPS-284
MAPS-286**NOTE**

For STS-117 and subsequent flights

Incorporate the following:

1. Replace v thru viii
2. Replace ACY-1 and ACY-2
3. Replace AML-1 and AML-2
4. Replace BEN-1 and BEN-2
5. Replace BYD-1 and BYD-2
6. Replace DOV-1 and DOV-2
7. Replace ESN-1 and ESN-2
8. Replace FMH-A thru FMH-D
9. Replace FMI-1 and FMI-2
10. Replace FOK-1 and FOK-2
11. Replace GSA-1 and GSA-2
12. Replace IKF-1 and IKF-2
13. Replace JTY-1 and JTY-2
14. Replace KSC-1 and KSC-2
15. Replace NTU-1 and NTU-2
16. Replace RCA-1 and RCA-2
17. Replace YHZ-1 thru YHZ-4
18. Replace YNN-1 and YNN-2
19. Replace ZZA-1 and ZZA-2

Prepared by:


Book Manager

Approved by:


Manager, Shuttle Procedures Management

Accepted by:


FDF Manager

Encl: 44 pages

File this PCN immediately behind the front cover as a permanent record

FLIGHT MAPS AND CHARTS

GENERIC, REV G (Apr 11, 2005)

PCN-2 (Dec 16, 2005) Sheet 1 of 1

List of Implemented Change Requests (482s):

MAPS-279

MAPS-280 (P)

P – Partial

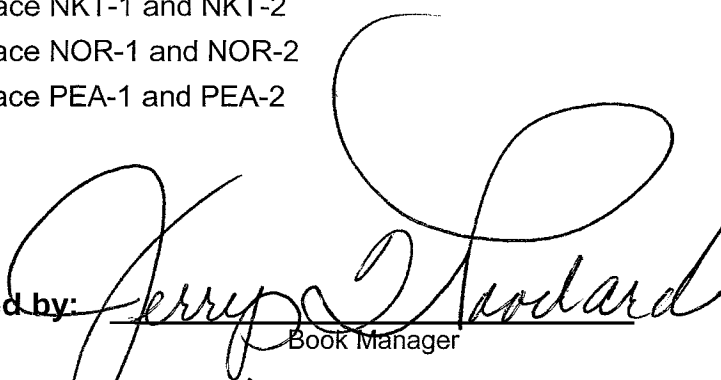
NOTE

For STS-121 and subsequent flights


Incorporate the following:

1. On signature page, change revision from F to G and add (P&I) after or near page code
2. Replace v thru x
3. Replace 3-v and 3-vi
4. Replace BDA-1 and BDA-2
5. Replace BEN-1 and BEN-2
6. Replace EDW-1 thru EDW-4
7. Replace FFA-1 and FFA-2
8. Replace GSA-1 and GSA-2
9. Replace HAW-1 and HAW-2
10. Replace HNL-1 and HNL-2
11. Replace IKF-1 and IKF-2
12. Replace ILM-1 and ILM-2
13. Replace KBO-1 and KBO-2
14. Replace KIN-1 and KIN-2
15. Replace NKT-1 and NKT-2
16. Replace NOR-1 and NOR-2
17. Replace PEA-1 and PEA-2

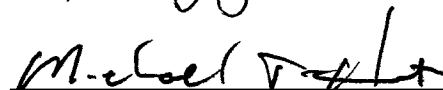
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FLIGHT MAPS AND CHARTS

GENERIC, REV G (Apr 11, 2005)

PCN-1 (Apr 28, 2005) Sheet 1 of 1

List of Implemented Change Requests (482s):


MAPS-276
MAPS-277**NOTE**

For STS-114 and subsequent flights

Incorporate the following:

1. Replace v thru viii
2. Replace ESN-1 and ESN-2
3. Replace MYR-A thru MYR-D (4 pages)
4. Replace 4-3 thru 4-10

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Book Manager

Approved by:


Manager, Shuttle Procedures Management

Accepted by:


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MISSION OPERATIONS DIRECTORATE

FLIGHT MAPS AND CHARTS

GENERIC, REVISION G

April 11, 2005

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Incorporates the following:	
482#:	MAPS-273 MAPS-274A MAPS-275

AREAS OF TECHNICAL RESPONSIBILITY

Book Manager	DO353/J. Woodard	281-483-9685
Alternate Book Manager	DO353/A. Blaylock	281-483-1861

NOTES

The Maps and Charts document contains the following six items that are flown separately:

- Mercator and polar projection Star Charts (section 1)
- Mercator projection Earth Map with Earth observation areas and orbit overlay (section 2)
- Landing Site Videotape (section 2)
- Earth Observations Manual (section 2)
- World Atlas (section 2)
- Landing Site Charts (sections 3 and 4)

Page numbers assigned to sections 1 and 2 are for the convenience of ground users and do not appear in flight configuration.

The crew Landing Site Charts (sections 3 and 4) are organized as follows:

- General Information – Summary, Chart Legend, and World Map showing all sites
- Detailed Site Information – Runway and instrumentation data, area topographical map, aim point drawing, and aerial photo if available
- Postlanding Information

Originals for most maps and charts in this book were provided by the National Geospatial-Intelligence Agency (previously National Imagery and Mapping Agency).

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FLIGHT MAPS AND CHARTS

LIST OF EFFECTIVE PAGES

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REV G 04/11/05

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PCN-2 12/16/05

PCN-3 02/16/07

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AMB-4.....	*	ALL/GEN G	DOV-B.....	ALL/GEN G

* – Omit from flight book

DOV-C.....	ALL/GEN G	GDV-2.....	ALL/GEN G
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KKI-4	ALL/GEN G	NKT-5	ALL/GEN G
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KSC-A	ALL/GEN G	NKT-D	ALL/GEN G
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KSC-C	ALL/GEN G	NOR-2	ALL/GEN G
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LAJ-2	ALL/GEN G	NOR-5	ALL/GEN G
LAJ-3	ALL/GEN G	NOR-6	ALL/GEN G
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LNK-1	ALL/GEN G	NTU-2	ALL/GEN G
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LNK-4	ALL/GEN G	NTU-A	ALL/GEN G
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LRB-3	ALL/GEN G	NTU-D	ALL/GEN G
LRB-4	ALL/GEN G	NTU-E	ALL/GEN G
LRB-A	ALL/GEN G	NTU-F	ALL/GEN G
LRB-B	ALL/GEN G	NZC-1	ALL/GEN G
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MRN-2	ALL/GEN G	PSM-3	ALL/GEN G
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MRN-4	ALL/GEN G	PSM-A	ALL/GEN G
MRN-A	ALL/GEN G	PSM-B	ALL/GEN G
MRN-B	ALL/GEN G	PSM-C	ALL/GEN G
MRN-C	ALL/GEN G	PSM-D	ALL/GEN G
MRN-D	ALL/GEN G	PTN-1	ALL/GEN G
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MWH-1	ALL/GEN G	RCA-4	ALL/GEN G
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‡ – Flight book only

† – Landing Site Data Chart from Entry C/L

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Koln/Bonn, Germany	<input type="checkbox"/> KBO-1
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– High inclination site

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POSTLANDING PROCEDURES FOR EMERGENCY
 AIRFIELD LANDING

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* – Previous name was Moses Lake

– High inclination site

STAR CHARTS

- 1.1 The flight version of Star Charts is fabricated with polar projections (page 1-4) on the back of the rectangular projection (page 1-3). Flight charts are produced with white overprint on a black background. A photograph of Star Charts in flight configuration is shown on page 1-2.
- 1.2 The rectangular chart is a Mean of 1950 (M50) mercator projection with coverage extending from the equator to 65° north and 70° south declination. Each polar projection covers the entire hemisphere. Both right ascension and declination are expressed in degrees. The charts depict 1466 stars, ranging in magnitude from -1 to +4. The first 50 nav stars are circled, named, and numbered, and the second 50 nav stars are circled and numbered. The ecliptic plane is indicated on the charts, as are the Milky Way and the large and small Magellanic clouds.
- 1.3 The baseline rectangular Star Chart is annotated for each specific flight by the addition of the Sun and planets (Venus, Mars, Jupiter, and Saturn) in their launch date positions. Moon symbols that show the various phases (new, first quarter, full, last quarter) are added for each day of the mission. Moon symbols are identified by calendar day starting at GMT.

STAR
CHARTS

STAR
CHARTS

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STAR
CHARTS

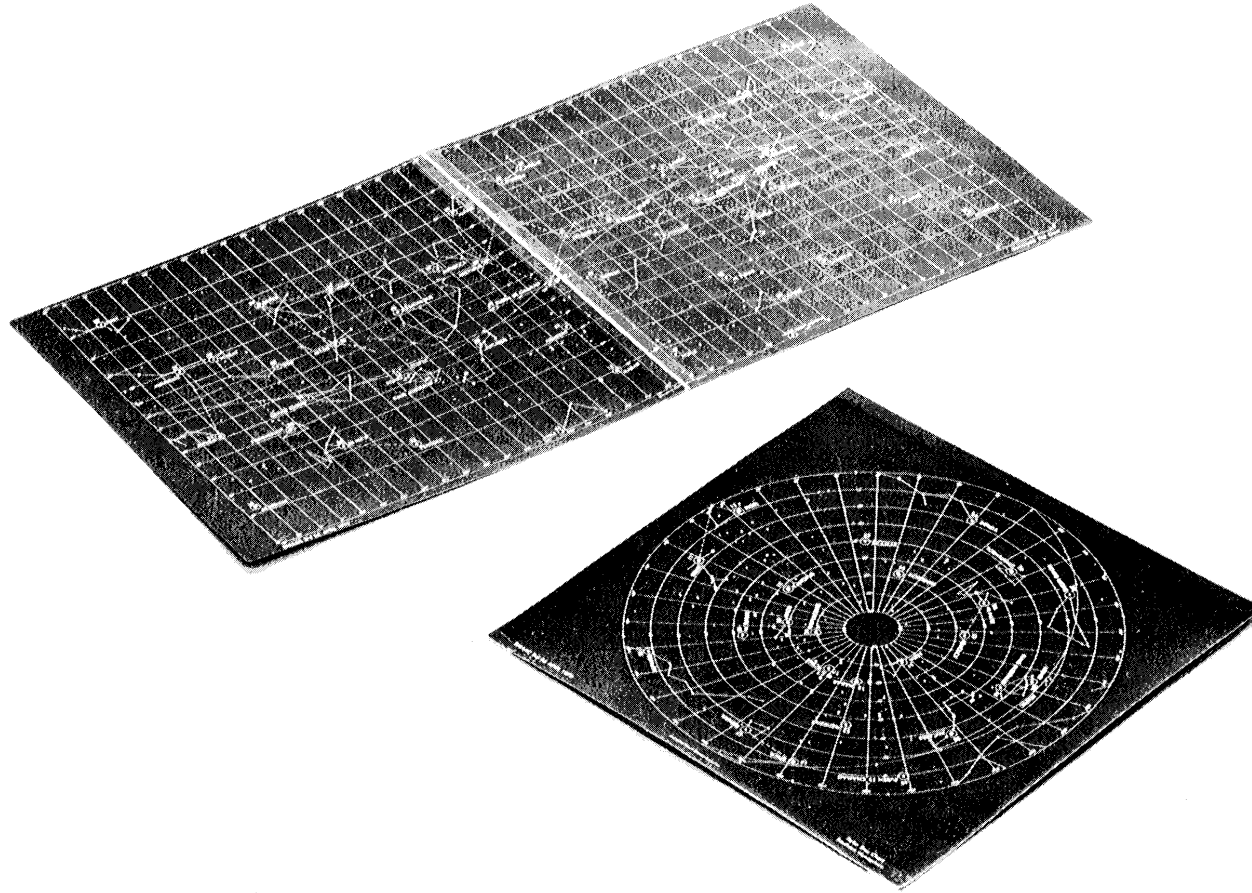


Figure 1-1.- Flight configuration Star Charts

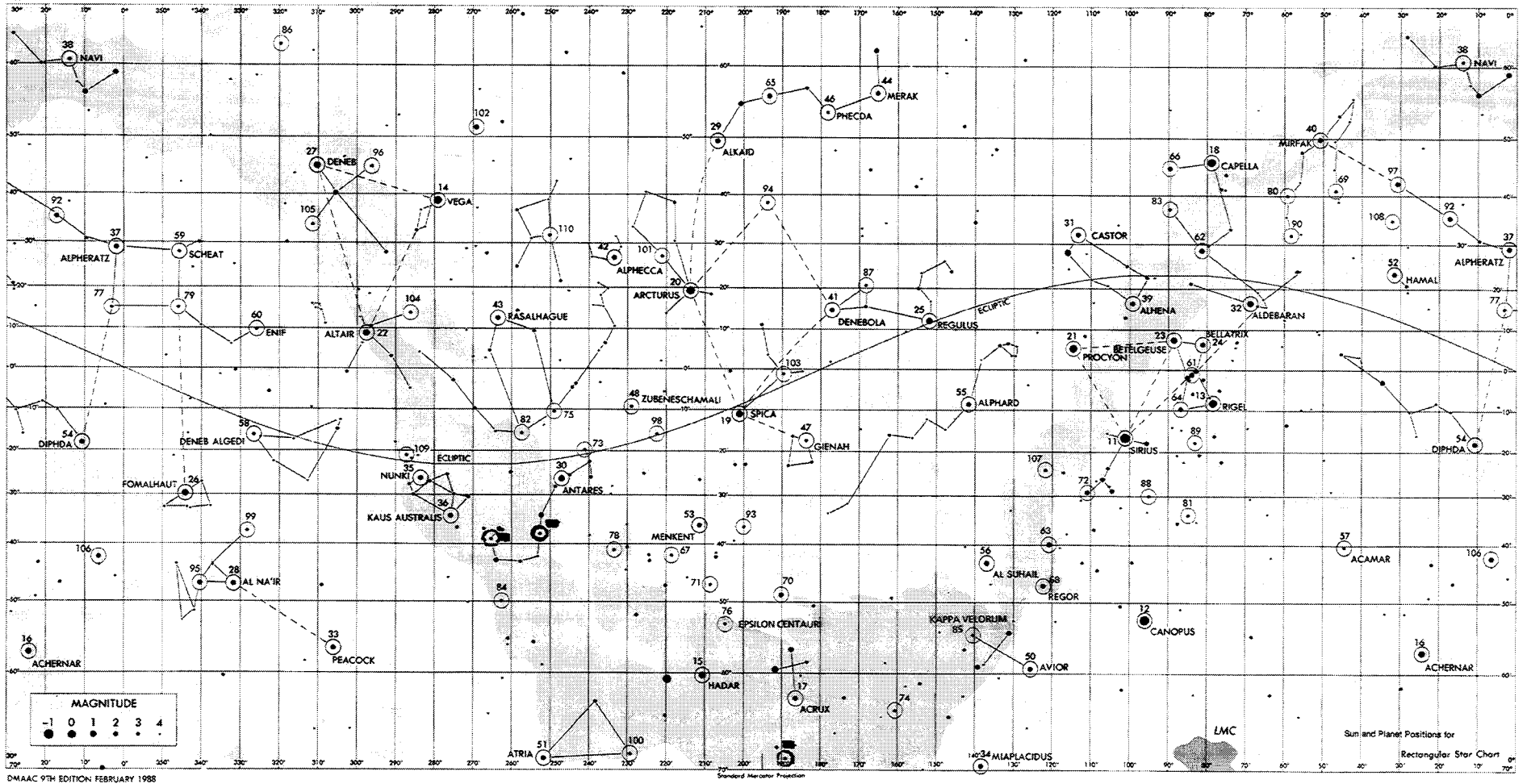
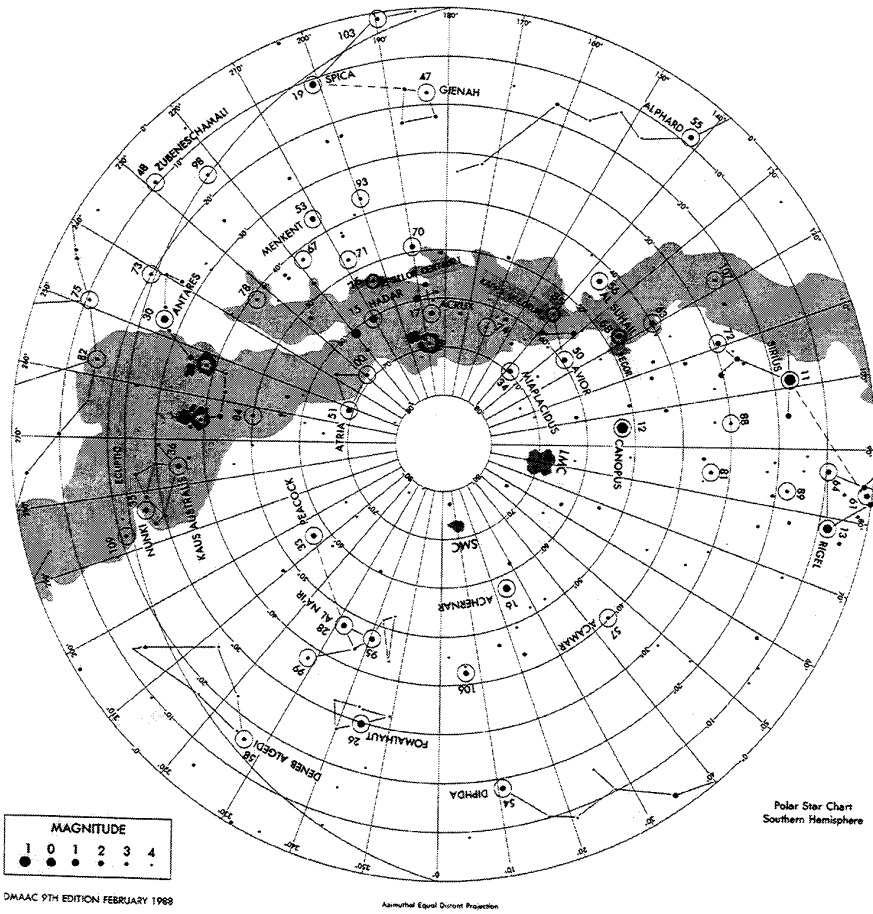
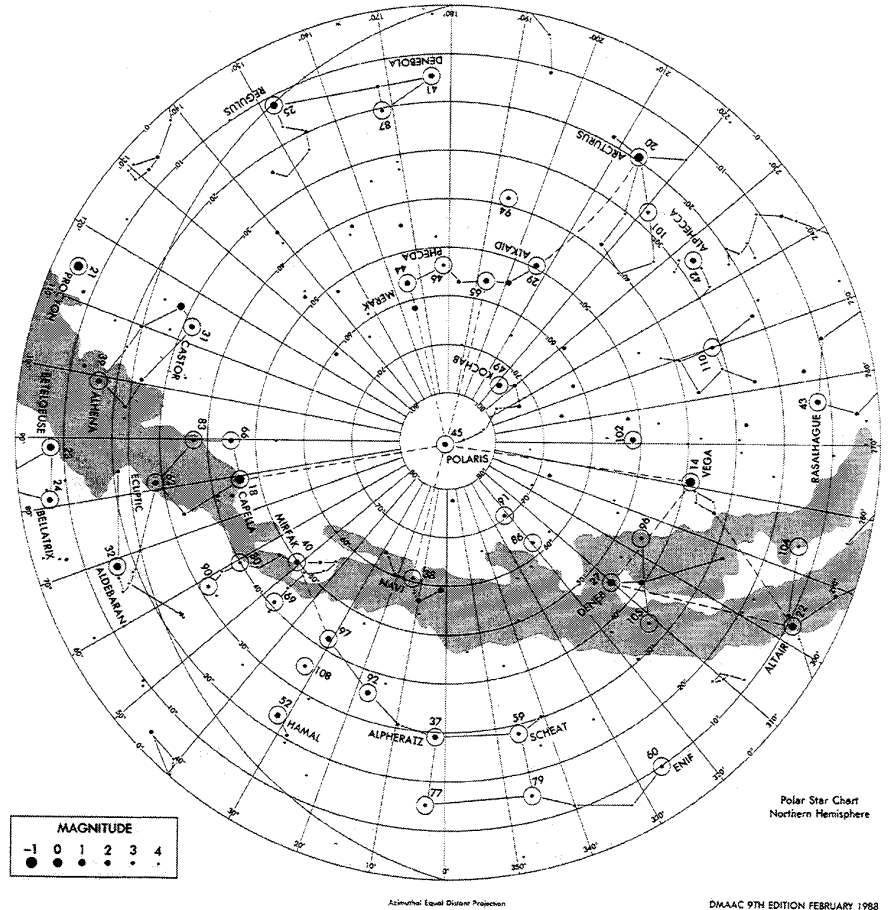


Figure 1-2.- Typical Star Chart (reverse angle)



Polar Star Chart Southern Hemisphere



Polar Star Chart Northern Hemisphere

Figure 1-3.- Star Chart polar projections

ORBIT MAP

- 2.1
- A. The flight version Orbit Map is produced in color at a scale of 1:52 million. The flight map is mounted in a frame with a groundtrack overlay. The map shown on page 2-4 is a reduced copy. An Orbit Map with overlay (flight configuration) is shown on page 2-5.
 - B. The overlay shows the groundtrack for three consecutive orbits and can be set to any desired ascending node. The overlay has time ticks at 1-min intervals along the groundtrack, with elapsed time callouts every 10 min. Elapsed time is measured from the initial ascending node. The overlay includes a map update block for recording MET and longitude of node for any given orbit.
 - C. The flight Orbit Map shows station coverage of STDN sites and TDRSS for the primary orbital altitude of each mission. Also shown are 750-nmi radius crossrange circles for shuttle landing sites and the South Atlantic Anomaly at the primary orbital altitude of each mission.
 - D. The baseline Orbit Map is annotated for each mission by adding photo targets, visual observation sites, or other areas of scientific or technical interest. When applicable, these subjects are documented as tabular listings and included with the flight crew World Atlas.

ORBIT
MAP

ORBIT
MAP

EARTH OBSERVATIONS MANUAL

- 2.2
- The Flight Science Support Office produces an Earth Observations Preflight Training Manual for each flight. It contains text, illustrations, and photos for information on mission overview, photographic techniques, Earth features, and sites of interest. The manual is used for flight-specific crew training and flown as mission weight and space constraints allow. An optional PGSC diskette containing the text of the manual is occasionally flown in place of the hard copy.

ORBIT
MAP

ORBIT
MAP

ORBIT
MAP

LANDING SITE FDF CD

2.3 The Landing Site FDF CD contains footage of approaches to various runways at several landing sites. The crew can view the CD on the orbiter PGSC as a visual reference tool in preparation for landing.

The Landing Site Mini DV also contains the same footage of approaches to various runways as the FDF CD. Mini DV consists of two cassettes; Volume I contains Kennedy Space Center landing sites. Volume II contains Edwards AFB and White Sands (Northrup) landing sites.

The following landing site video files are available to the crew.

Directory ...\\Landing Site Video

78ksc33_.mpg	63,713,284	1/21/1998	5:21:00	PM
81ksc33_.mpg	55,799,812	1/21/1998	6:05:46	PM
84ksc33_.mpg	56,684,548	1/21/1998	6:33:30	PM
86ksc15_.mpg	61,577,220	1/21/1998	7:03:38	PM
94ksc33_.mpg	57,972,740	1/21/1998	7:32:28	PM
AUTORUN.INF	104	3/23/2001	6:55:36	PM
EDW04a_.mpg	14,491,652	1/26/1998	3:54:42	PM
EDW15a_.mpg	19,644,420	1/26/1998	4:04:56	PM
EDW22a_.mpg	25,899,012	1/26/1998	4:18:28	PM
EDW33a_.mpg	16,846,852	1/26/1998	4:27:26	PM
edwards_.mpg	49,471,492	1/27/1998	3:14:22	PM
FDF.ICO	12,862	11/2/1998	5:36:58	PM
index.doc	39,936	3/23/2001	6:49:08	PM
index.htm	61,498	3/23/2001	6:50:06	PM
ksc15a_.mpg	17,547,268	1/26/1998	4:36:38	PM
ksc15b_.mpg	20,994,052	1/26/1998	4:47:36	PM
ksc33a_.mpg	24,502,276	1/26/1998	4:59:56	PM
ksc33b_.mpg	18,061,316	1/27/1998	12:28:48	PM
nor17a_.mpg	24,612,868	1/27/1998	12:40:53	PM
nor17b_.mpg	15,800,324	1/27/1998	12:48:42	PM
nor23a_.mpg	13,939,692	1/27/1998	12:55:38	PM
nor35a_.mpg	13,279,236	1/27/1998	1:02:14	PM
northrup_.mpg	32,651,268	1/27/1998	3:30:28	PM
SHELEXEC.EXE	18,944	4/29/1999	6:04:00	AM

Directory ...\\Landing Site Video\\Runway Data

Edwards-Map_g_e.pdf
Kennedy-Maps_g_e.pdf
Northrup-Maps_g_e.pdf

Links are provided to the individual videos through the following index:

NASA Space Shuttle Orbiter Landing Site Refresher

Runway Data: [Kennedy](#) [Edwards](#) [Northrup](#)

Video

Table 2-1.- Contents of file titled Index.htm

Mission/Vehicle	Turn	Glidepath	Aim point
KSC 15			
STS-86	--	-- degree	--
STA	Left	17 degree	Close
STA	Right	19 degree	Close
KSC 33			
STS-78	--	-- degree	--
STS-81	--	-- degree	--
STS-84	--	-- degree	--
STS-94	--	-- degree	--
STA	Left	19 degree	Close
STA	Right	19 degree	Nominal
EDW 04			
STA	Left	19 degree	Nominal
EDW 15			
STA	Left	17 degree	Nominal
EDW 22			
STA	Left	17 degree	Nominal
EDW 33			
STA	Right	19 degree	Close
NOR 17			
STA	Left	17 degree	Nominal
STA	Left	19 degree	Close
NOR 23			
STA	Left	19 degree	Nominal
NOR 35			
STA	Left	19 degree	Nominal

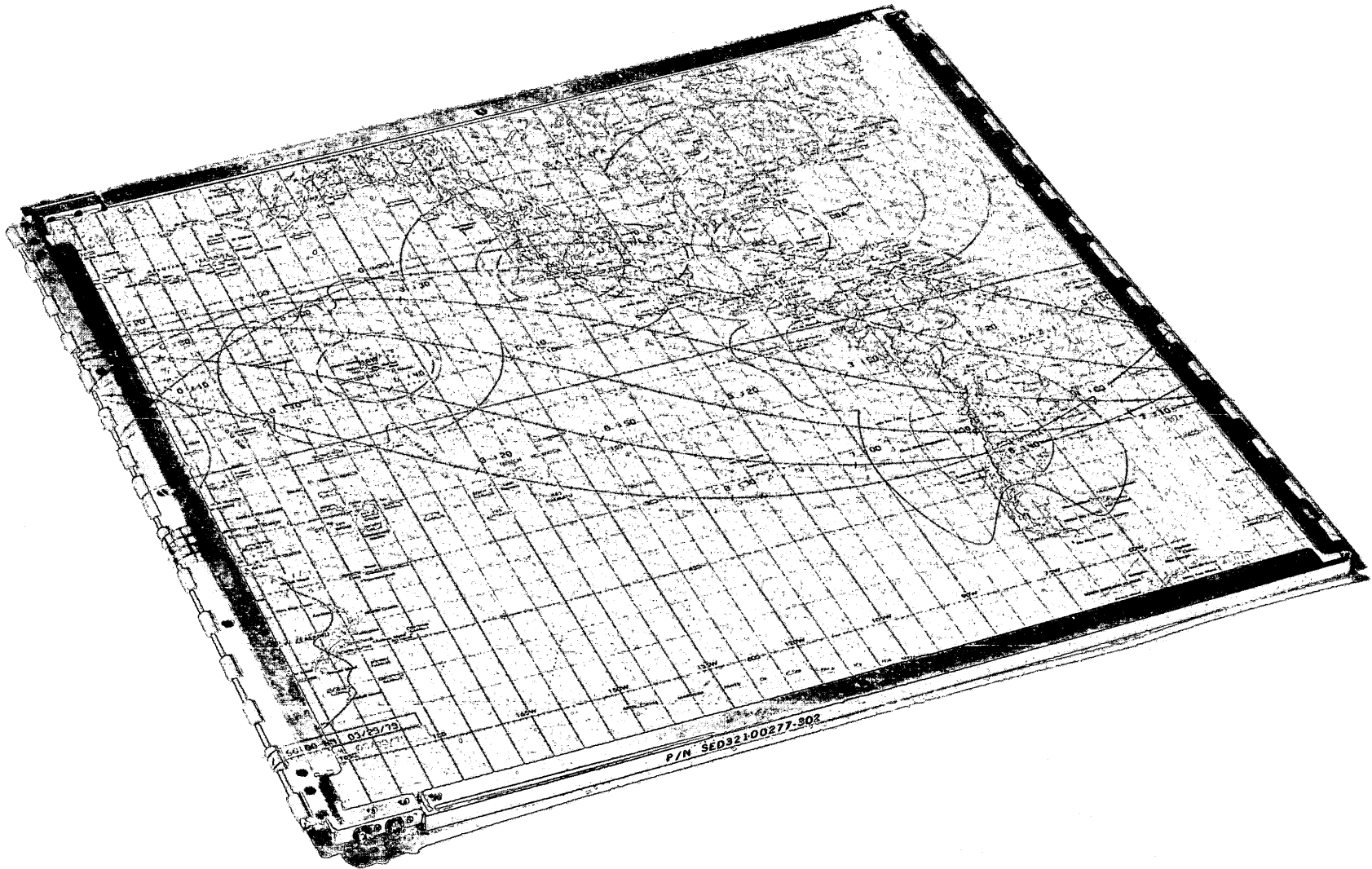
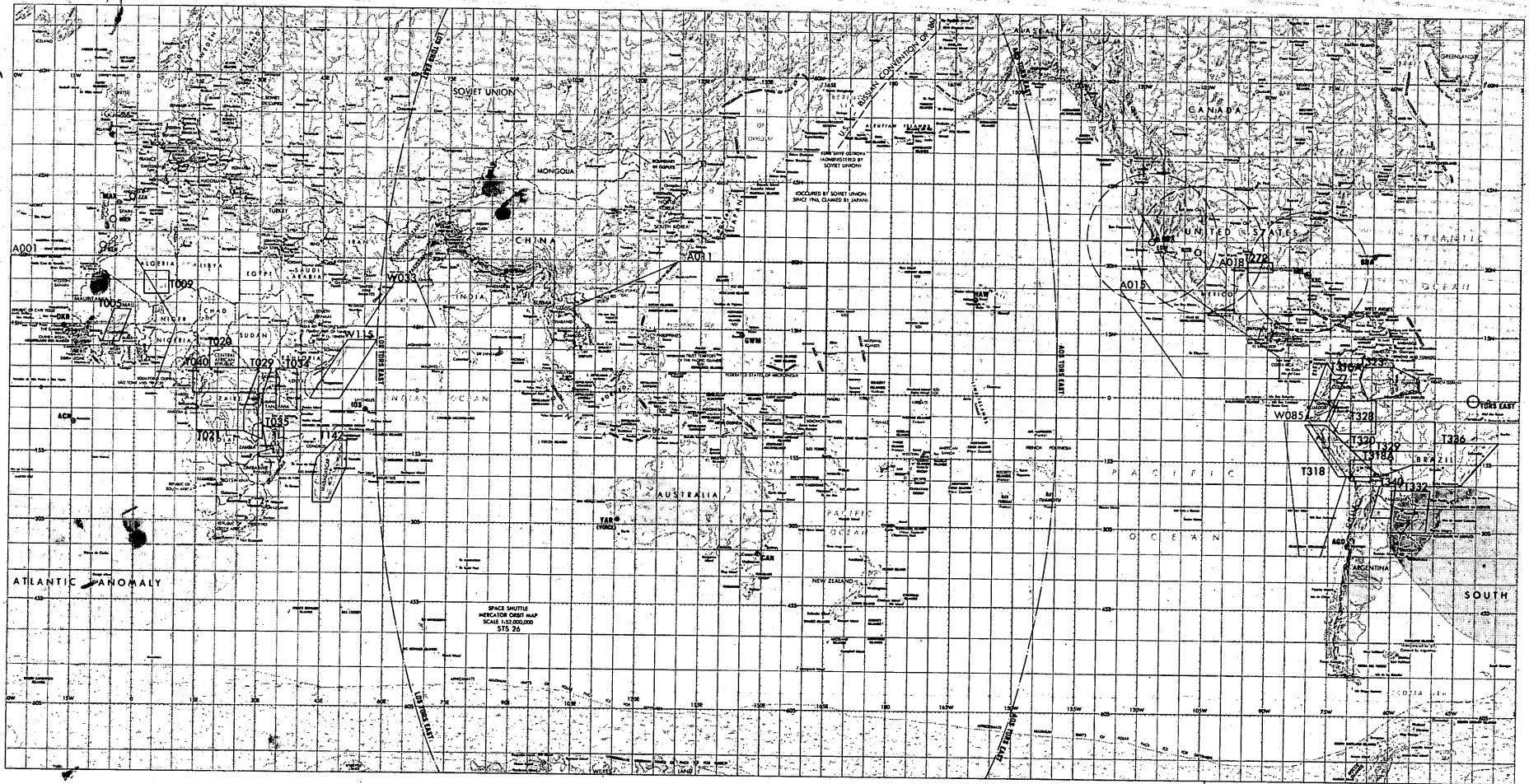


Figure 2-1.- Flight configuration Orbit Map



PREPARED AND PUBLISHED BY THE DEFENSE MAPPING AGENCY AERONAUTICS CENTER, 2900 SOUTH SECOND STREET, ST. LOUIS, MISSOURI, 63118-2099 FOR THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOTE: The representation of boundaries is not necessarily authoritative. Definition of water boundaries presented with this map have been changed after the last edition. The United States Government is not authorized to reproduce or use the information for any purpose, including copying, without the express written permission of the Defense Mapping Agency.

LEGEND
 International boundaries
 Coastal lines
 Other lines
 Airfields
 Coverage limits for 700 n.m.
 South Atlantic Anomaly for 140 n.m. altitude
 © 1980

MERCATOR PROJECTION
 SCALE 1:50,000,000 AT THE EQUATOR

TRACING AND DATA RELAY SATELLITE SYSTEM (TDRSS)
 AOL I/Os
 Subsatellite point
 © 1980

SPACEFLIGHT TRACKING AND DATA NETWORK (STDN)
 Antenna location symbols and call letters
 Tracking beam (140 n.m. altitude)
 © 1980

EARTH OBSERVATION SITES LEGEND
 Formatted Site
 Atmospheric Site
 Oceanographic Site
 © 1980

SPACE SHUTTLE
 MERCATOR ORBIT MAP

Figure 2-2.- Orbit Map with overlay (flight configuration)

WORLD ATLAS

- 2.4 The flight version of the World Atlas (Space Shuttle Physiographic Atlas) is produced in color and provides worldwide coverage at a scale of 1:10 million. Its table of contents is shown on page 2-7.

CONTENTS

PAGE	GEOGRAPHIC COVERAGE	SOURCE MAP/CHART
1	Canada, Hudson Bay	GNC-2
2	United States	GNC-2
3	Eastern Canada, N. E. United States, and Hudson Bay	GNC-3
4	Southern Greenland, Iceland, and Ireland	GNC-3
5	Western Europe and W. Mediterranean Sea	GNC-4
6	Europe, Western Russia, and Turkey	GNC-4
7	Central Russia, Afghanistan, and N. W. China	GNC-5
8	Eastern Russia and Mongolia	GNC-5
9	Eastern Russia, Japan, and Manchuria	GNC-5
10	Alaska, Aleutian Islands, and N. E. Russia	GNC-6
11	Mexico and Baja California	GNC-8
12	Gulf of Mexico, Central America, and Cuba	GNC-9
13	Northern South America and Caribbean Sea	GNC-9
14	North Africa - West, Cape Verde, and Canary Islands	GNC-10
15	North Africa - Central	GNC-11
16	North Africa - East and Red Sea	GNC-11
17	Middle East, Persian Gulf, and Afghanistan	GNC-12
18	Arabian Sea and Gulf of Aden	GNC-12
19	India, Tibet Plateau, and Himalayan Mts.	GNC-12
20	China, Southeast Asia, and South China Sea	GNC-13
21	Japan, Korea, and Philippine Islands	GNC-13
22	Caroline and Mariana Islands	GNC-7
23	Gilbert and Marshall Islands	GNC-7
24	Hawaiian and Line Islands	GNC-7
25	Indonesia, S. E. Asia, and South China Sea	1142 Series
26	New Guinea and Northern Australia	1142 Series
26A	New Guinea, Bismark Archipelago, and Coral Sea	1142 Series
27	Australia and Timor Island	GNC-14
28	Australia, Tasmania, and Coral Sea	GNC-14
29	New Hebrides Islands and Fiji Islands	GNC-20
30	Polynesian Islands, Samoa and Cook Islands	GNC-20
31	Polynesian Islands and Society Islands	GNC-19
32	Polynesian Islands	GNC-19
33	Western South America	GNC-18
34	Eastern South America	GNC-18
35	South Atlantic Ocean	GNC-17
36	South Atlantic Ocean, Ascension Island, and St. Helena Island	GNC-17
37	Southwestern Africa	GNC-16
38	Southeastern Africa and Madagascar	GNC-16
39	Madagascar, Seychelles Islands, and Reunion Island	GNC-16
40	Indian Ocean and Chagos Archipelago	GNC-15
41	New Zealand, Tasmania, and South Pacific Islands	GNC-21
42	Southern South America and Falkland Islands	GNC-24
43	South Indian Ocean, Prince Edward and Crozet Islands	GNC-22
44	South Pole and Antarctic Peninsula	GNC-26
45	South Pole	GNC-26
46	North Pole, Northern Russia, and Beaufort Sea	GNC-1
47	North Pole, Greenland, Iceland, and Norway	GNC-1
48	Major Ocean Currents	

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LANDING SITE CHART SUMMARY

- 3.1 Landing Site Charts contain topographical information on designated shuttle landing sites. Flight versions are produced in color at the same size and scale as shown in this document.

There are two types of charts for each site:

- Area Chart - scale 1:2 million
- Runway Chart - scale 1:62,5000

One set of charts is shown for each landing site, and a site data sheet is included with each chart set.

- 3.2 Each chart set contains the following information.

Data Sheet

- Site elevation
- Table identifier*
- Runway length, width, and overruns
- Channel number and identifier for PRI and SEC TACAN selections
- Cochannel interference for each TACAN. Values listed indicate orbiter approach directions and altitudes above which TACAN interference may be caused by nearby TACAN stations using the same channel as the orbiter
- MLS channel numbers for appropriate runways
- Runways equipped with PAPI lighting
- Runways equipped with Ball Bar lighting
- UHF availability

Area Chart

- Range circles at 100-nmi intervals with intermediate ticks at 50-nmi intervals. Range is 'yardstick' distance to center of site
- Magnetic heading lines at 30° intervals with intermediate ticks at 10° intervals
- Area TACAN stations carried in onboard software tables
Note: No TACAN symbol used if station located at airfield
- All runways in the area at least 10,000 ft in length
- Airfield coordinates to nearest minute

Runway Chart

- Aim points
- Runway dimensions

- 3.3 To supplement the charts, oblique photographs are included where available. These photos approximate the view leaving the HAC on the steep glide slope.

- 3.4 Section 4 contains crew procedures for postlanding at emergency airfields. A list of phone numbers is included only in flight books.

*List of landing sites and TACAN data carried in software for use in contingency deorbits and landing

LANDING
SITES

LANDING
SITES

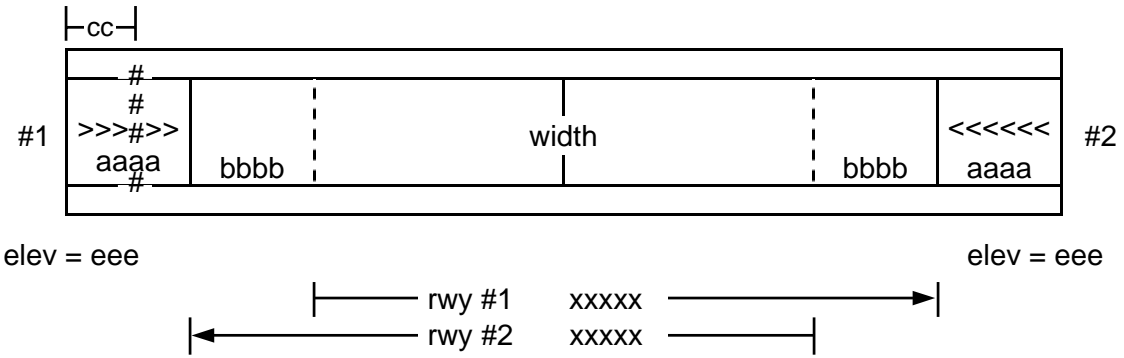
LANDING
SITES

LANDING
SITES

LANDING
SITES

3.5 Runway information is presented as follows:

LANDING
SITES



Where

- #1, #2 = Runway number
- aaaa = Length of overrun
- bbbb = Length of shuttle artificially displaced threshold (if reqd)

- cc = Distance of barrier from end of usable surface (overrun) (if reqd)
- eee = Runway elevation at each end
- xxxxx = Length of each runway

NOTE

Length measured from shuttle threshold (actual or displaced) to end of rwy (with overrun to spare)

= Shuttle barrier | >>>>> | = existing overrun/underrun

- - - = Shuttle displaced threshold

LANDING
SITES

LANDING
SITES

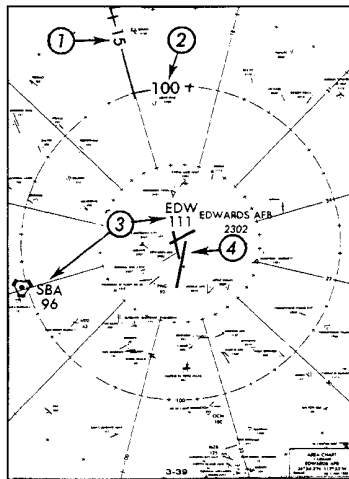
LANDING
SITES

LANDING
SITES

OVERPRINT DATA LEGEND

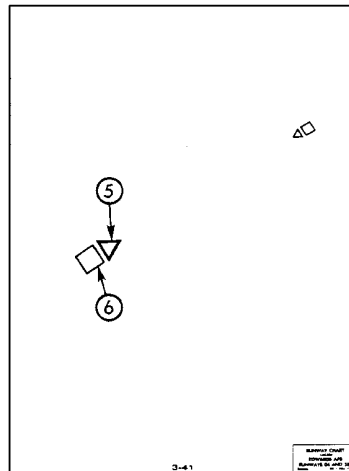
LANDING SITE CHARTS

AREA CHART
Scale 1:2,000,000



- ① Magnetic Heading to Land Site
- ② Distance to Landing Site (nautical miles)
- ③ NAVAIDS
(Location symbols are omitted when the antenna is located at the landing site)
- ④ Airfields

RUNWAY CHART
Scale 1:62,500

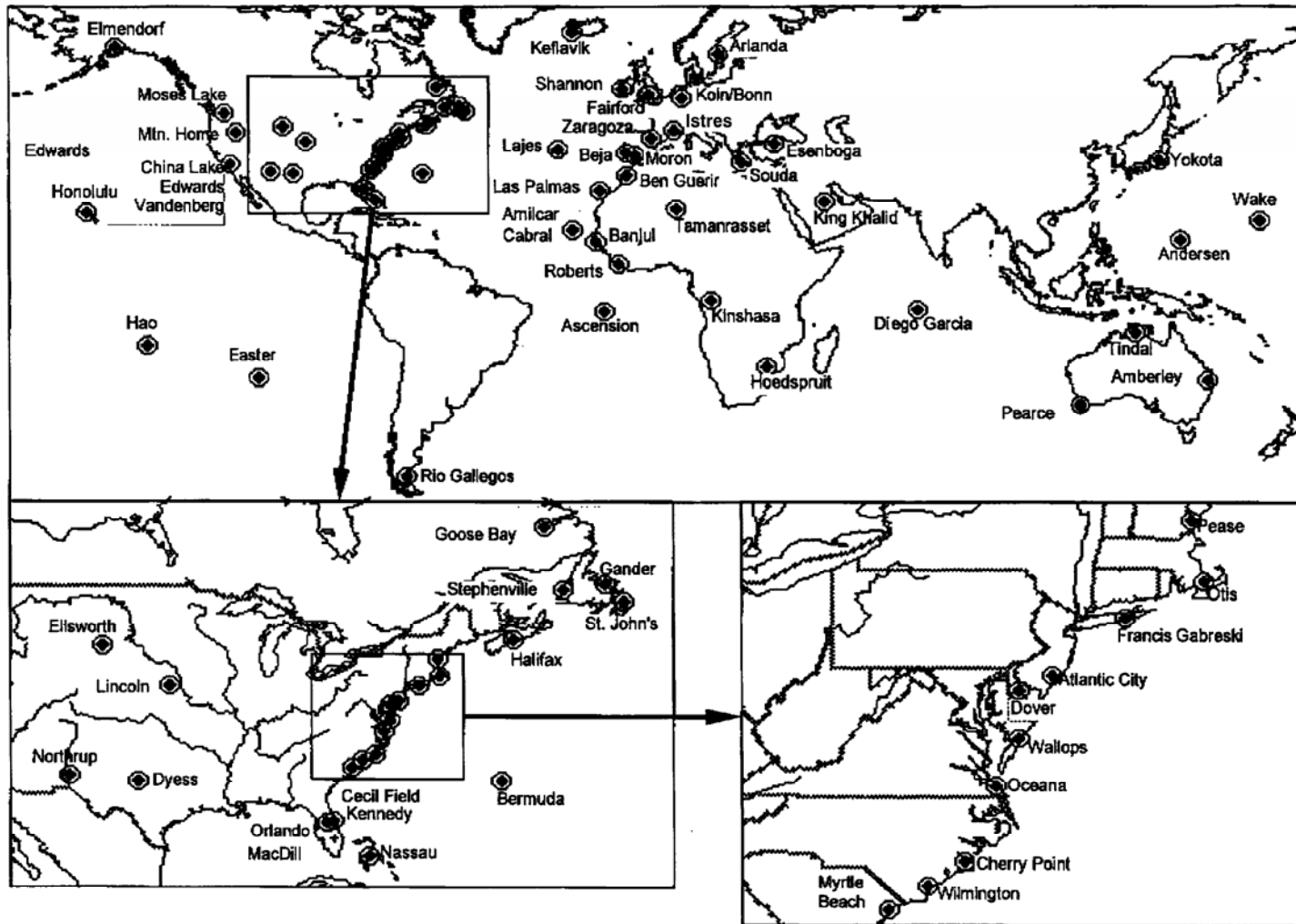


- ⑤ Highwind Aim Point
- ⑥ Nominal Aim Point

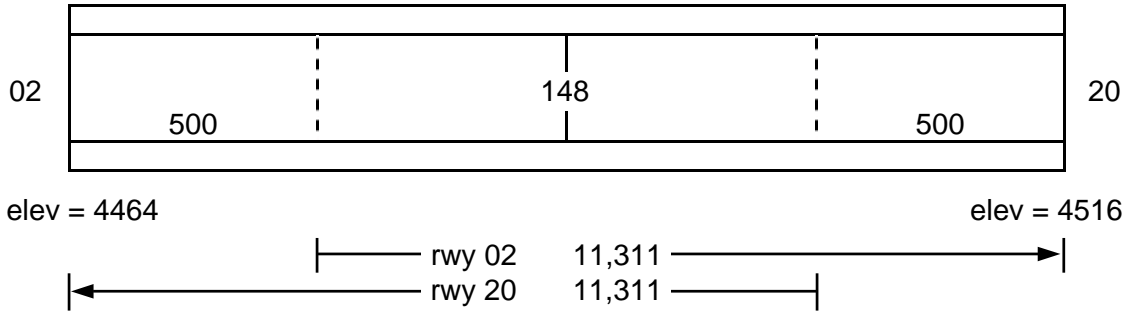
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LEGEND
LANDING SITE CHARTS
DMAAC ED. 3 Dec. 1988

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SPACE SHUTTLE PROGRAM APPROVED LANDING SITES



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TACAN: TMS-72x (Pri-DME)
I/F above: N: clear E: clear
 S: 140k W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

TAMANRASSET
AAT

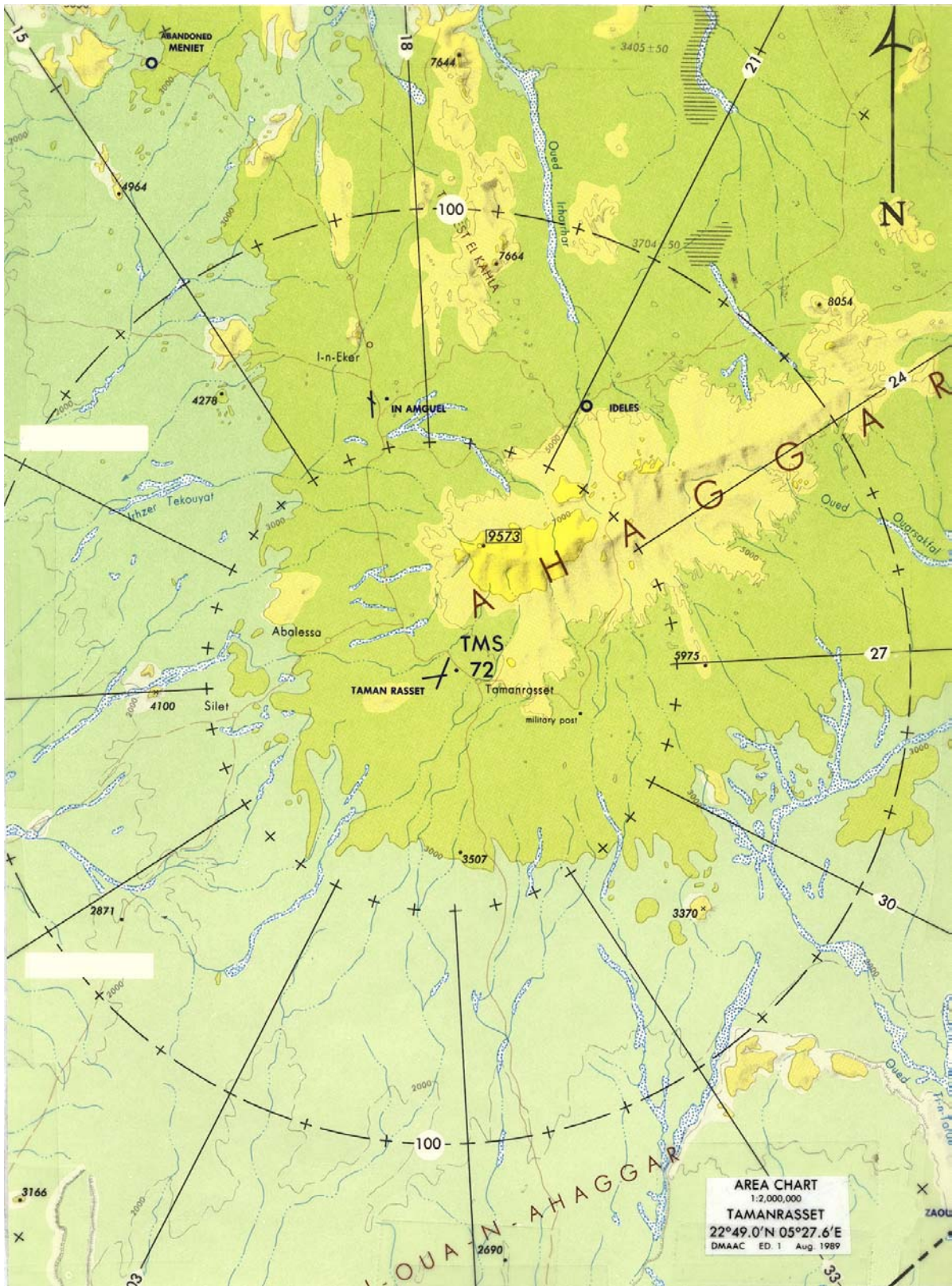
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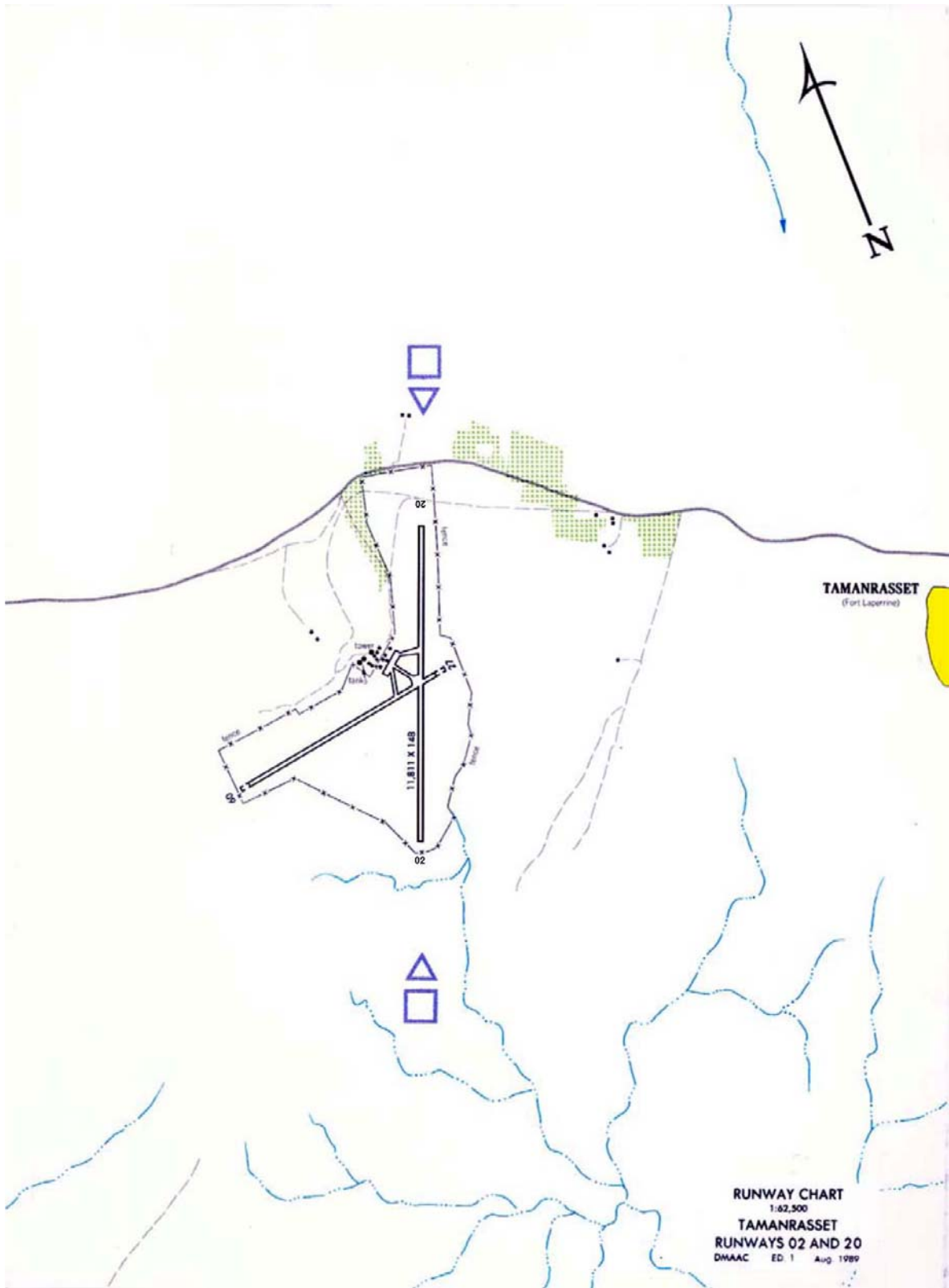
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TAMANRASSET
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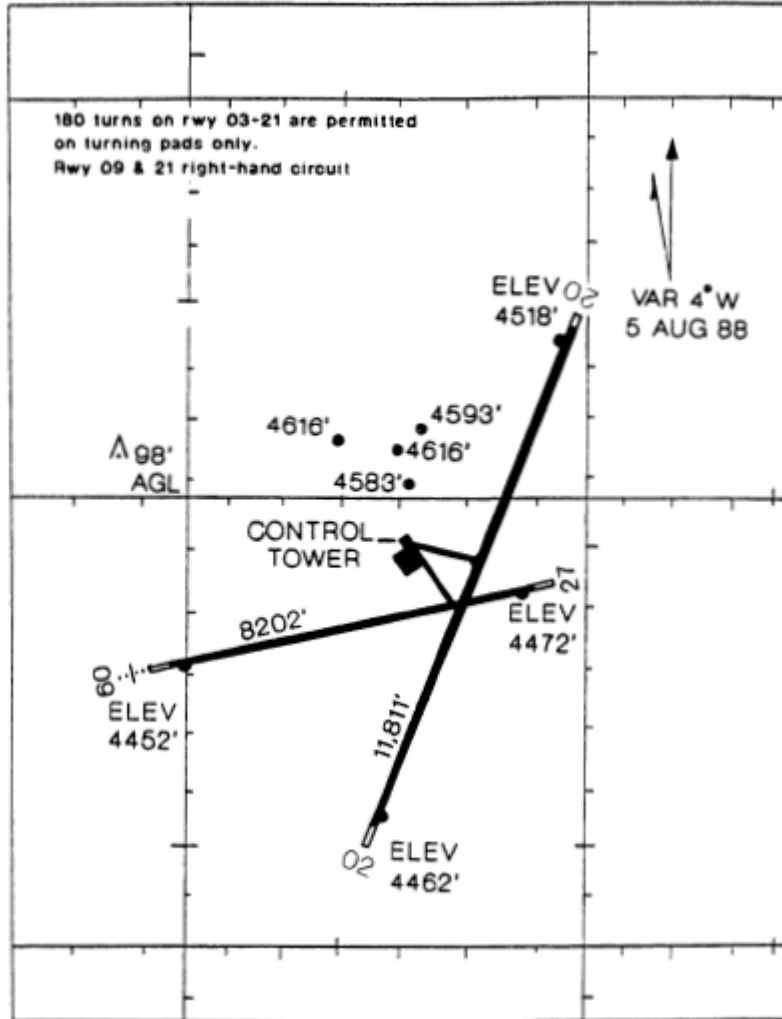
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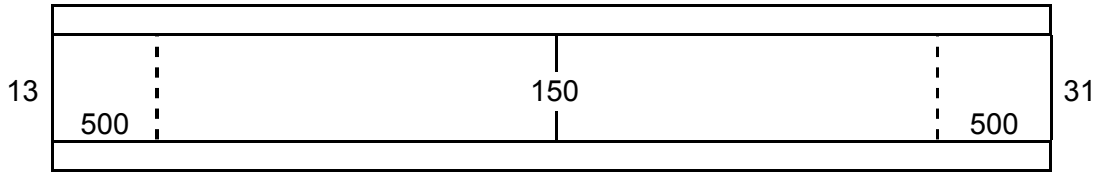




TAMANRASSET AIRPORT DIAGRAM

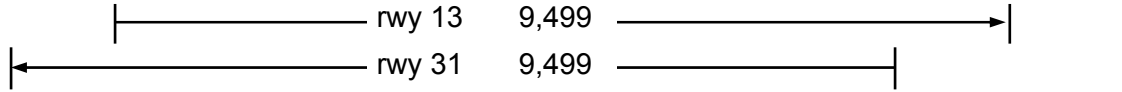
AIRPORT DIAGRAM TAMANRASSET, ALGERIA AGUENAR (DAAT)





elev = 75

elev = 65



TACAN: CYN-81x (Pri)

SIE-95x (Sec)

I/F above: N: 105k E: clear
S: 125k W: 92k

N: 88k E: 93k
S: clear W: 109k

MLS: none

PAPI: none

Ball Bar: none

UHF: yes (guard only)

ATLANTIC CITY
ACY

ATLANTIC CITY
ACY

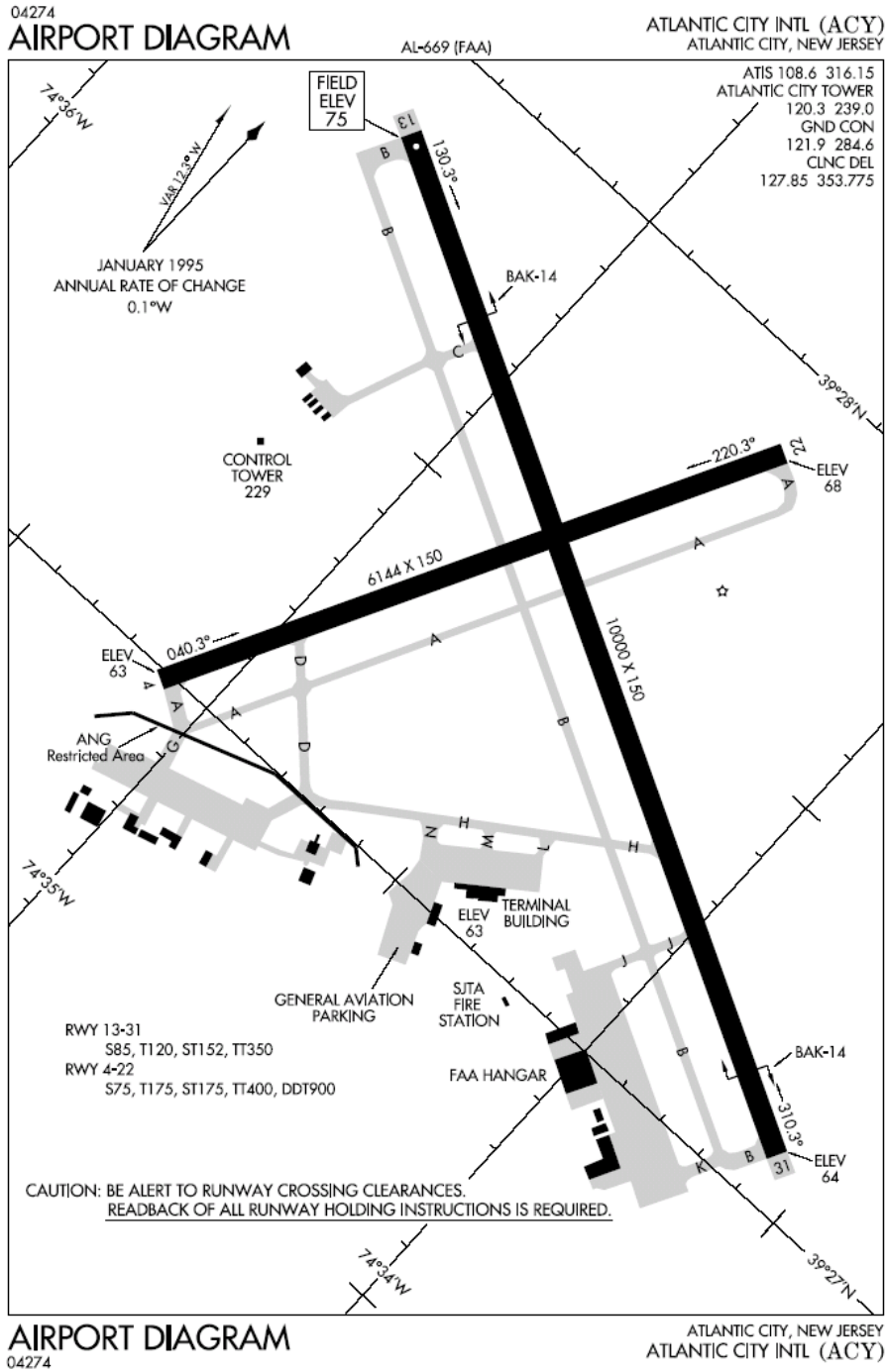
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ATLANTIC CITY INTERNATIONAL AIRPORT DIAGRAM



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ATLANTIC CITY RWY ACY 13



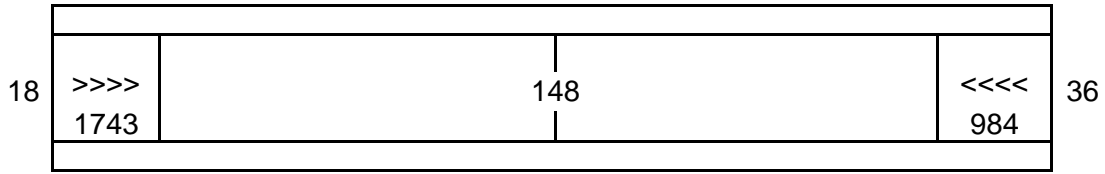
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ATLANTIC CITY RWY ACY 31

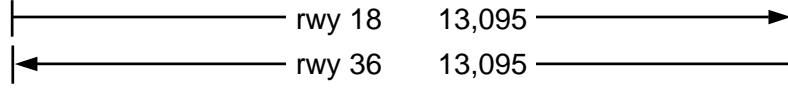


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elev = 1659

elev = 1734



TACAN: HSV-87x (Pri) NSV-109x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE

Previous site identifier was HDS

HOEDSPRUIT
AHS

HOEDSPRUIT
AHS

HOEDSPRUIT
AHS

HOEDSPRUIT
AHS

HOEDSPRUIT
AHS

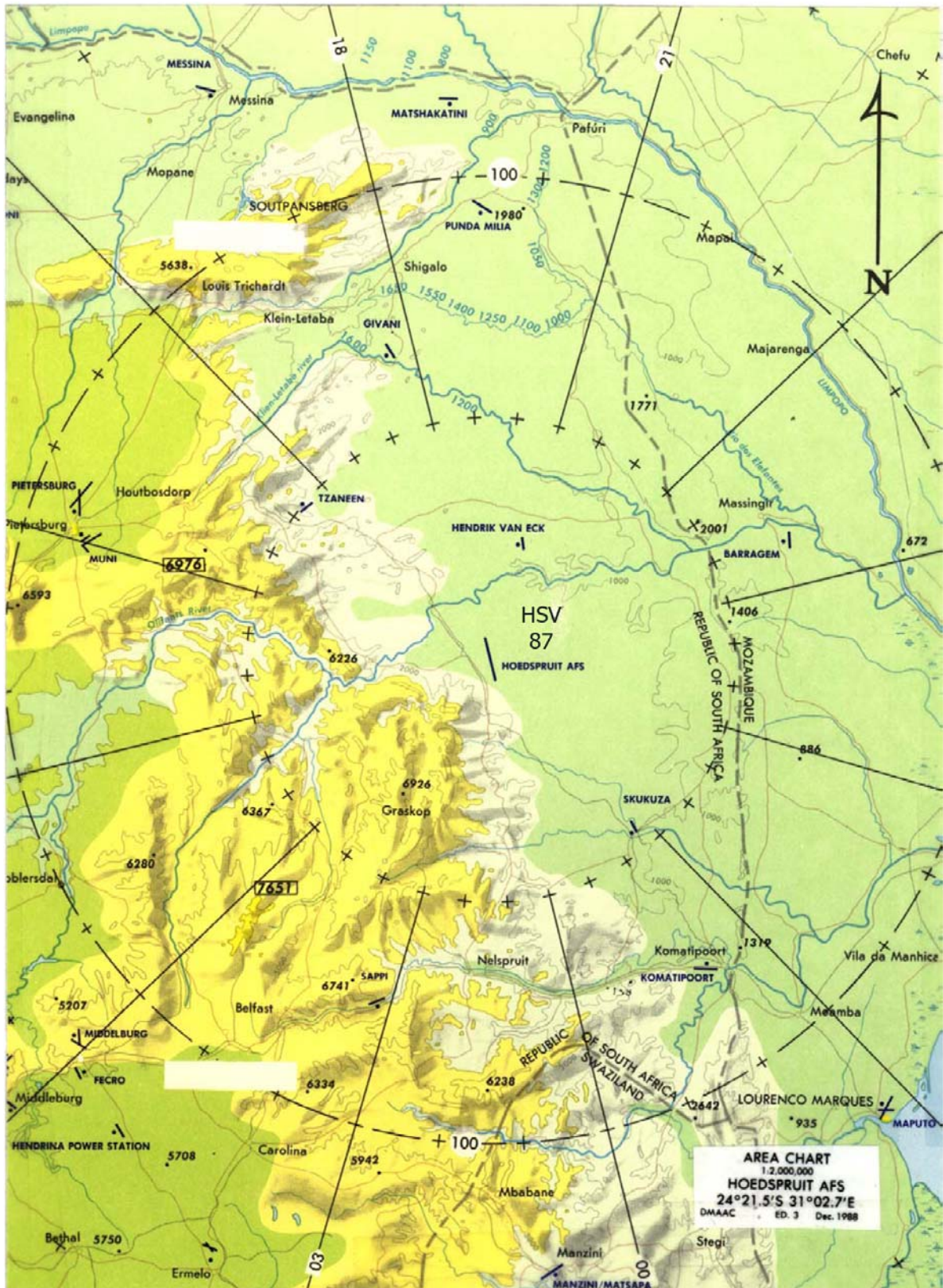
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AHS

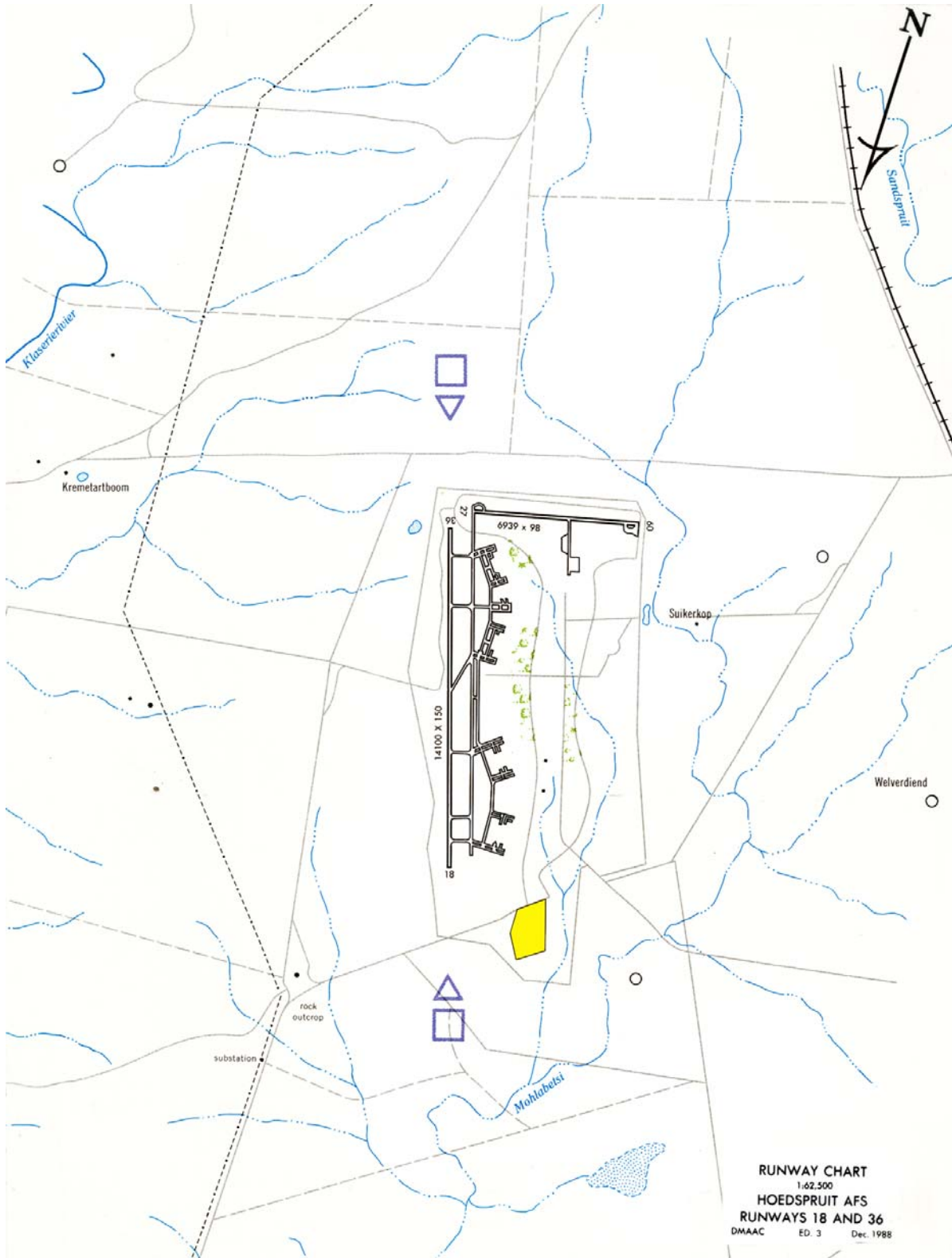
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AHS

HOEDSPRUIT
AHS

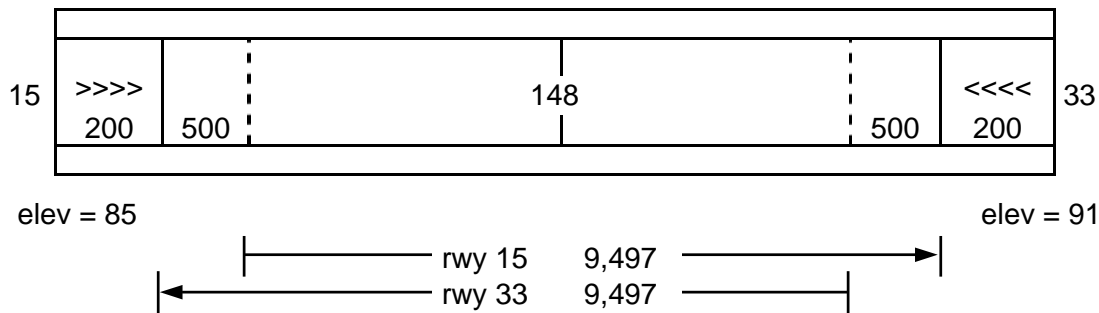
HOEDSPRUIT
AHS

HOEDSPRUIT
AHS





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TACAN: AMB-94x (Pri) BN-79x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 The over/underruns are unusable

AMBERLEY
AMB

AMBERLEY
AMB

AMBERLEY
AMB

AMBERLEY
AMB

AMBERLEY
AMB

AMBERLEY
AMB

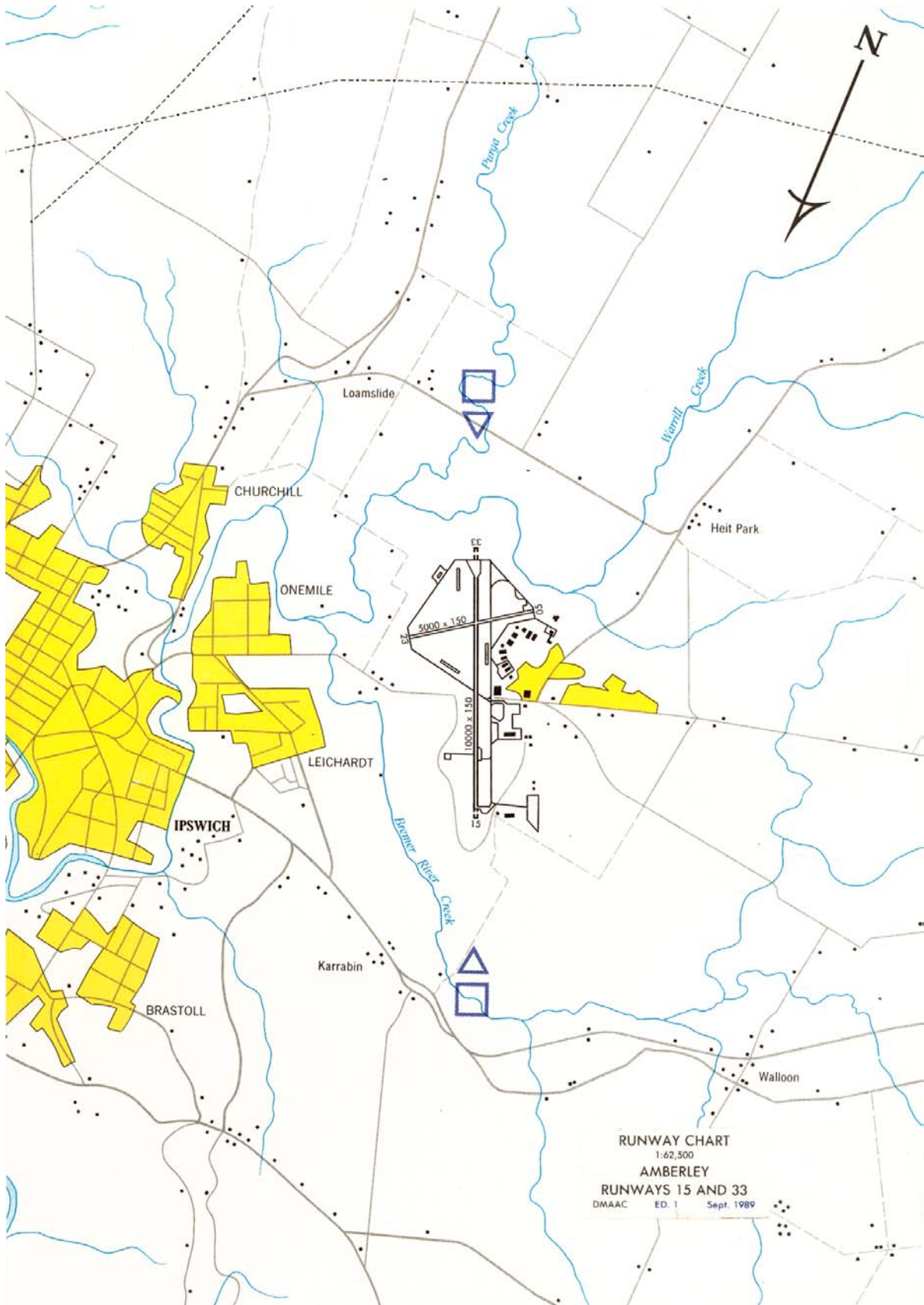
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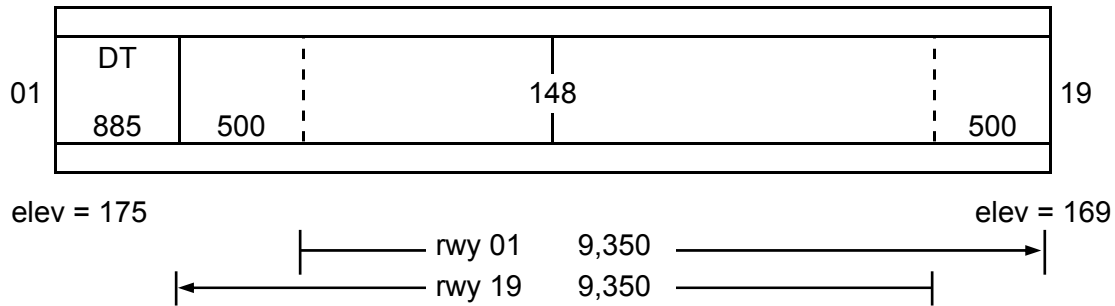
AMBERLEY
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AMB





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TACAN: CVS-100x (Pri-DME)
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 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

WARNING

Expect poor visibility and crosswinds from the east

Rwly 01 preferred, but terrain on approach is more than 30 ft lower than rwly 19

NOTE

Language is Portuguese.

Total pavement width is 240 ft.

The 885-ft displaced threshold is unusable

AMILCAR CABRAL
 AML
 AMILCAR CABRAL
 AML
 AMILCAR CABRAL
 AML
 AMILCAR CABRAL
 AML

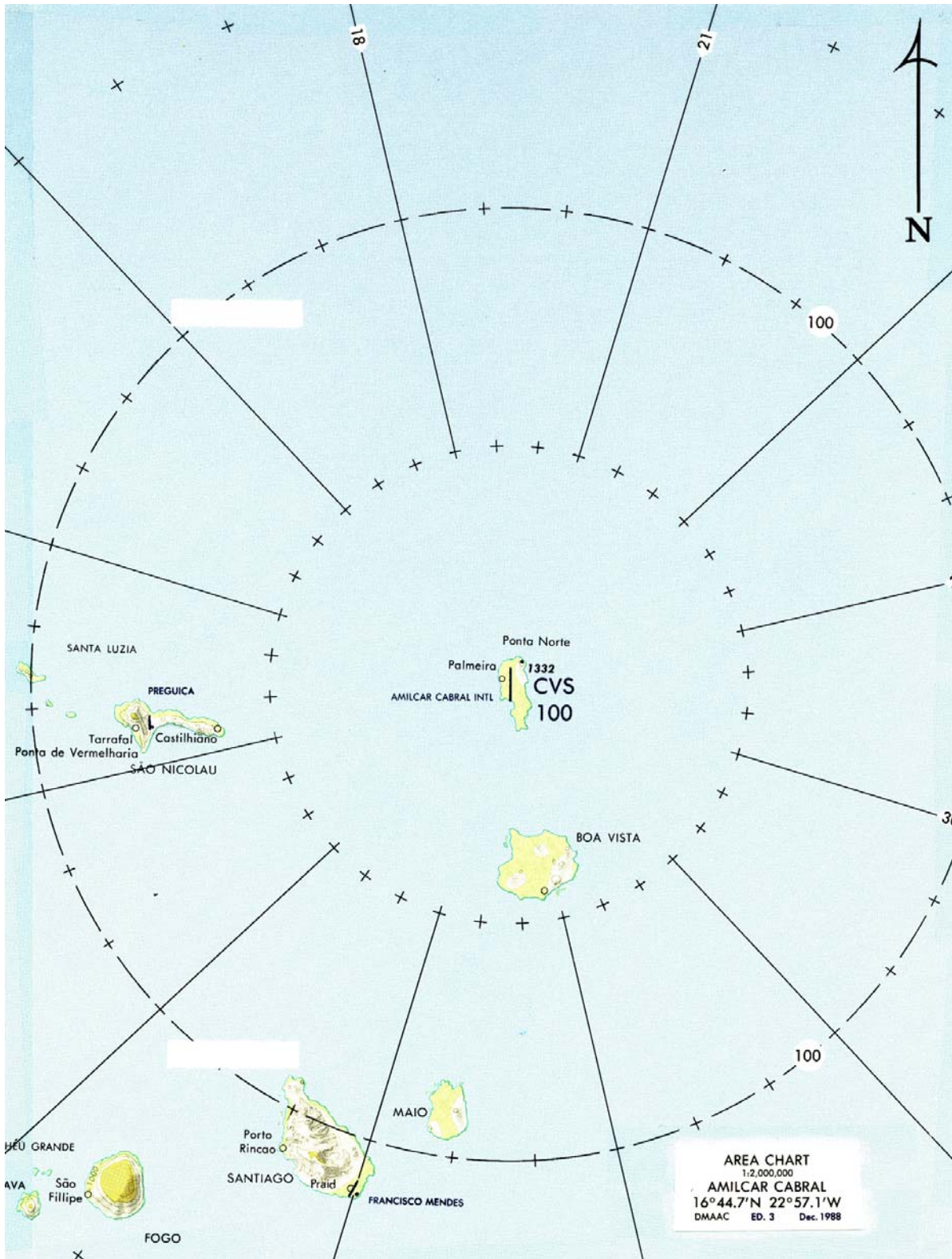
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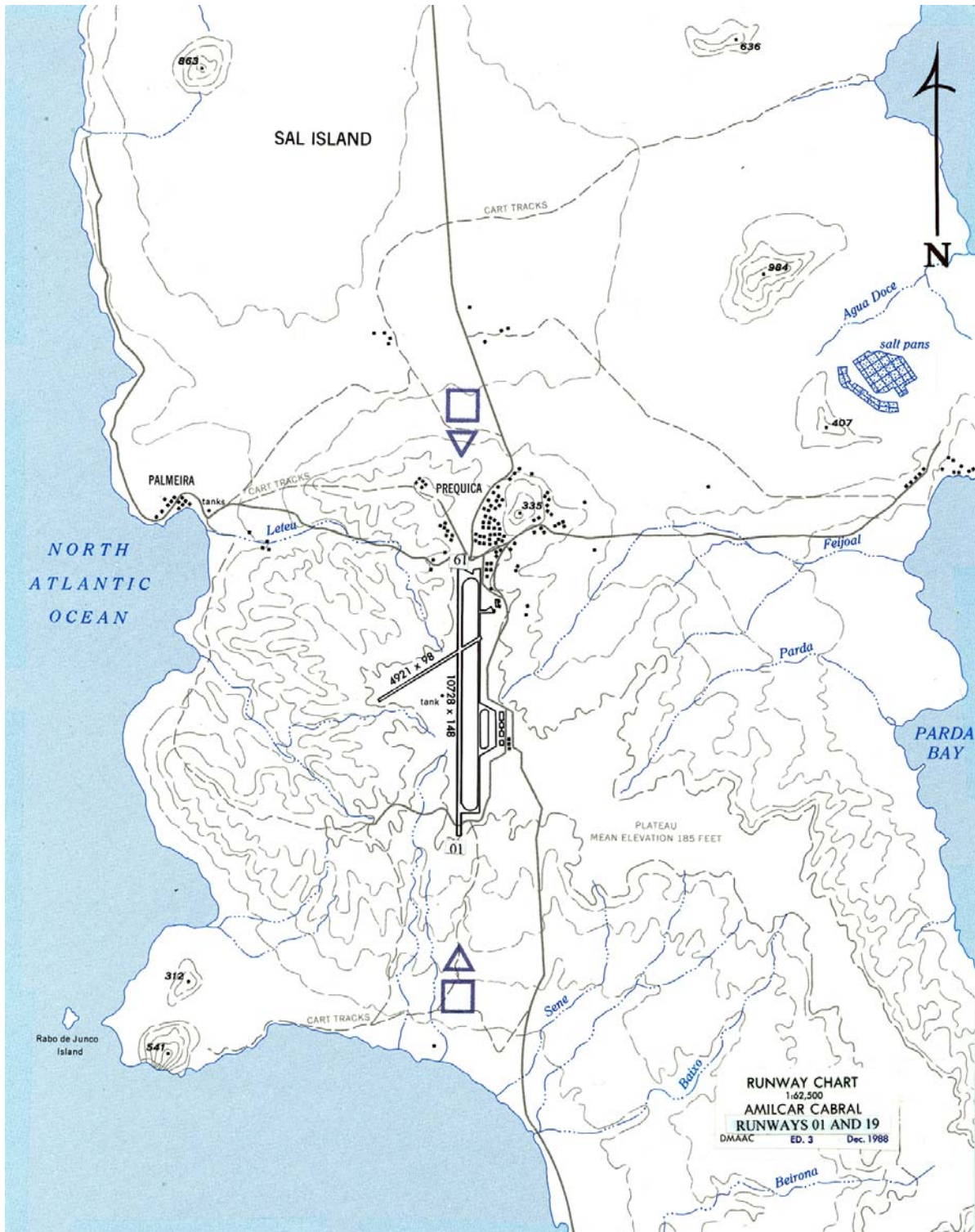
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AMILCAR CABRAL
AML





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AMILCAR CABRAL RWY AML 01

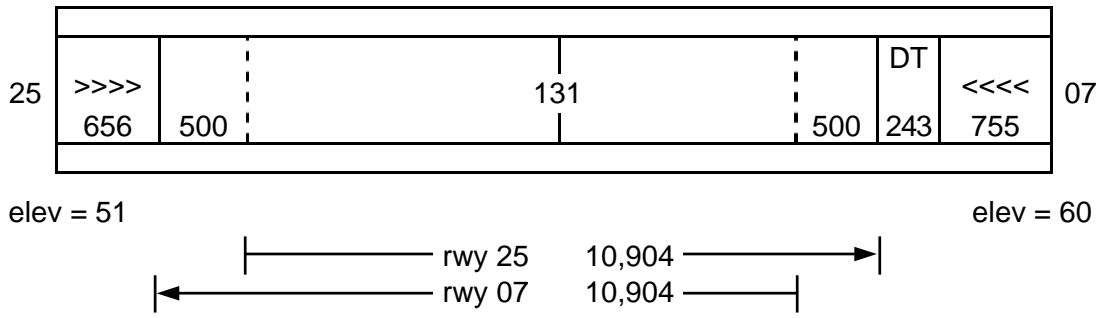


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AMILCAR CABRAL RWY AML 19



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TACAN: GAL-114x (Pri-DME)
I/F above: N: 152k E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE

Both over/underruns are unusable.

The 243-ft displaced threshold is unusable

RIO GALLEGOS
AWG

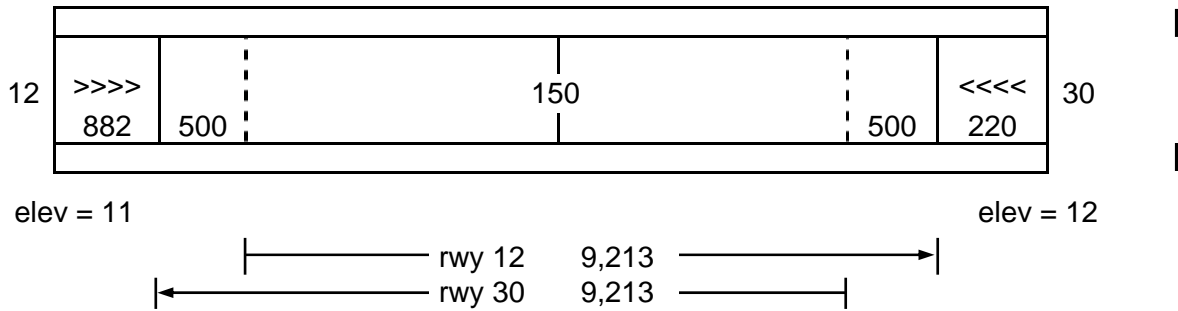
RIO GALLEGOS
AWG

RIO GALLEGOS
AWG

RIO GALLEGOS
AWG

RIO GALLEGOS
AWG

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TACAN: BDA-86x (Pri-DME)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 The over/underruns are unusable

BERMUDA
BDA

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BDA

BERMUDA
BDA

BERMUDA
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BERMUDA
BDA

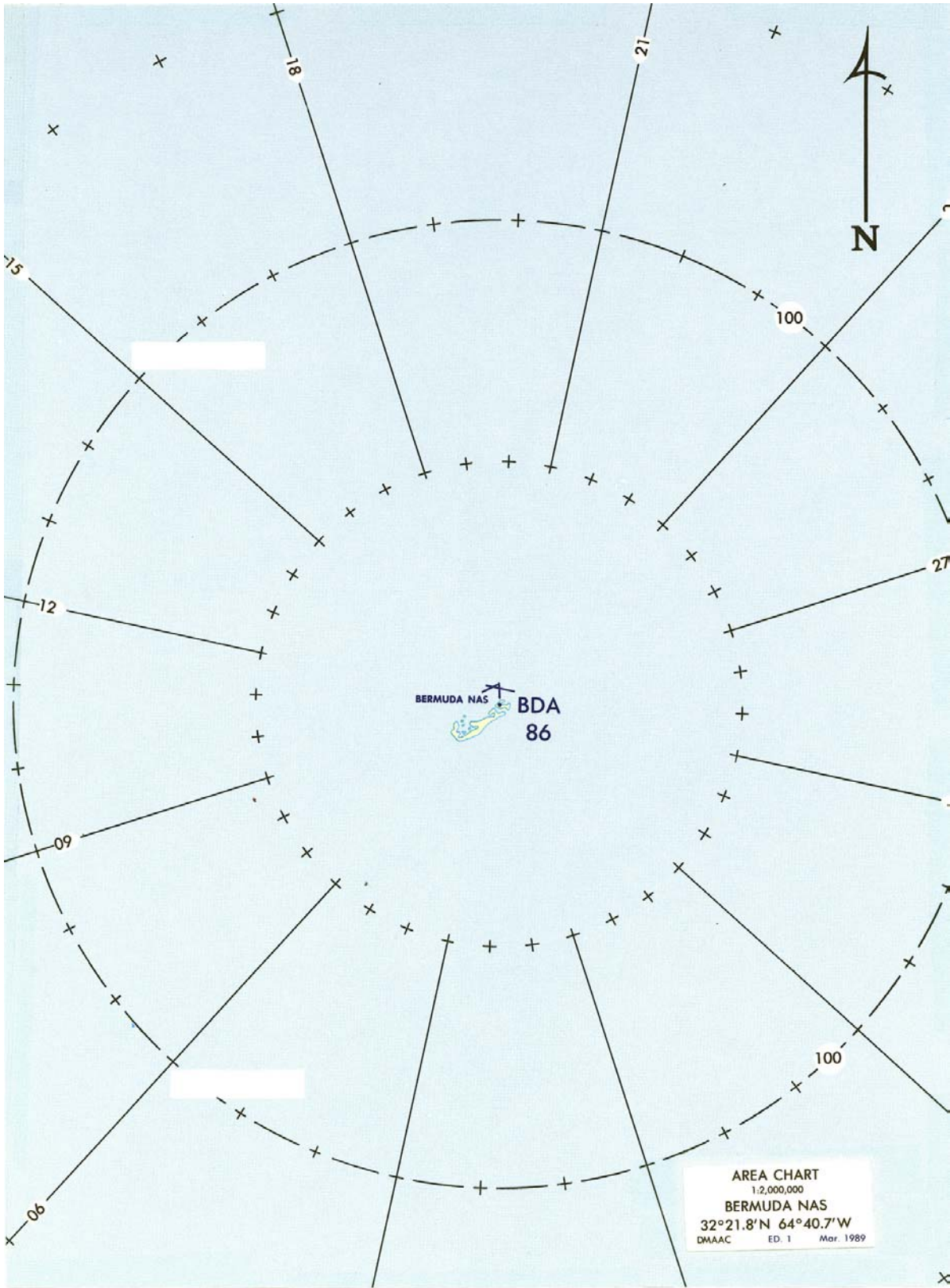
BERMUDA
BDA

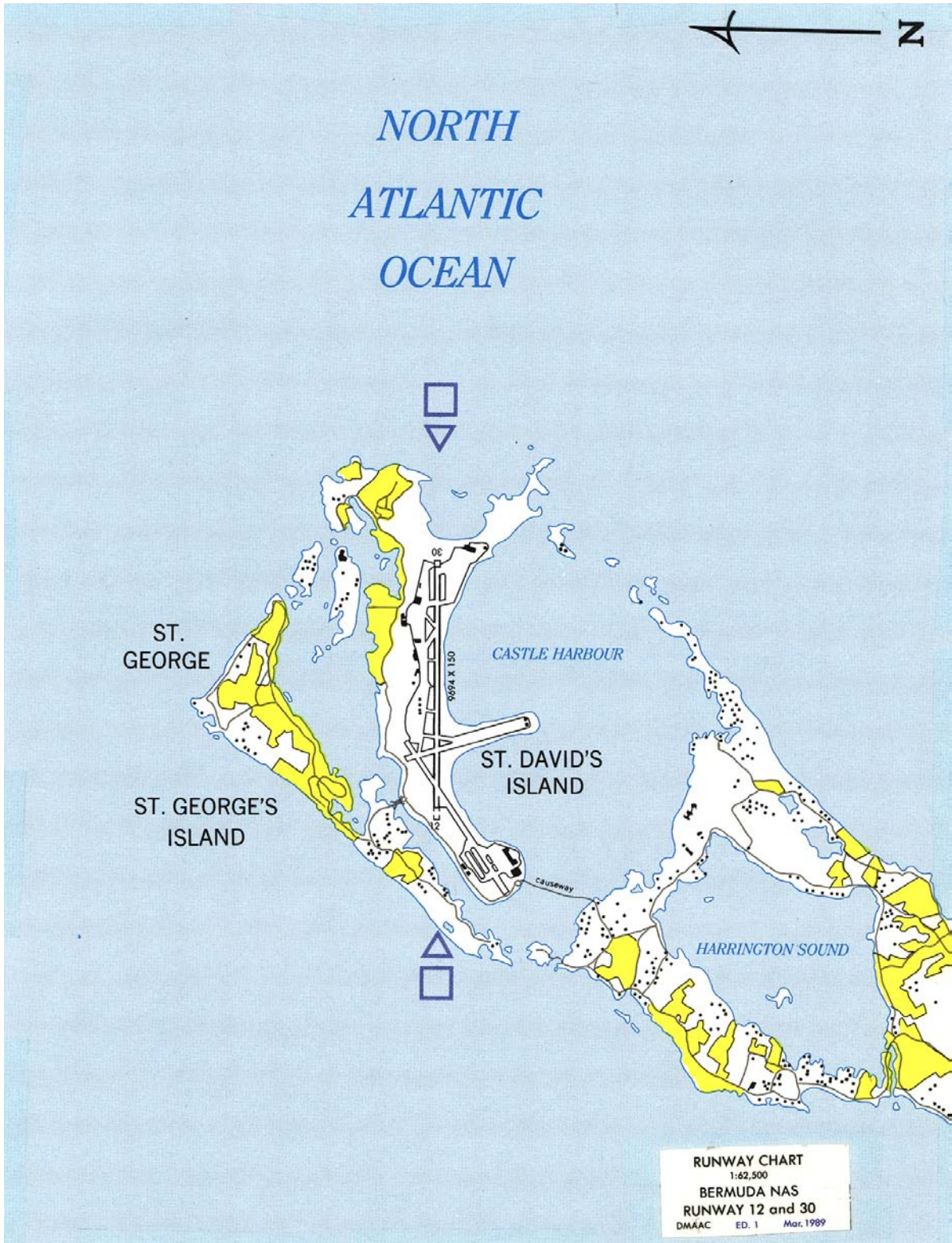
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BERMUDA RWY BDA 12

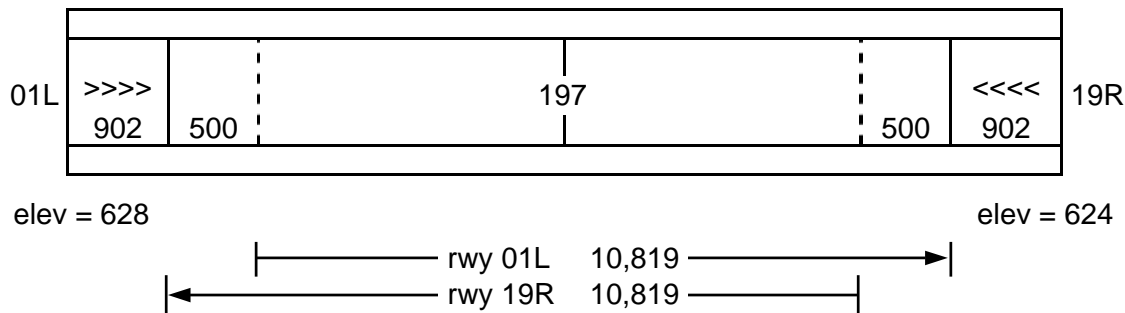


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BERMUDA RWY BDA 30



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TACAN: MOJ-37x (Pri) BEJ-105x (Sec)
I/F above: N: clear E: clear N: << 80k E: << 80k
 S: clear W: clear S: << 80k W: << 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes

NOTE
 Both underruns are unusable.
 The overrun for rwy 01L is unusable

BEJA
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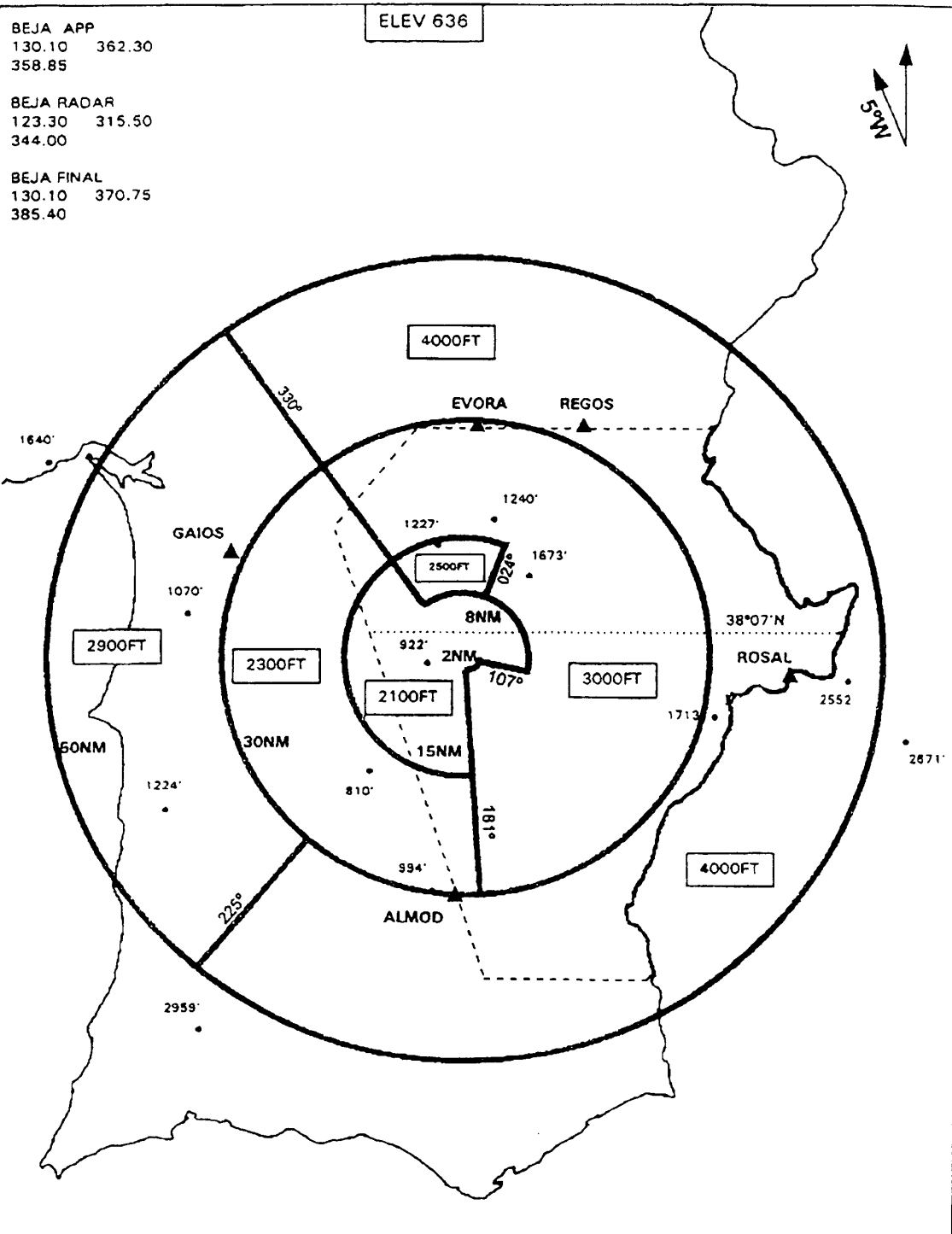
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BEJA INSTRUMENT CHART

MILITARY AIP - PORTUGAL
 PORTUGUESE AIR FORCE

WGS DATUM

MAP 4-9-1-1
 INSTRUMENT CHART



MINIMUM VECTORING ALTITUDE 38°04'44"N
 007°55'57"W

BEJA
 (LPBJ)

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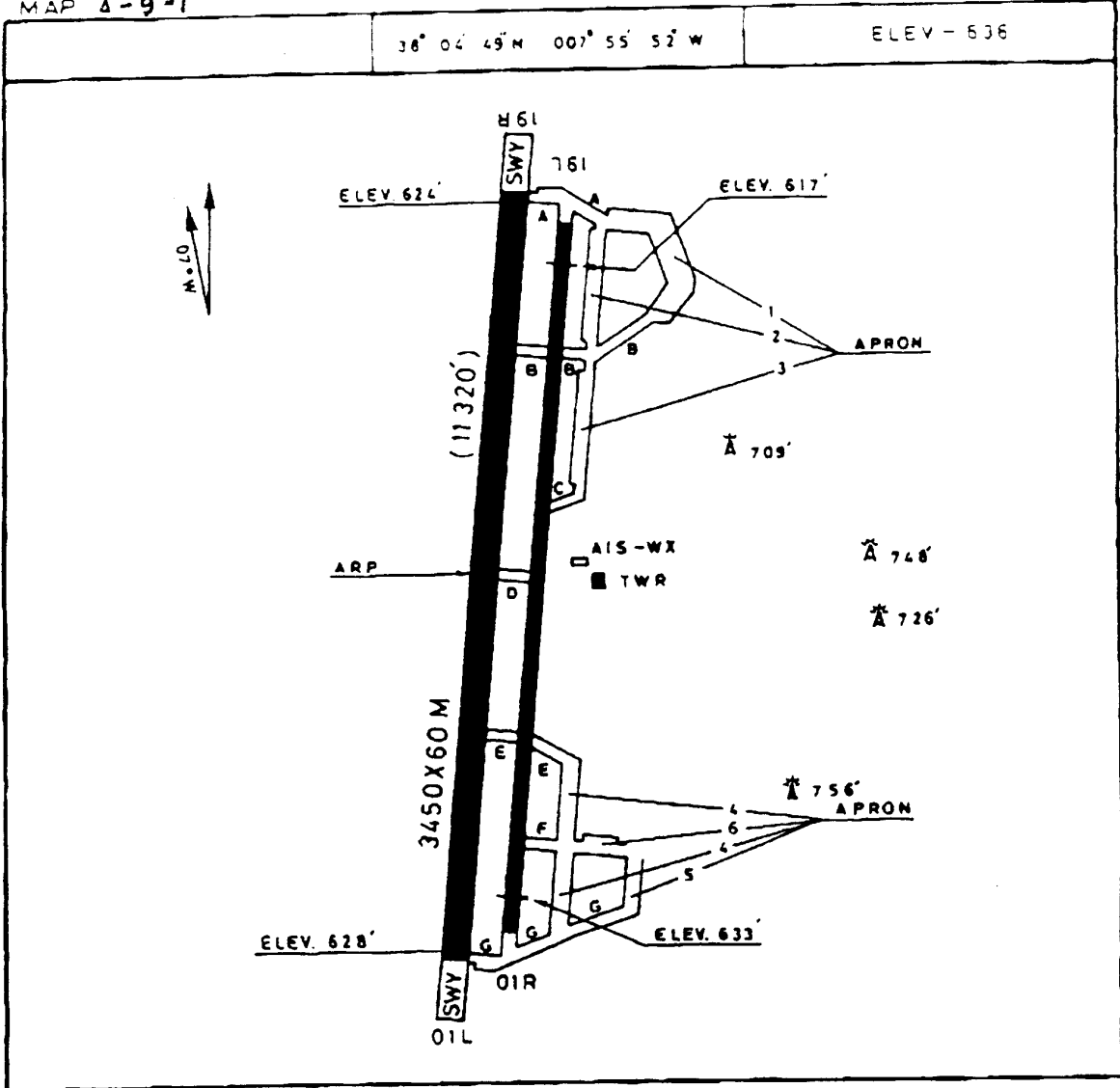
BEJA AIRPORT DIAGRAM

MILITARY AIR-PORTUGAL

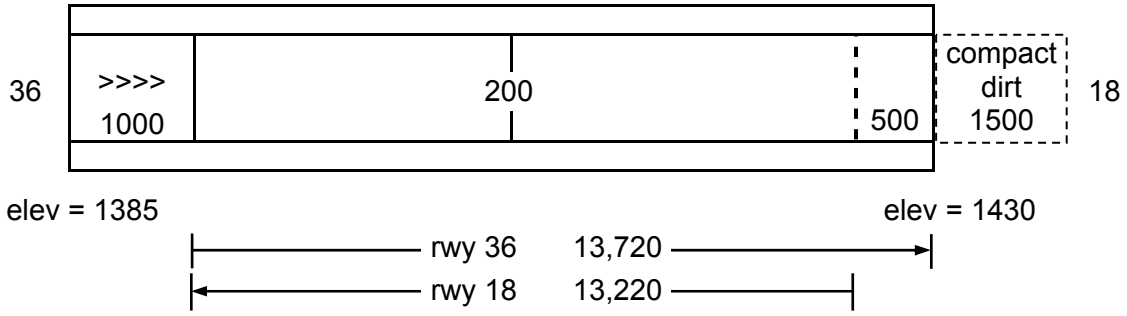
MAP 4-9-1

38° 04' 49" N 007° 55' 52" W

ELEV - 636



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TACAN: MAK-80x (Pri-DME) CBA-116x (Sec-DME)
I/F above: N: 113k E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE

The 1500-ft dirt overrun on rwy 18 is unusable, but is usable as an overrun for rwy 36

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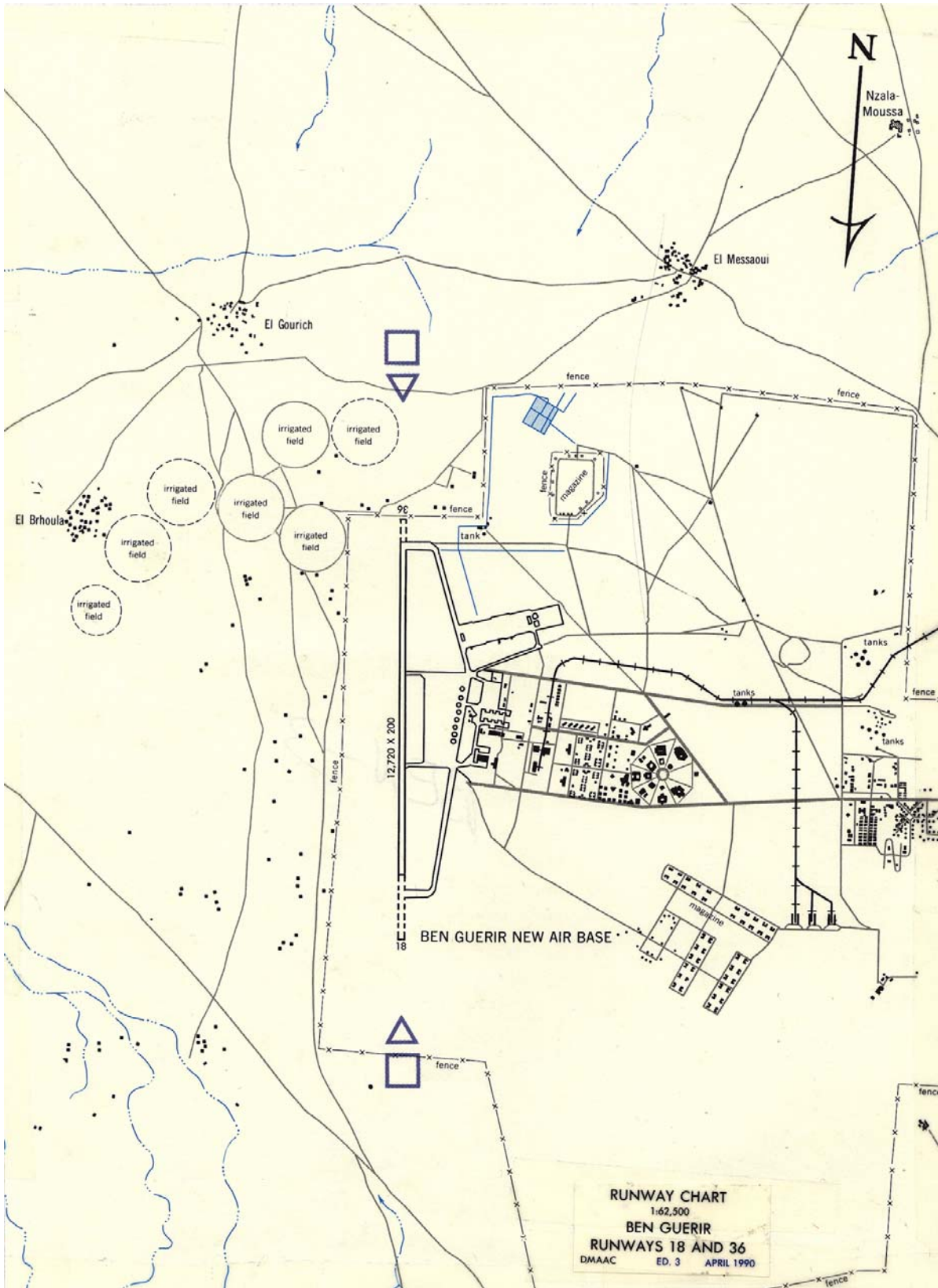
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BEN GUERIR RWY BEN 36

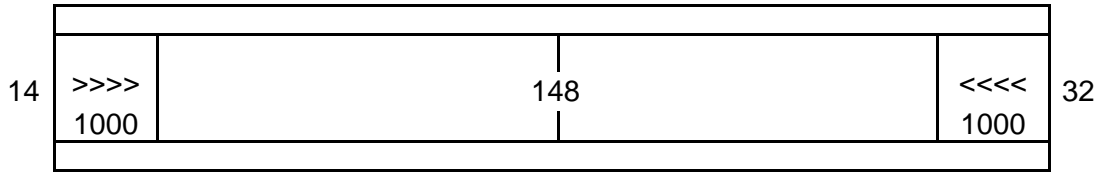


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Banjul International, Gambia

Table Identifier

BYD



TACAN: BJ-76x (Pri-DME) YF-78x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

WARNING
40-ft palm trees 3200 ft from rwy 32

BANJUL
BYD

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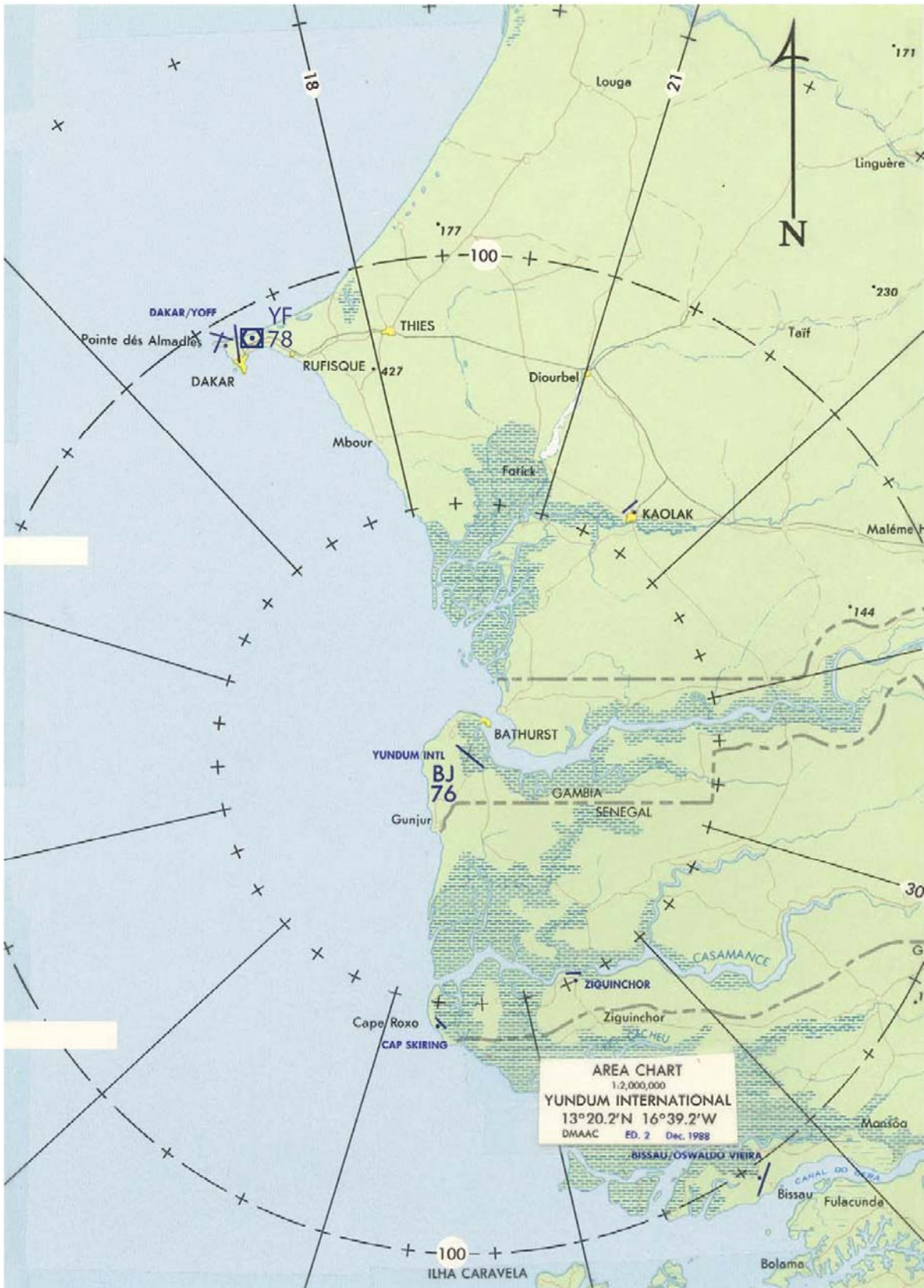
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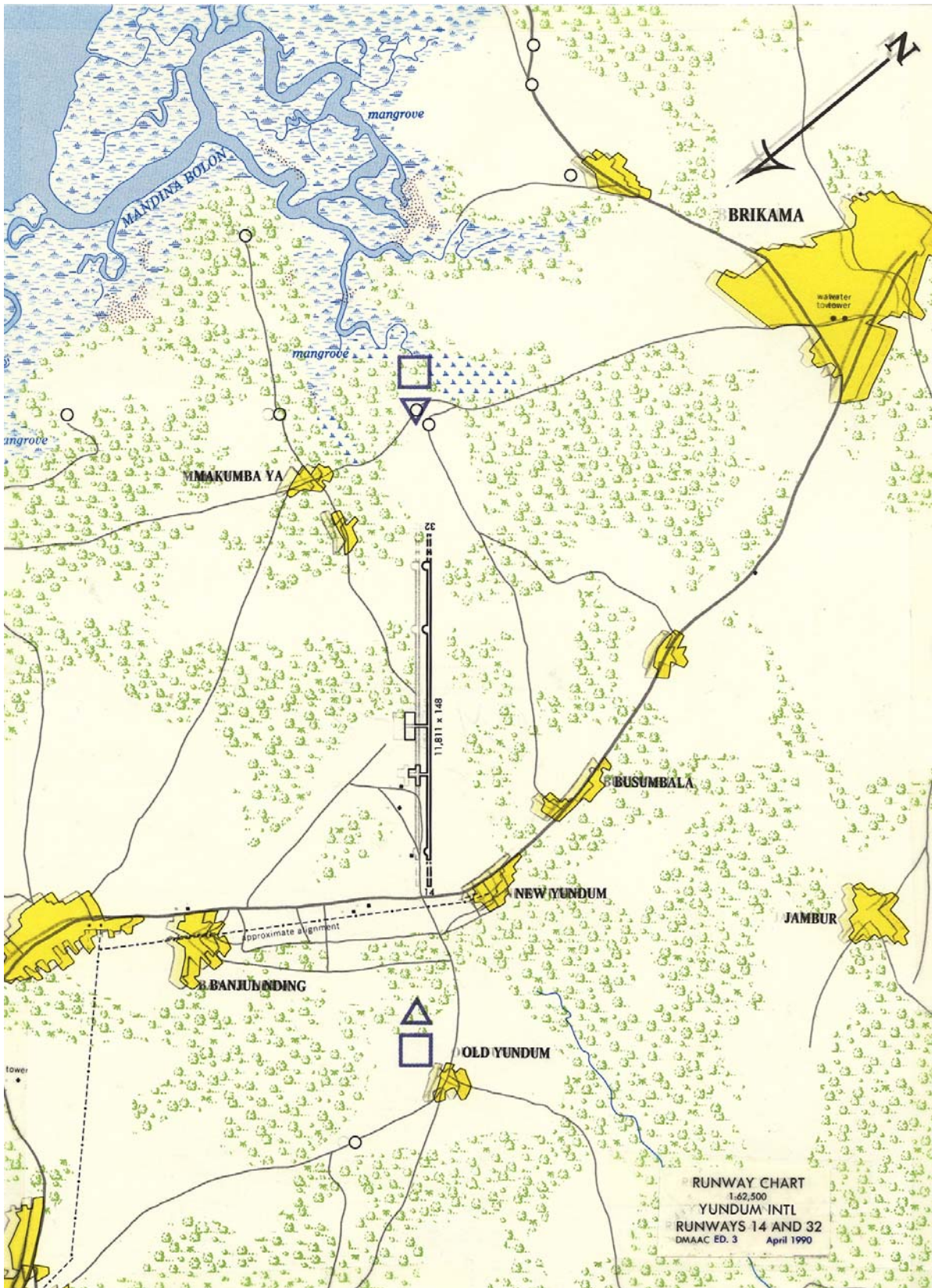
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BANJUL RWY BYD 14



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BANJUL RWY BYD 32
View 1

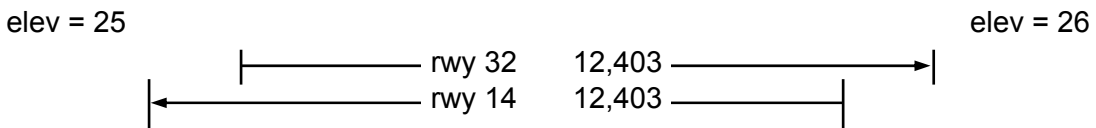
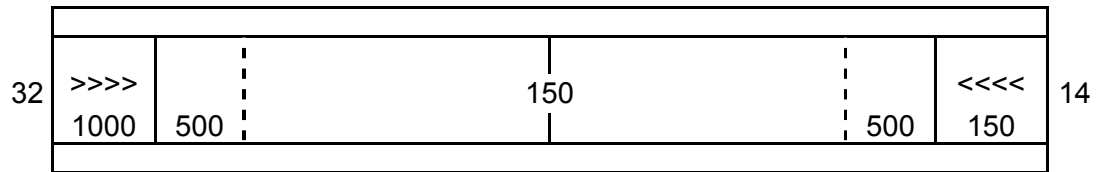
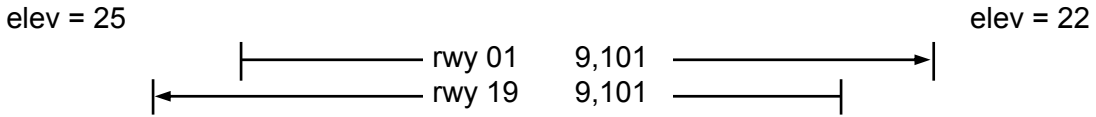
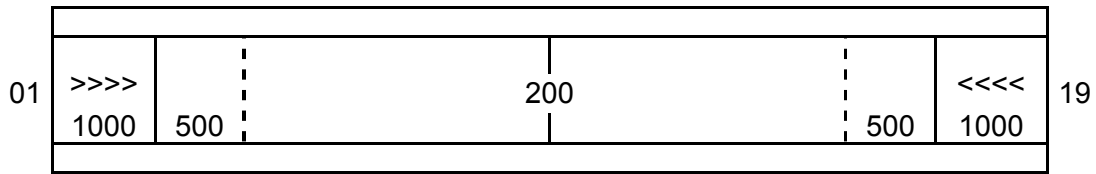


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BANJUL RWY BYD 32
View 2



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TACAN: SIE-95x (Pri) CYN-81x (Sec)
I/F above: N: 99k E: 104k N: 93k E: clear
 S: 156k W: 100k S: 110k W: 86k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 All over/underruns are unusable

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DOV

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DOV

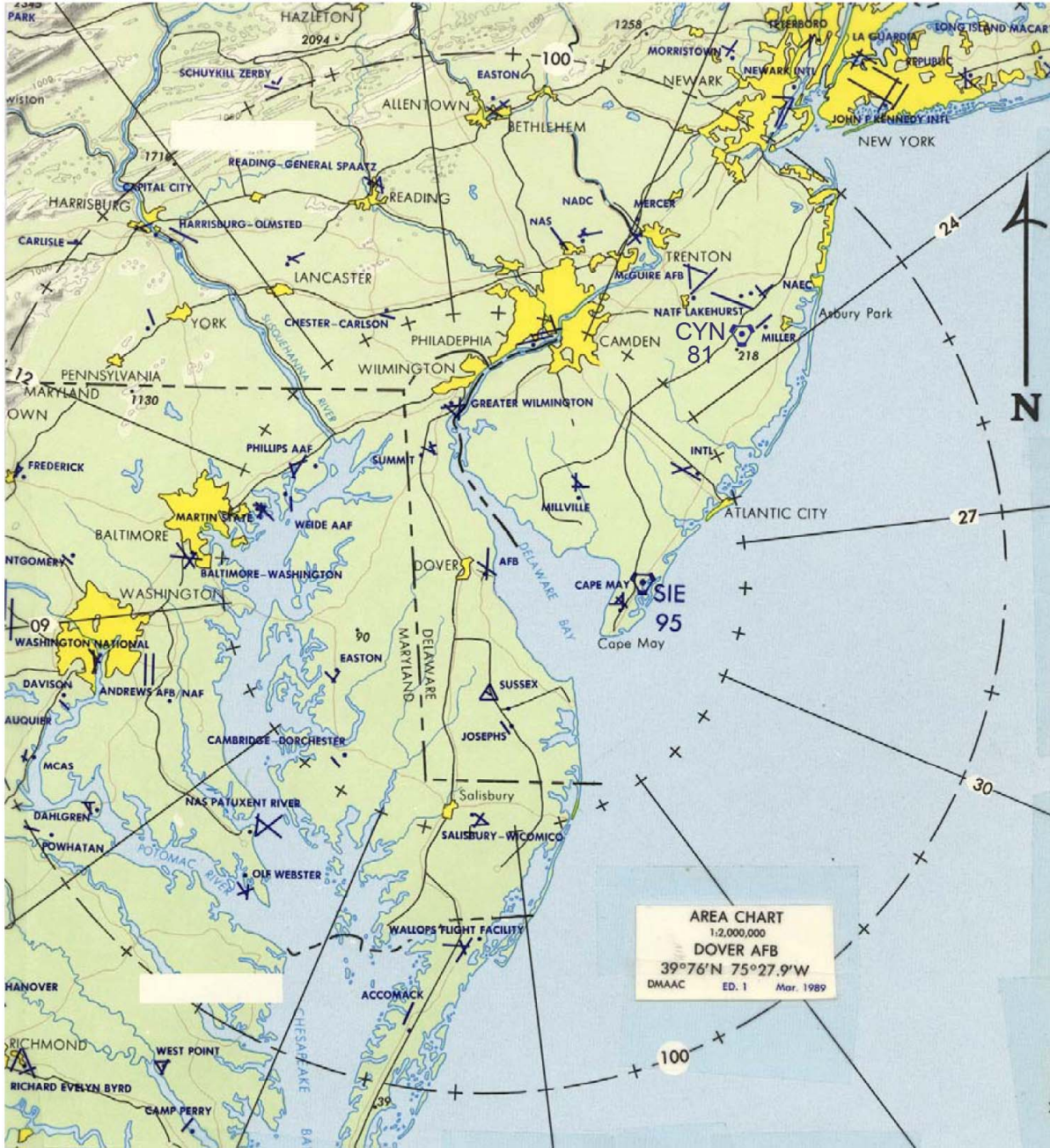
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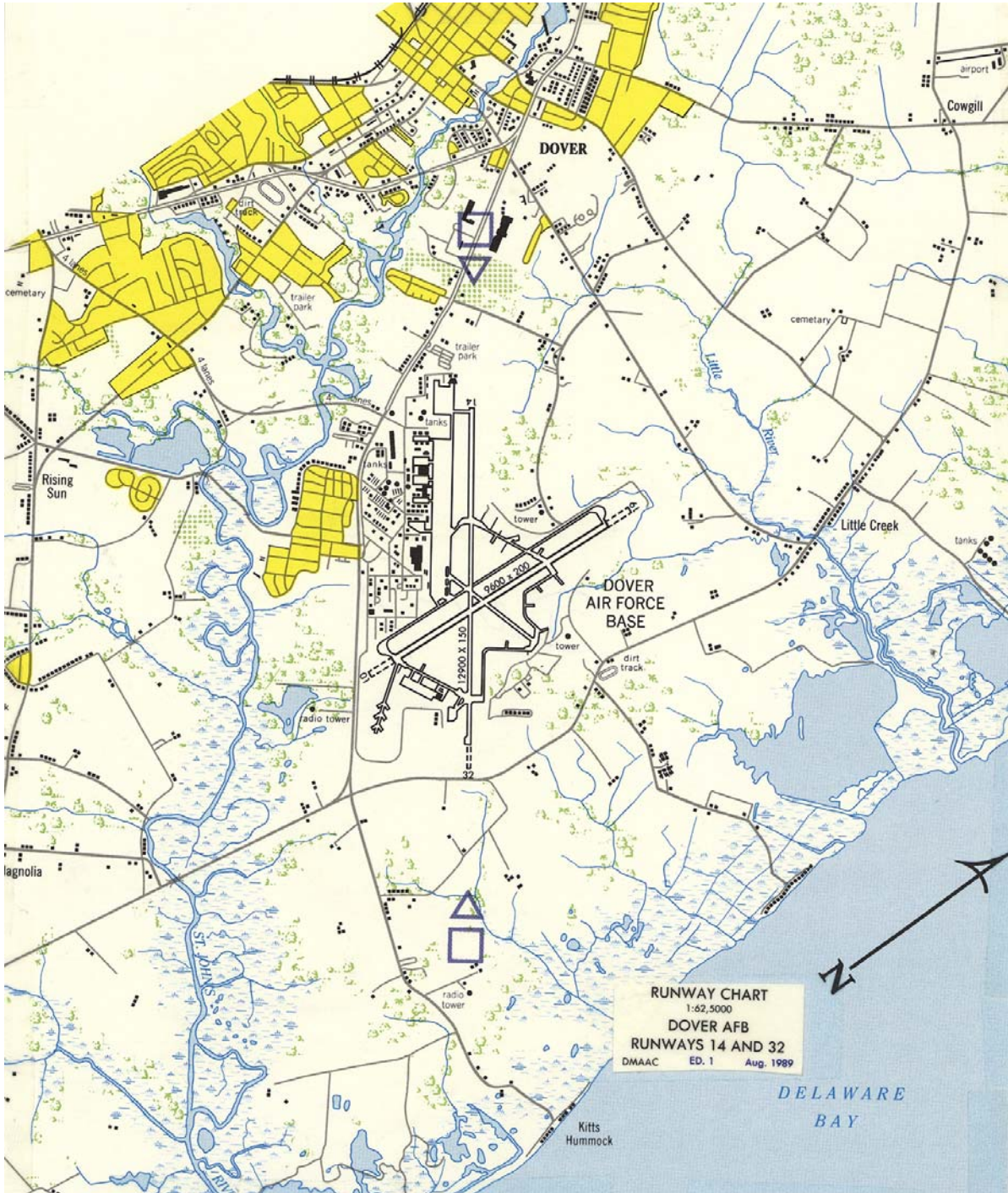
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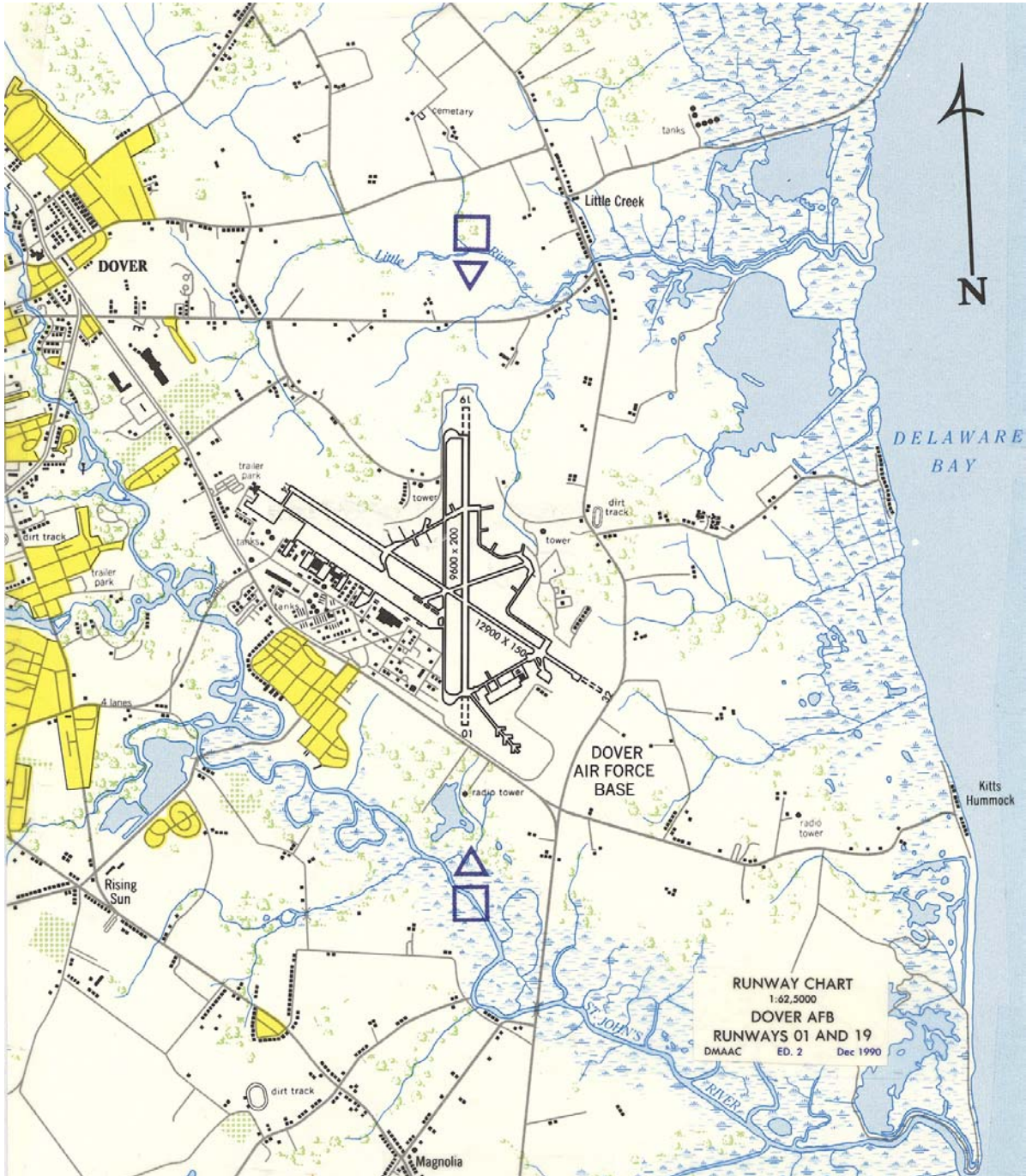
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DOVER RWY DOV 01



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DOVER RWY DOV 19



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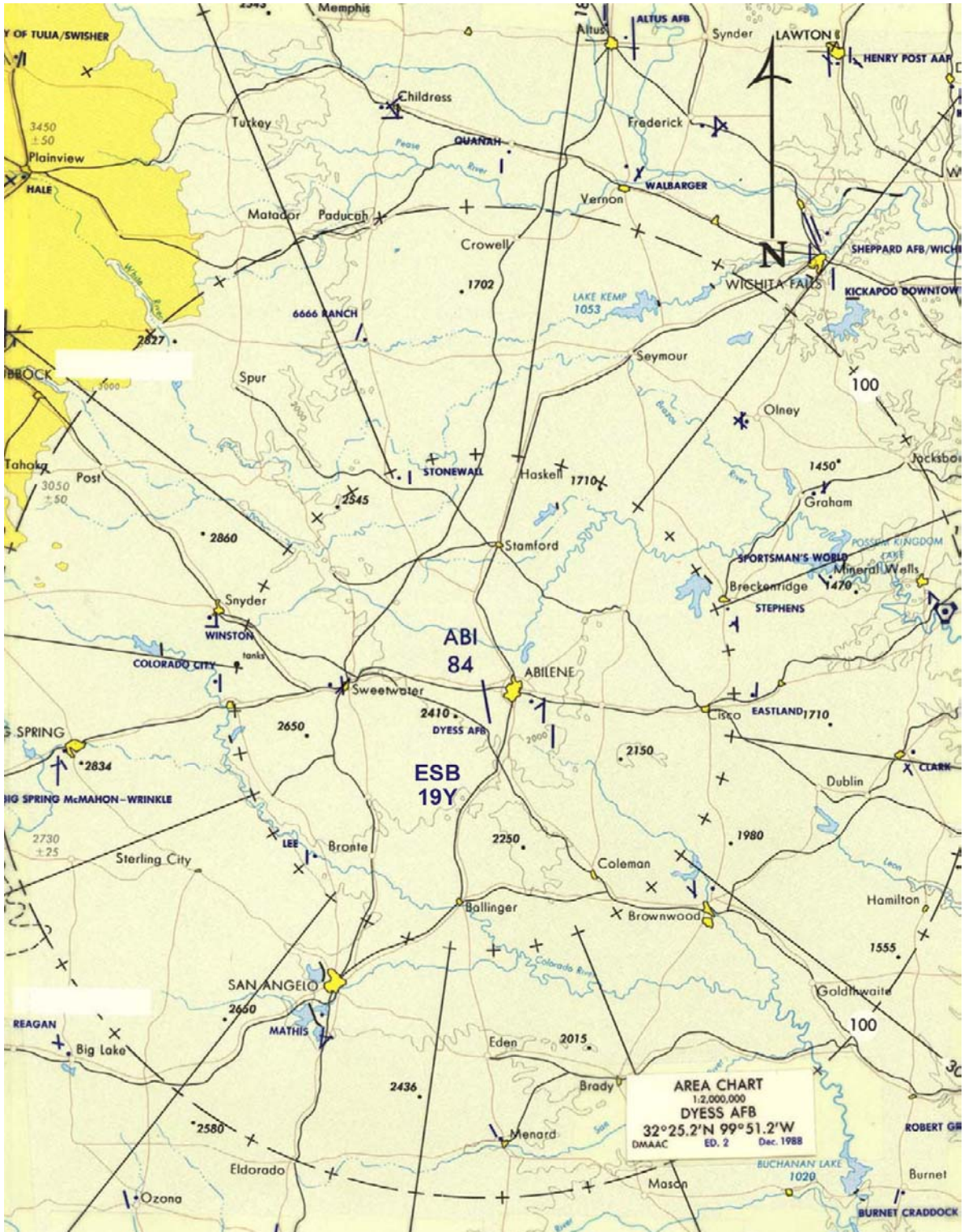
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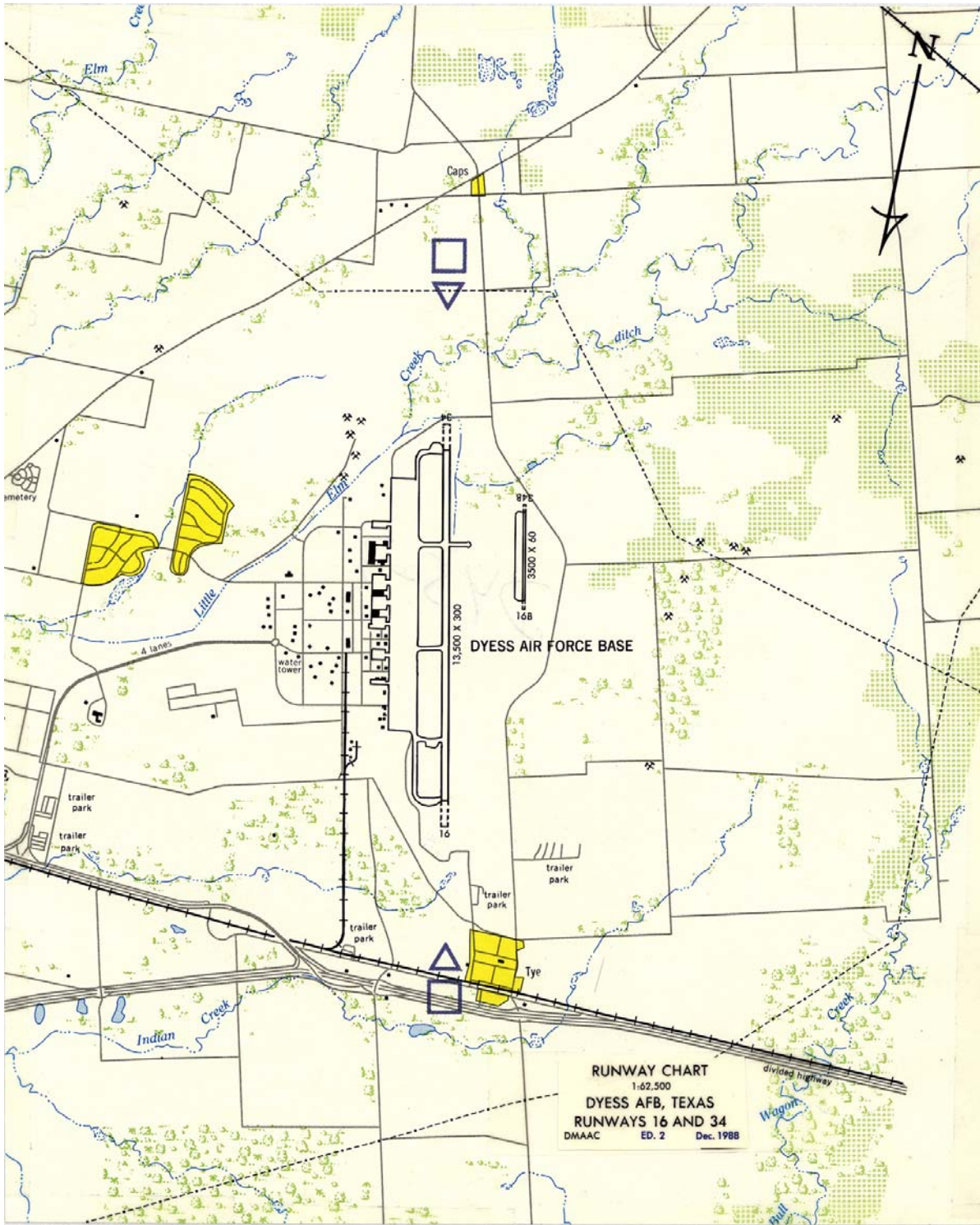
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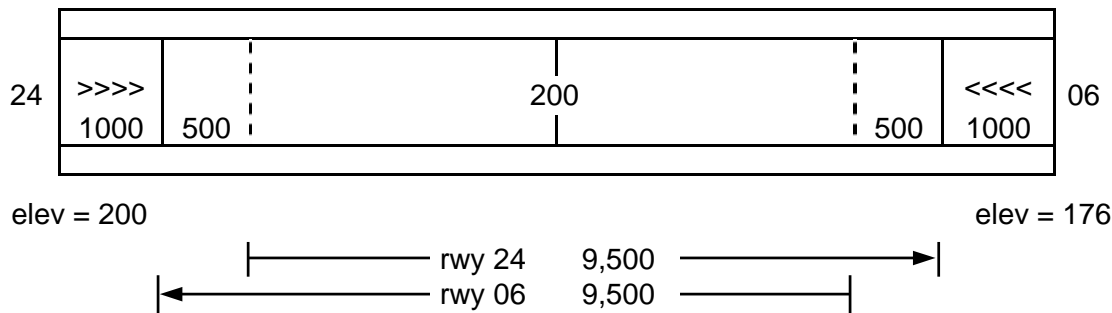
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TACAN: EDF-81x (Pri) BGQ-72x (Sec)
I/F above: N: clear E: clear N: 138k E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

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EDF

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EDF

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ELMENDORF AIRPORT DIAGRAM

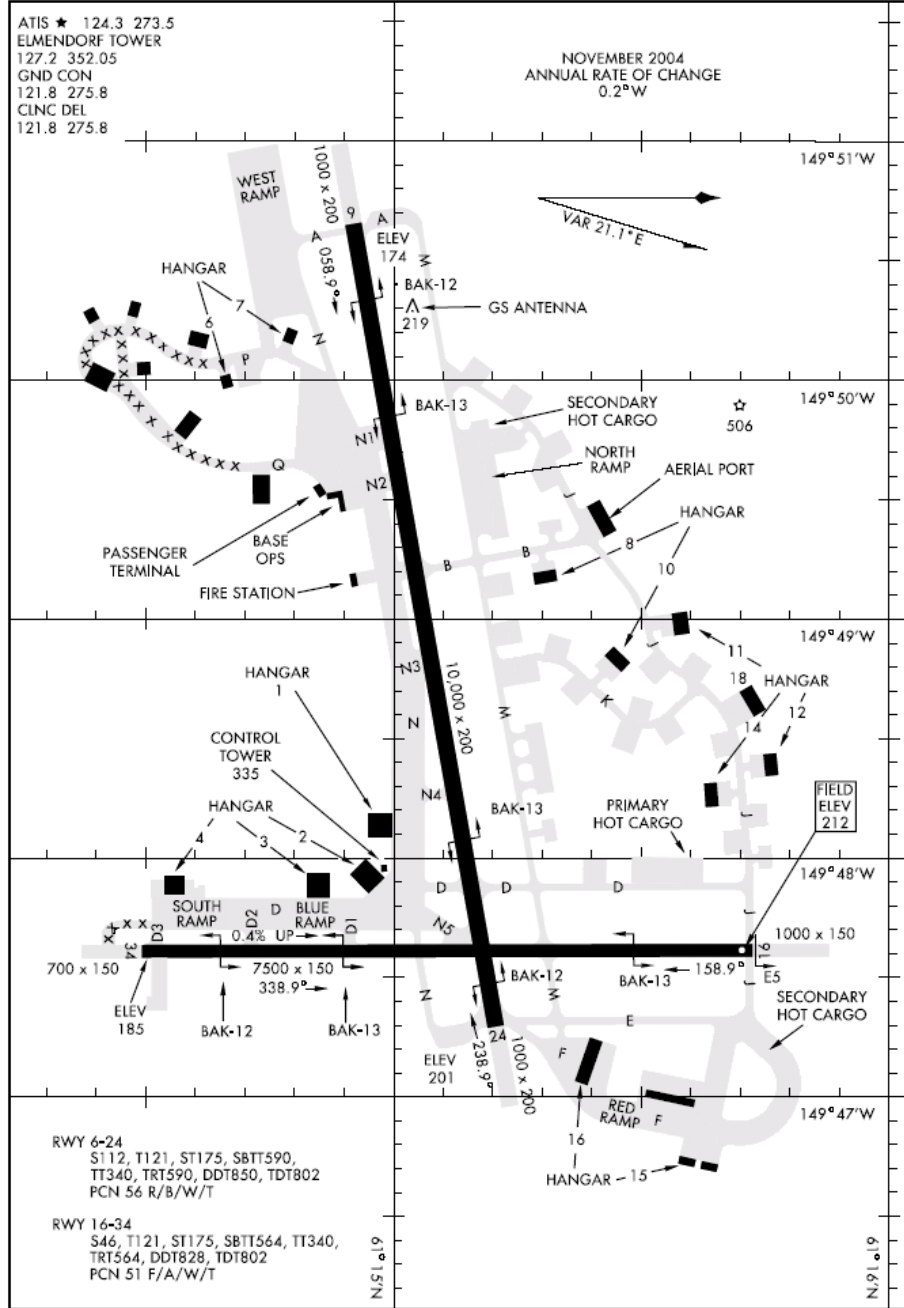
04330

ELMENDORF AFB (PAED)

AIRPORT DIAGRAM

AFD-1196 [USAF]

ANCHORAGE, ALASKA



AIRPORT DIAGRAM

WGS DATUM

ANCHORAGE, ALASKA
 ELMENDORF AFB (PAED)

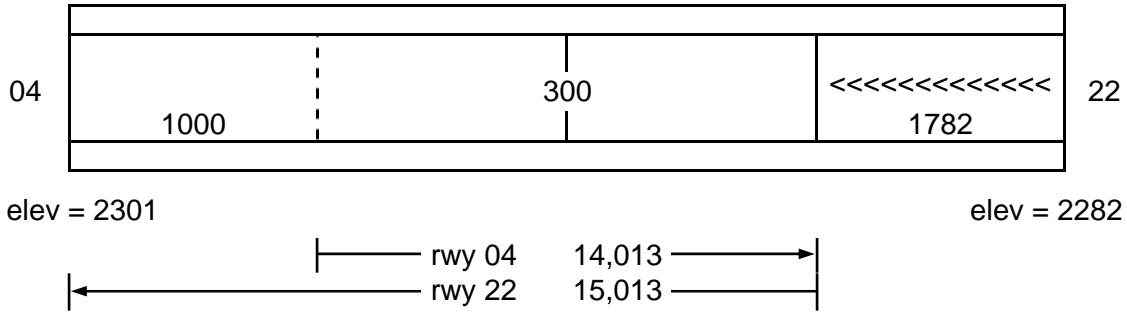
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ELMENDORF RWY EDF 06



ELMENDORF RWY EDF 06





TACAN: EDW-111x (Pri) LHS-21x (Sec)
I/F above: N: 138k E: 128k N: 84k E: 98k
 S: clear W: clear S: clear W: 90k

MLS: (22-Sr) ch 8; 4 Jrs, ch 6*
PAPI: 04, 22, 15, all others**
Ball Bar: 04, 22, 15, all others**
UHF: yes

NOTE

All rwys have painted aim points at 6500 ft and 7500 ft except rwy 05R, which has only 6500-ft aim point.

Rwy 22 has no usable overrun

* Four trailer-mounted MLS-Jrs available for installation on rwys 04, 15, 17, 22, and 23. Ch 6 used for all lakebed rwys. If installed on rwy 22, ch 8 used

** With 24-hr notice, PAPI and Ball Bar lights can be moved and configured to meet mission requirements

EDWARDS
EDW

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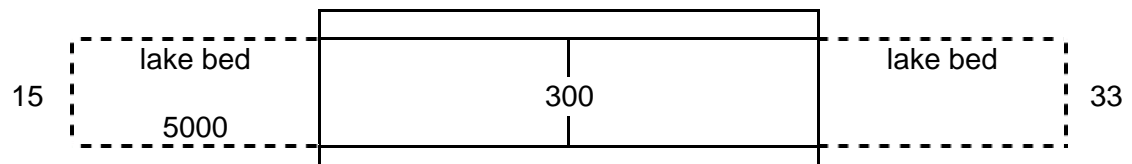
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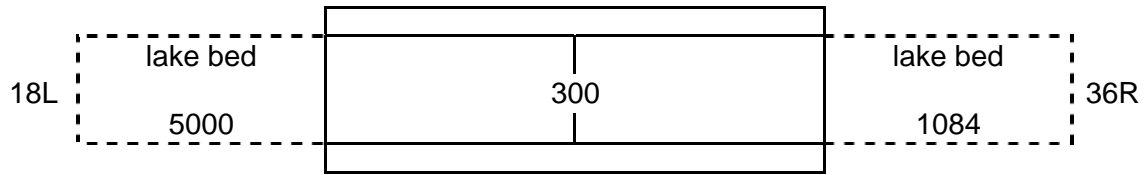
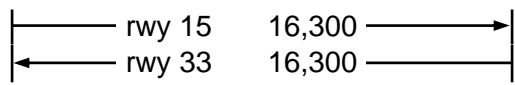
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EDW

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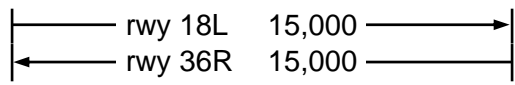
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elev = 2270



elev = 2269

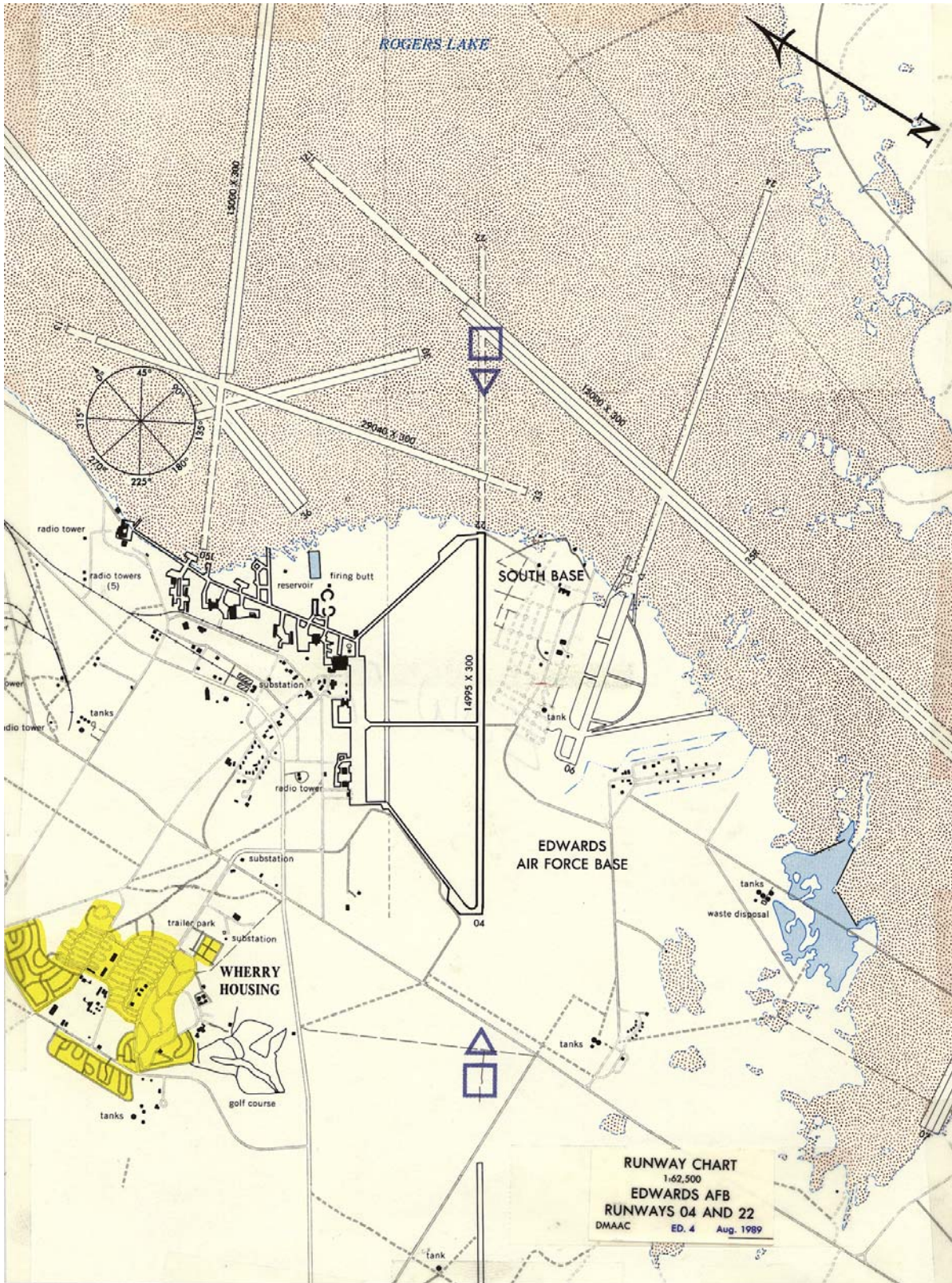
elev = 2269



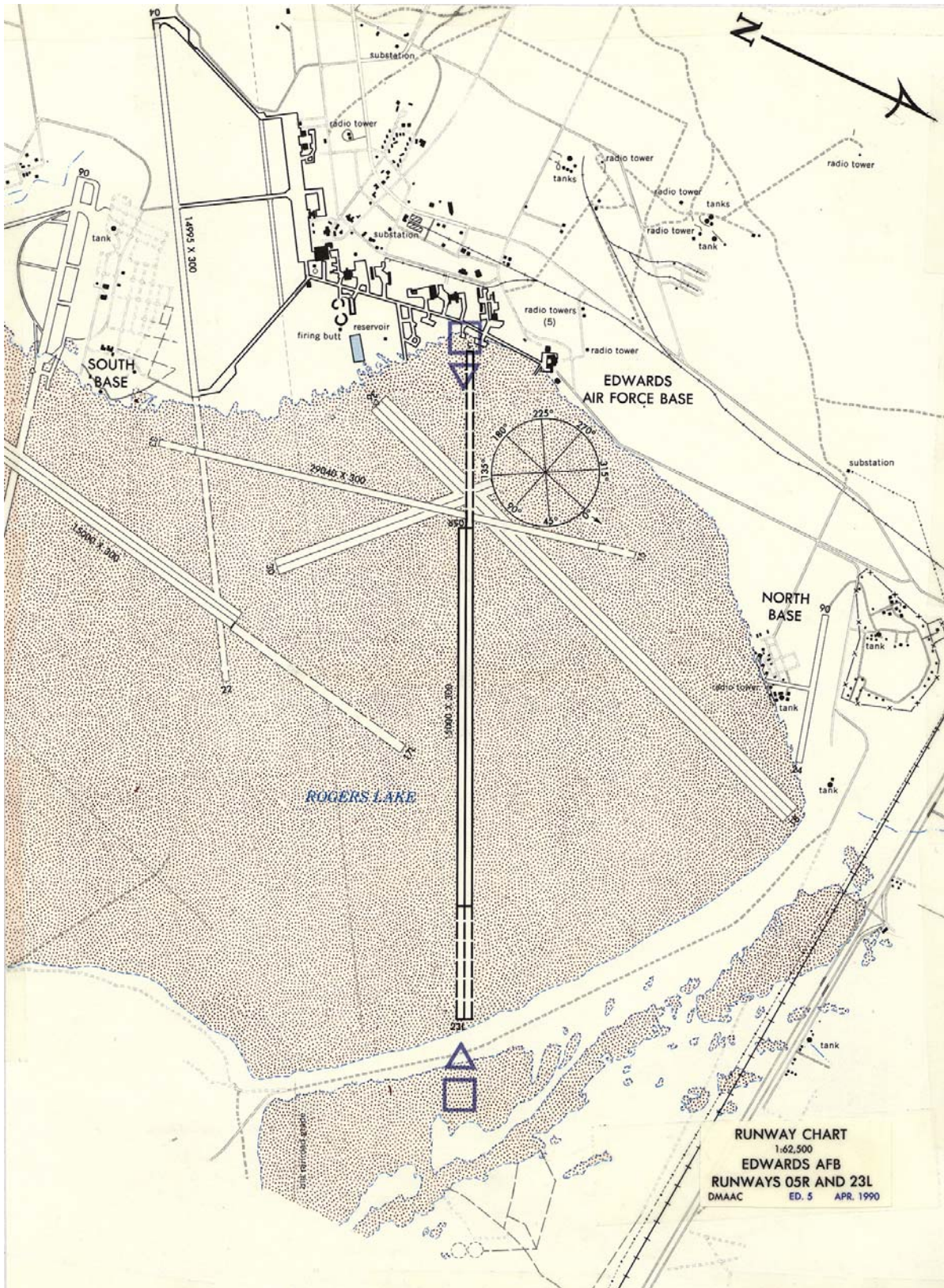
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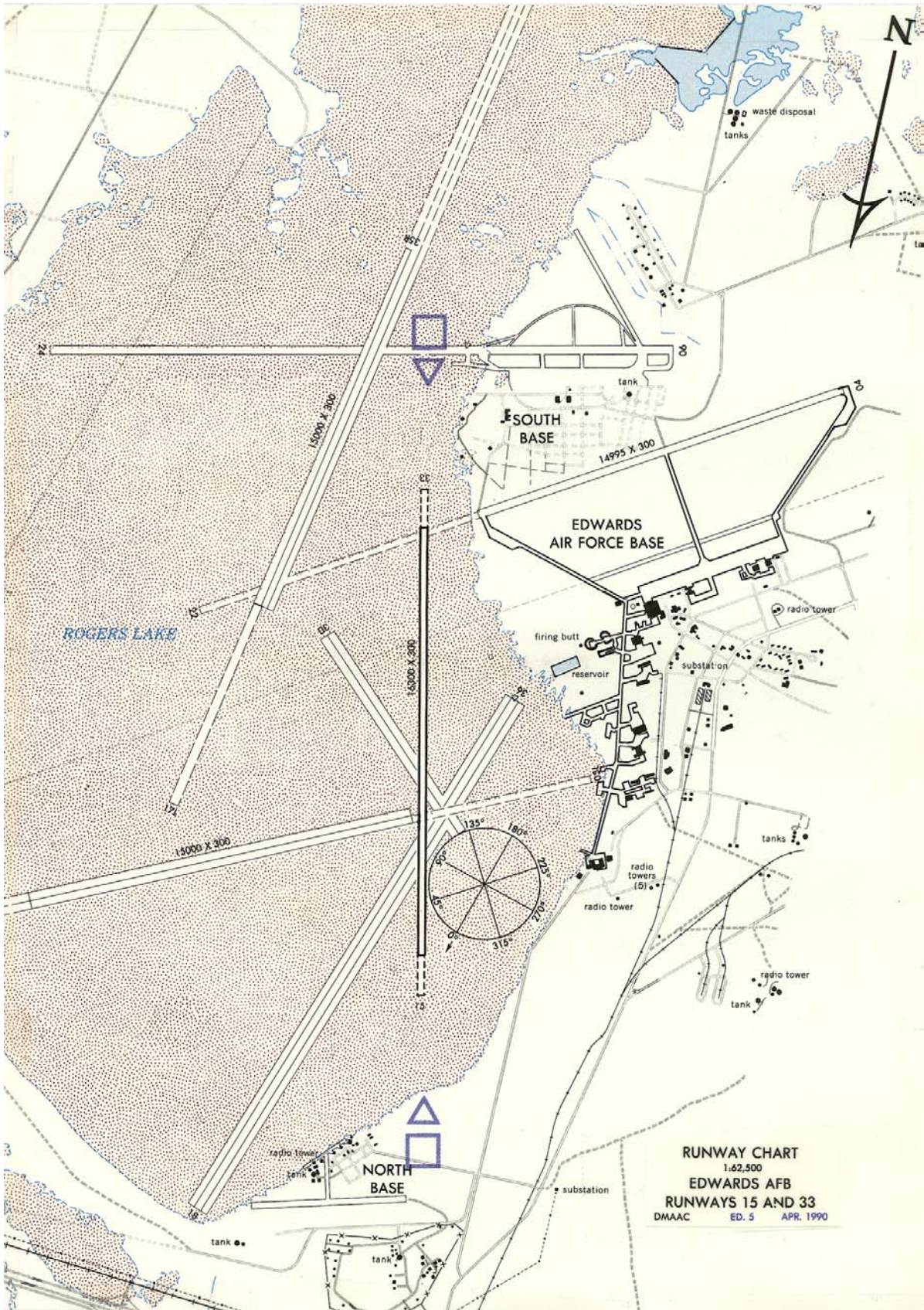
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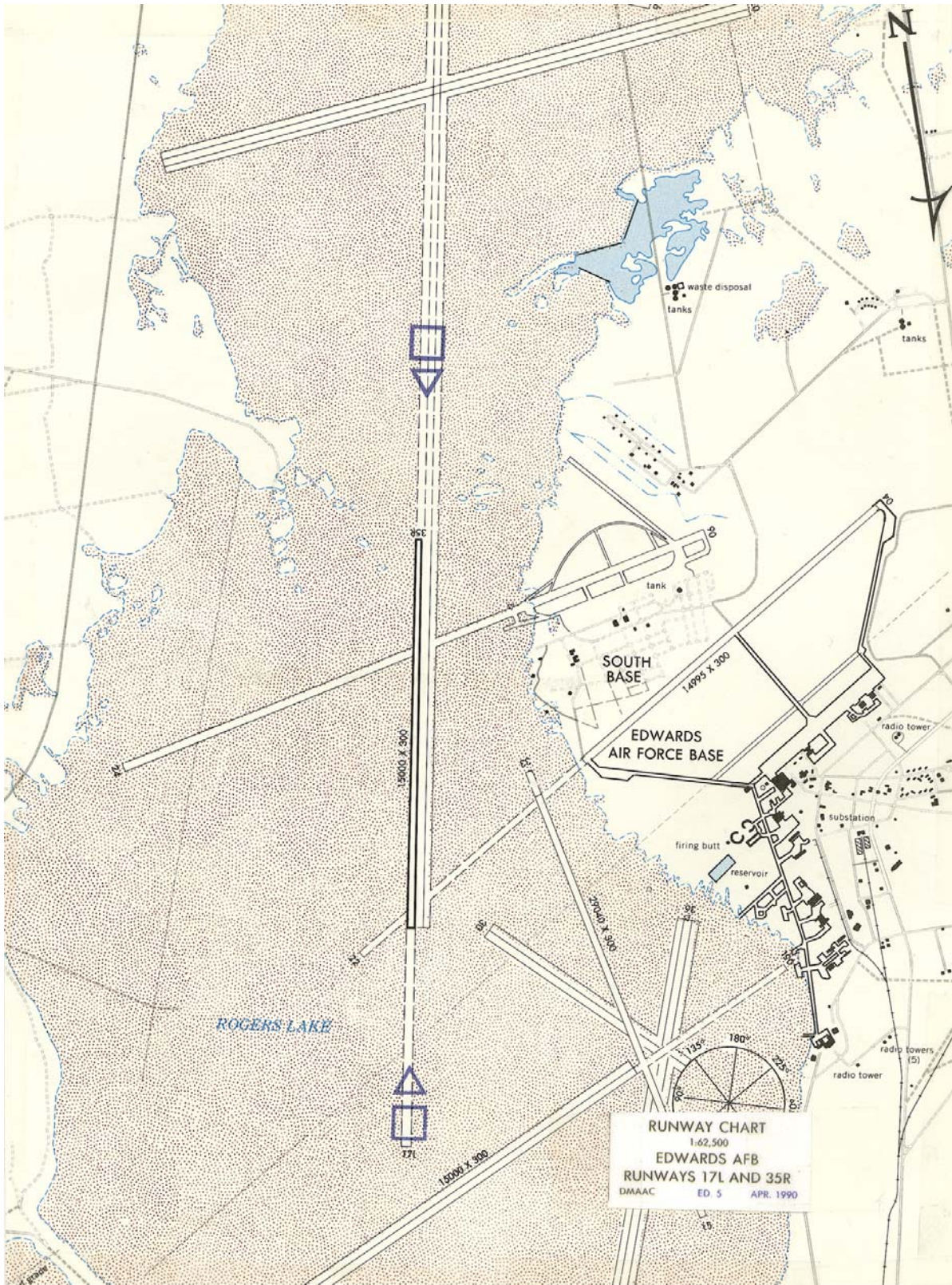
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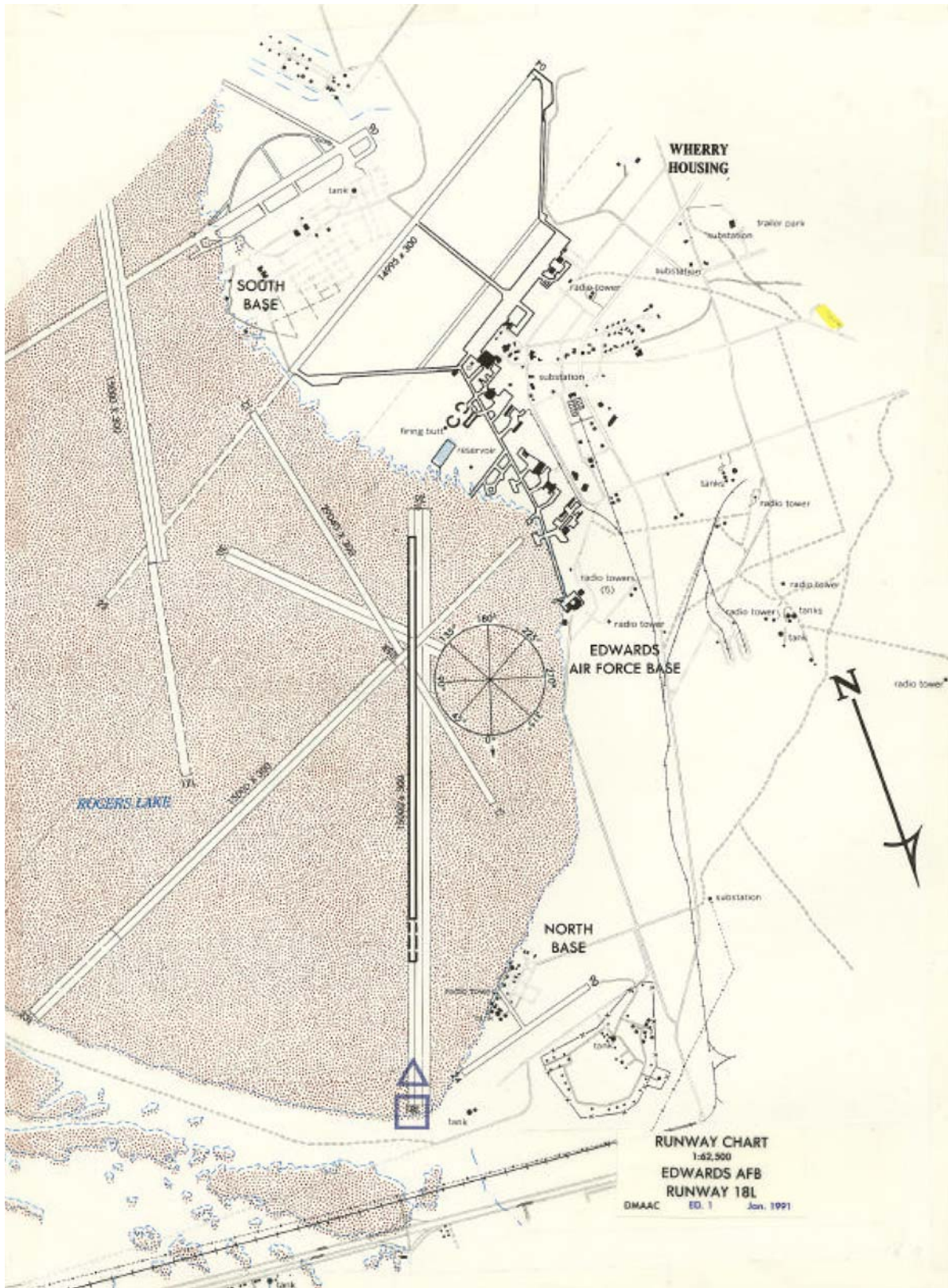
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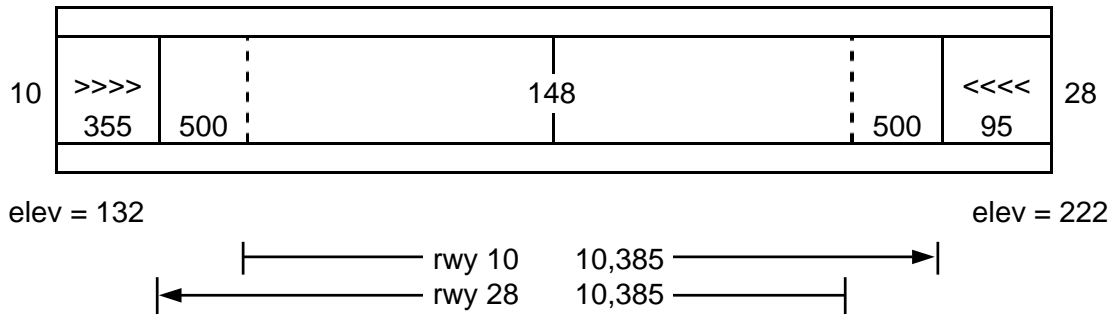
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Mataverí International, Easter Island (Chile)

Table Identifier **EIP**



TACAN: IPA-118x (Pri-DME)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE
 Both over/underruns are unusable

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EIP

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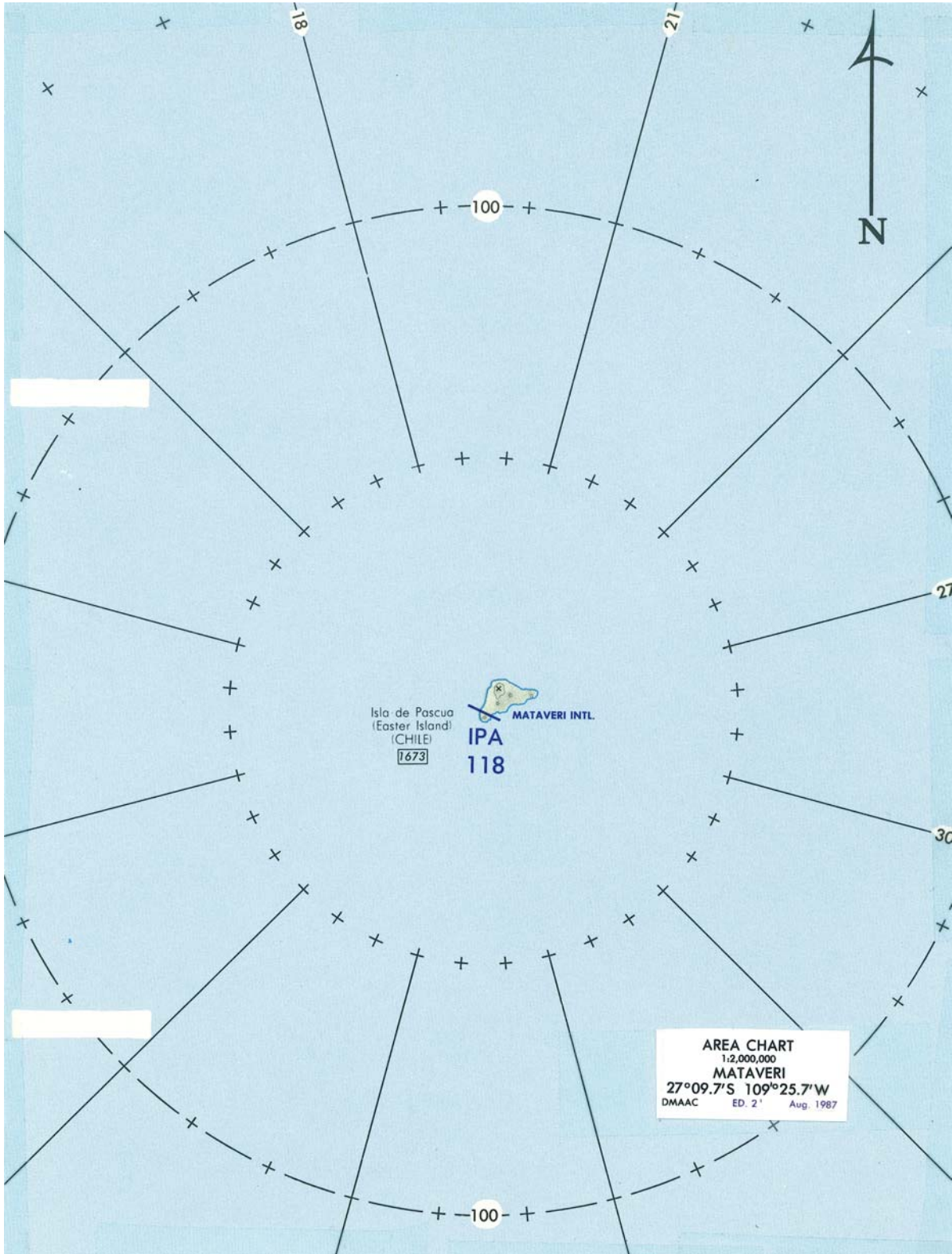
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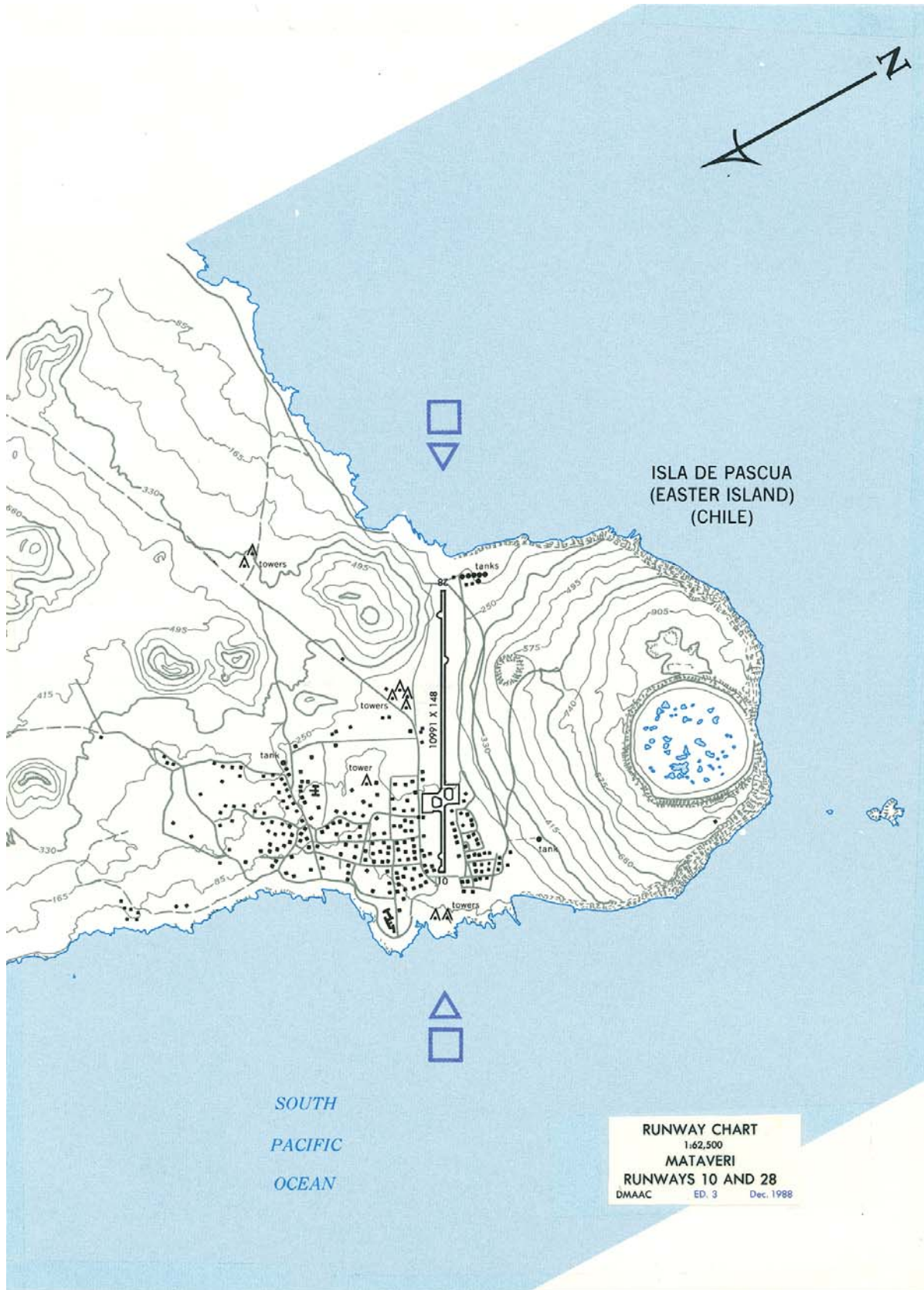
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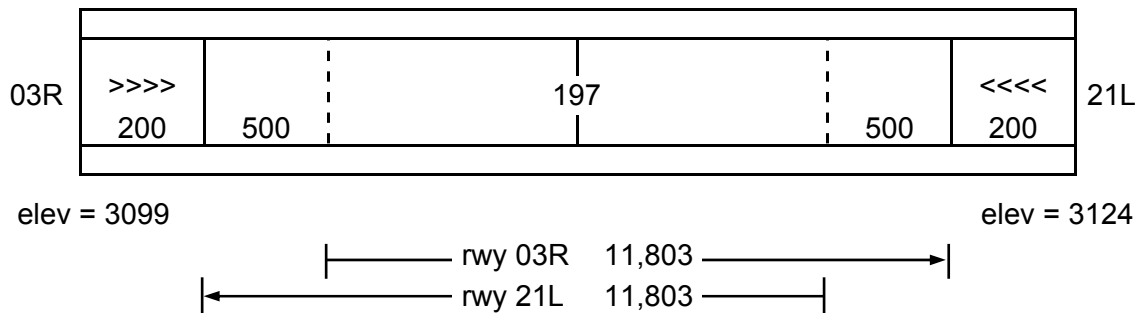
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TACAN: BAG-78x (Pri-DME) BUK-90x (Sec-DME)
I/F above: N: 150k E: clear N: 95k E: 92k
 S: 133k W: clear S: clear W: < 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

ESENBOGA
ESN

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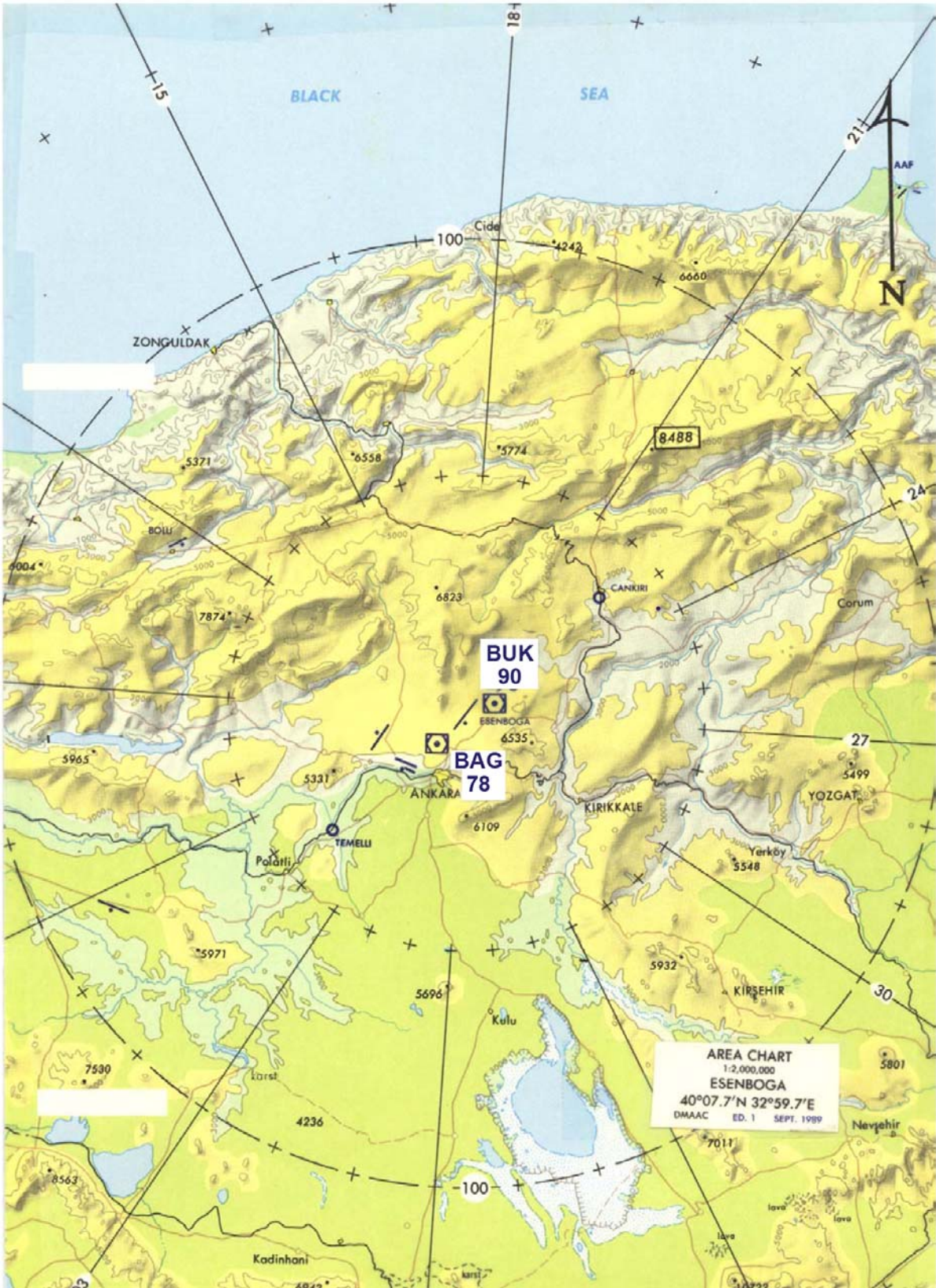
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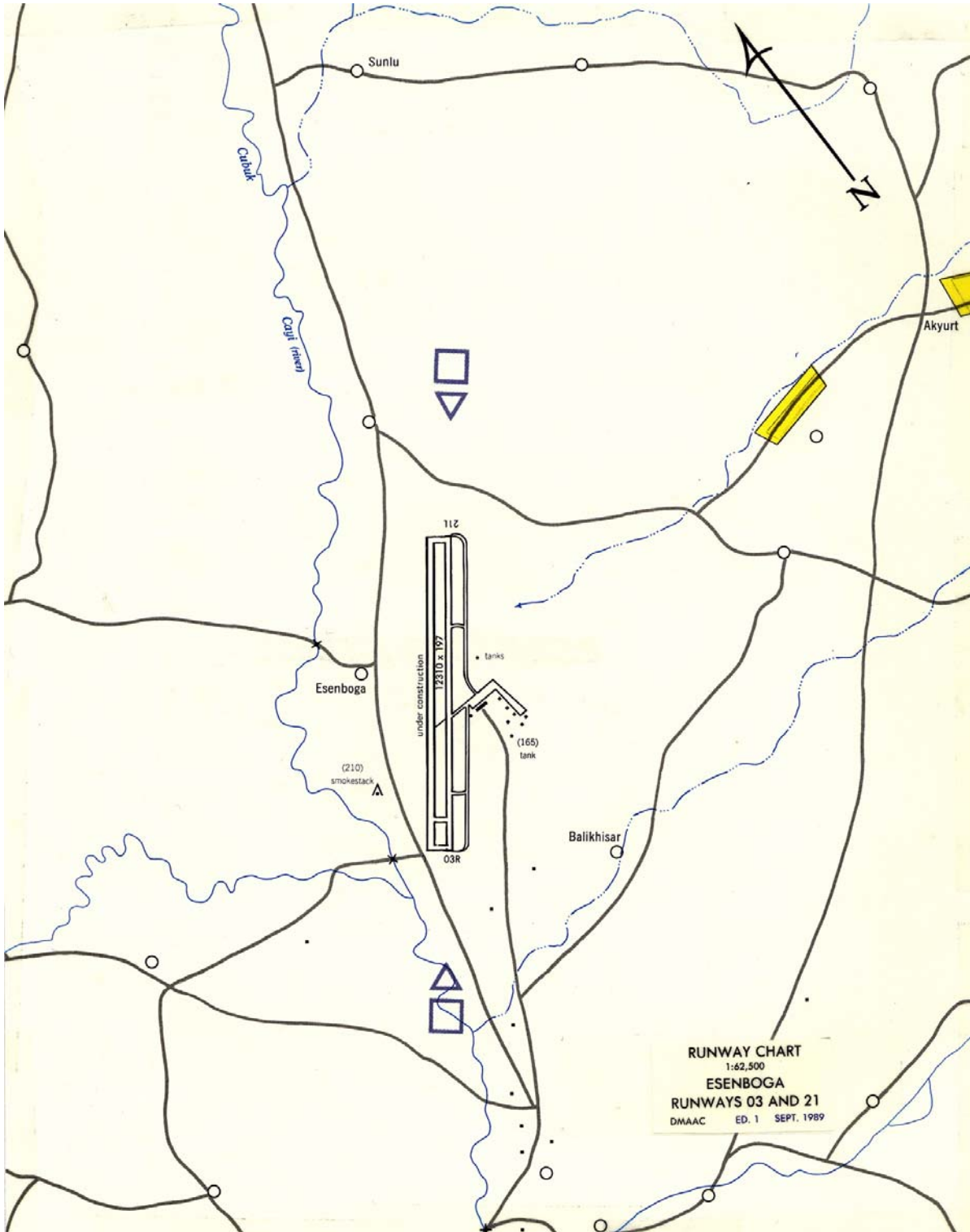
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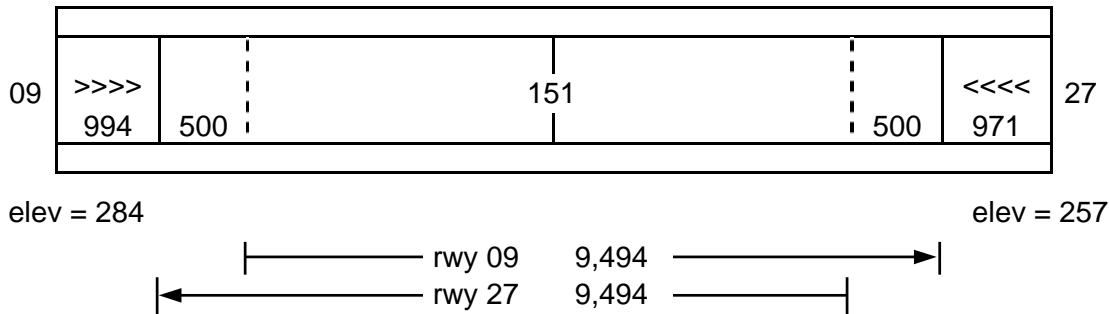
ESENBOGA
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ESENBOGA
ESN





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TACAN: FFA-81x (Pri) BZN-56x (Sec)
I/F above: N: 117k E: < 80k N: clear E: clear
 S: 89k W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both underruns are unusable

FAIRFORD
FFA

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FAIRFORD
FFA

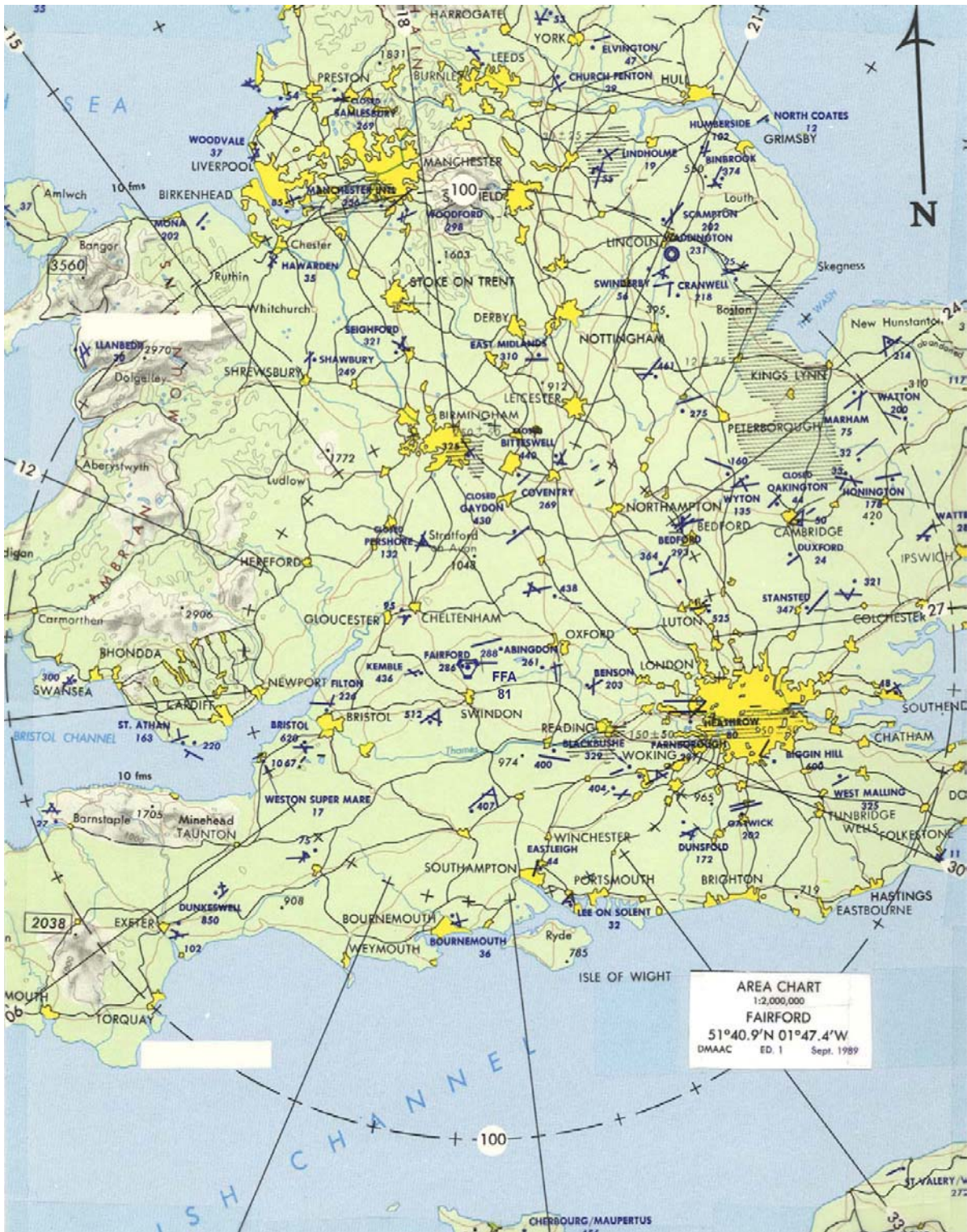
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FFA

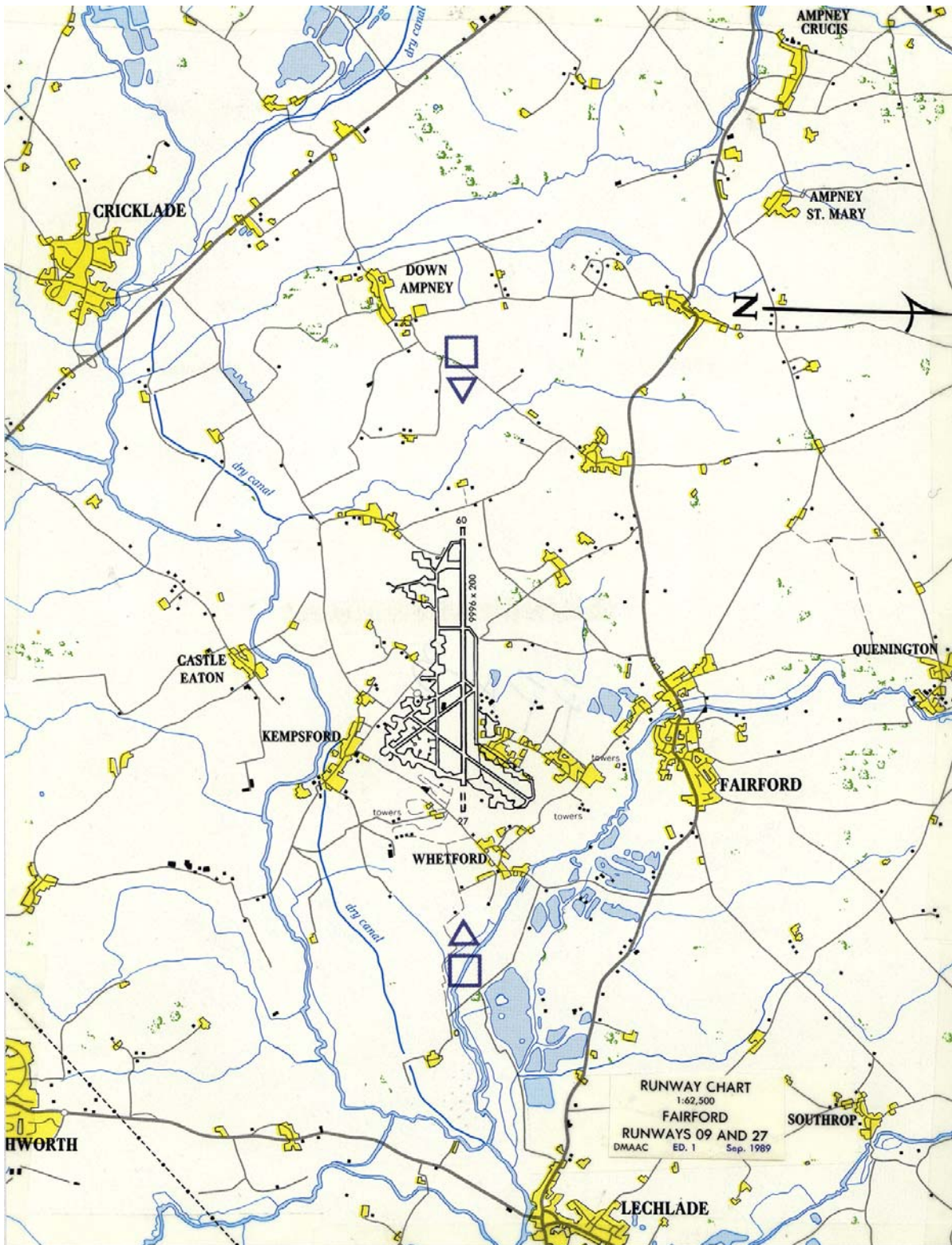
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FFA

FAIRFORD
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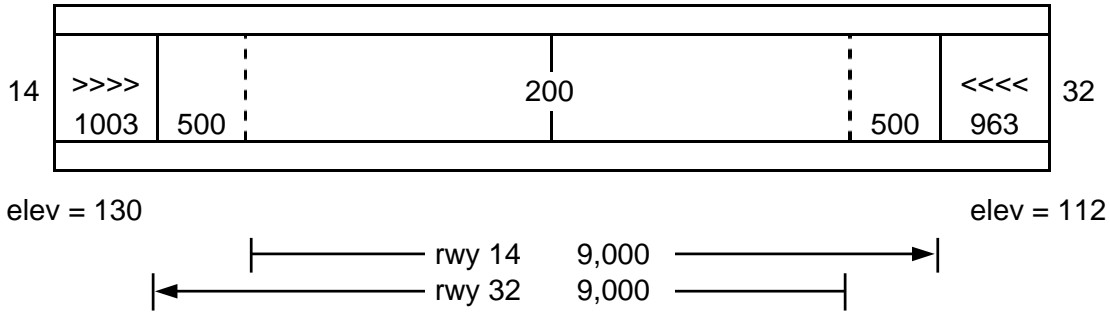
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FFA

FAIRFORD
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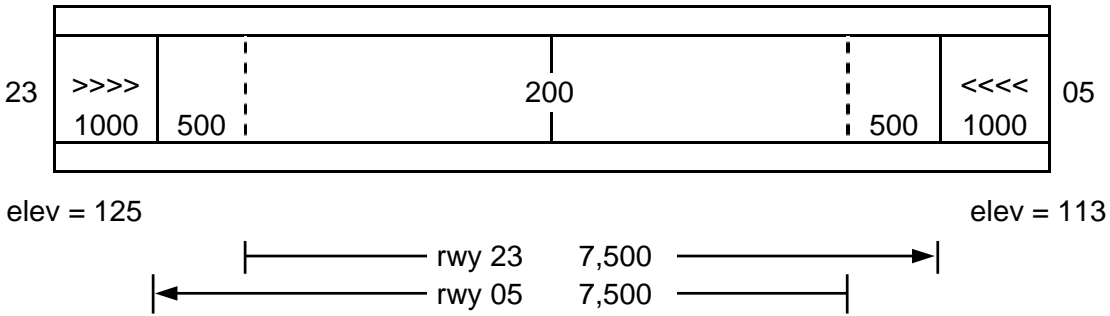




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OTIS
FMH



OTIS
FMH

TACAN: BOS-74x (Pri) PVD-103x (Sec)
I/F above: N: 157k E: clear N: 85k E: clear
 S: clear W: 100k S: 96k W: 84k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

OTIS
FMH

NOTE
 All over/underruns are unusable

OTIS
FMH

OTIS
FMH

OTIS
FMH

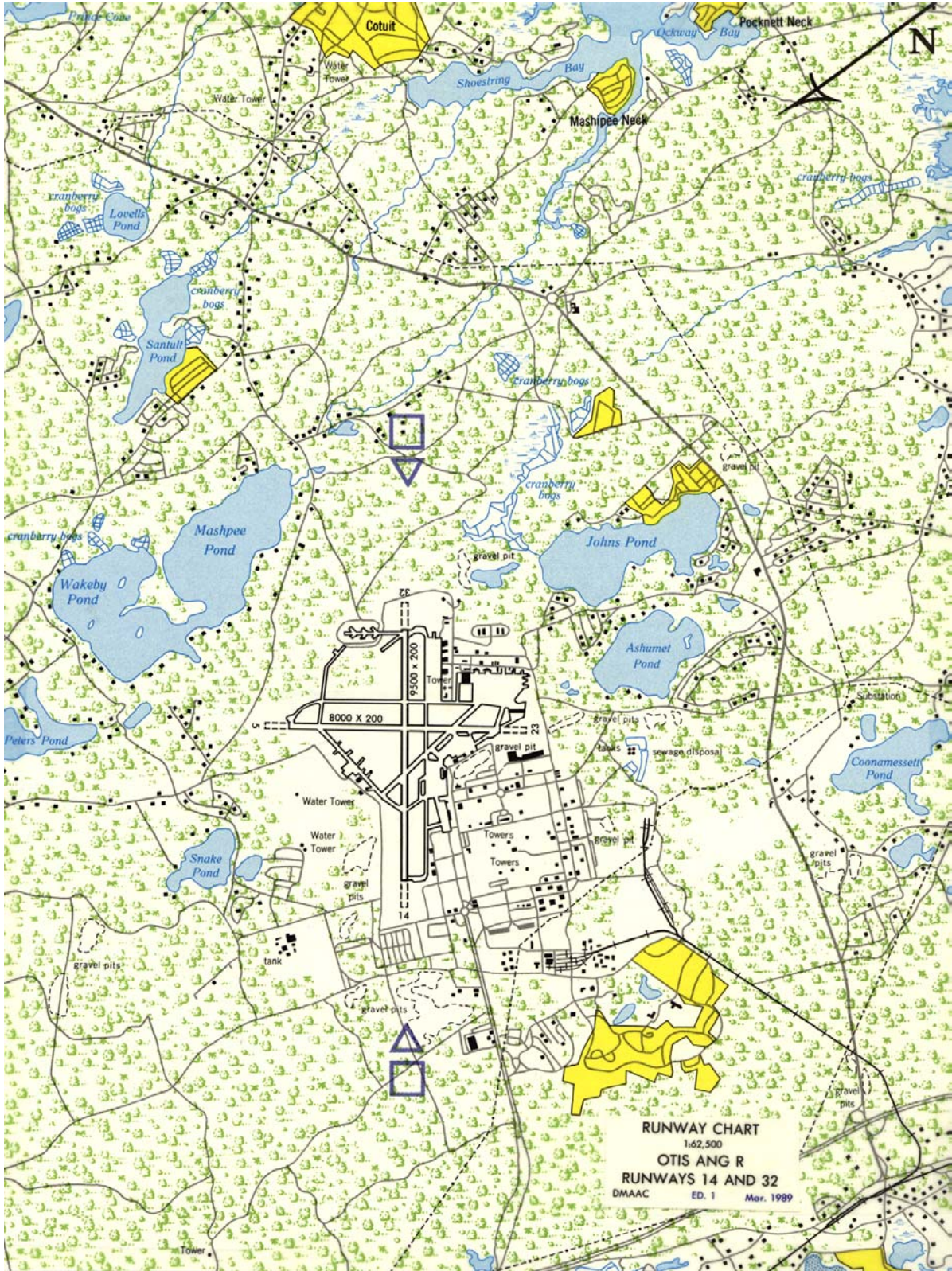
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OTIS RWY FMH 14



FMH-A

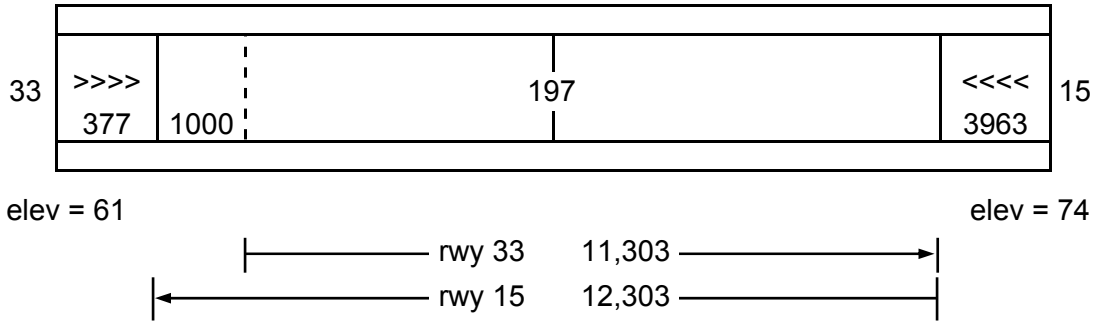
MAPS/ALLGEN G,3

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OTIS RWY FMH 32



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TACAN: FMI-16x (Pri) NIM-53x (Sec)
I/F above: N: clear E: clear N: clear E: 126k
 S: clear W: clear S: 148k W: clear

MLS: (33 - Jr) ch 6
PAPI: 33
Ball Bar: 33
UHF: yes (guard only after L/O)

NOTE

Underrun for FMI 33 is unusable.
 Underrun for FMI 15 is unlit.
 The 377-ft overrun for FMI 15 is unusable.
 Previous site identifier was ITR.
 FMI-16x available only for TAL
 Red lights mark the overrun edges for FMI 33 from the end of the runway extending 600 m (1,968 ft)

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FMI

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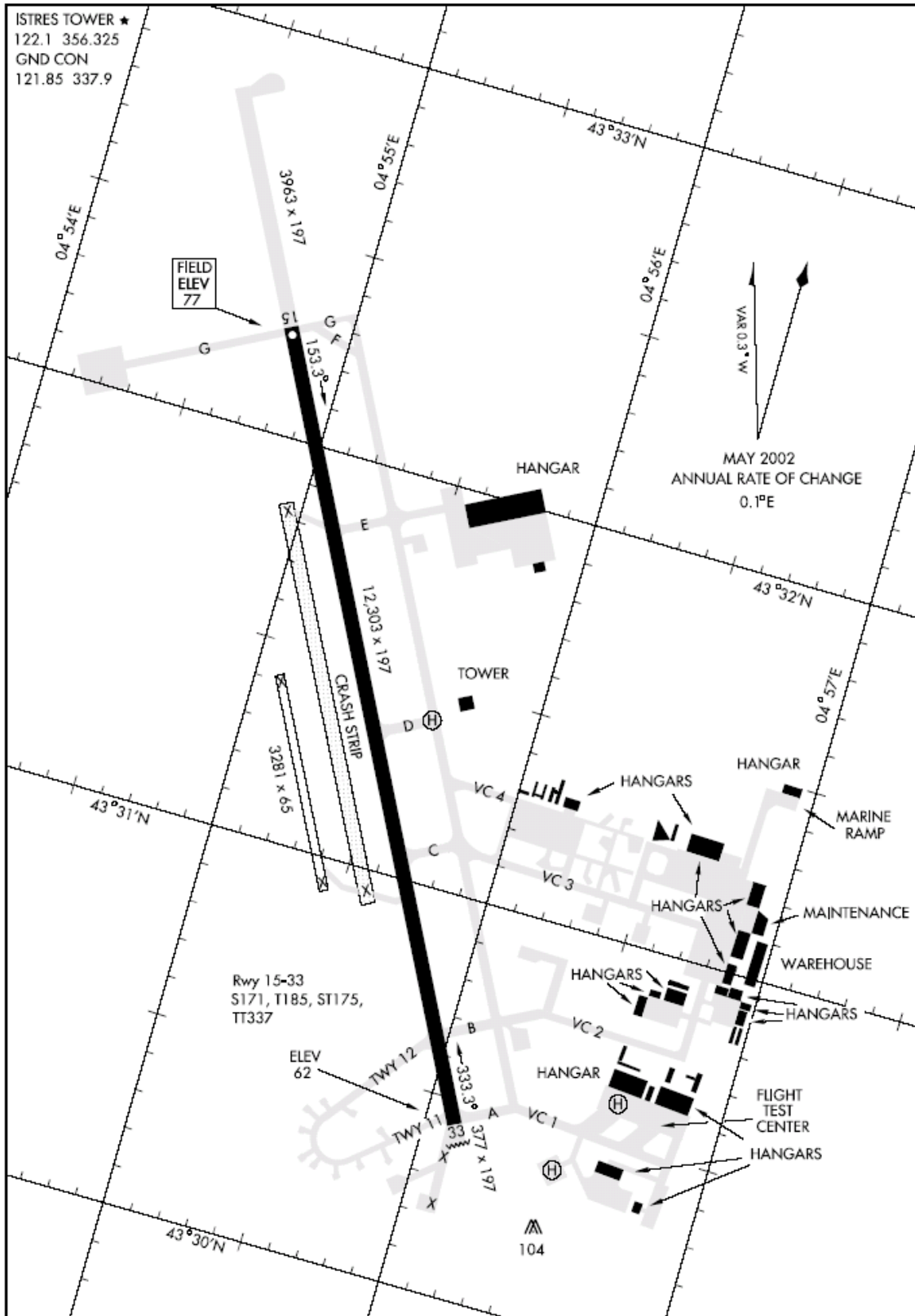
ISTRES AIRPORT DIAGRAM

02136

AIRPORT DIAGRAM

[USAF] AFD-1936 [FAF]

LE TUBE (LFMI)
ISTRES, FRANCE



AIRPORT DIAGRAM

WGS DATUM

ISTRES, FRANCE
LE TUBE (LFMI)

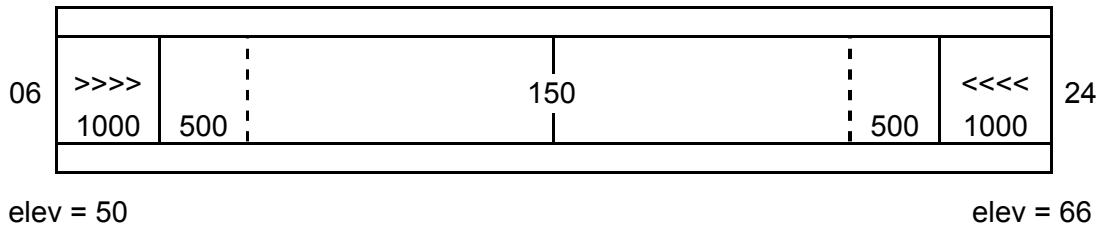
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ISTRES RUNWAY FMI 33



ISTRES RUNWAY FMI 15





TACAN: HTO-83x (Pri) GON-45y (Sec-DME) |
I/F above: N: clear E: clear N: clear E: clear
 S: 86k W: 91k S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both underruns are unusable

FRANCIS GABRESKI
 FOK

FRANCIS GABRESKI
 FOK

FRANCIS GABRESKI
 FOK

FRANCIS GABRESKI
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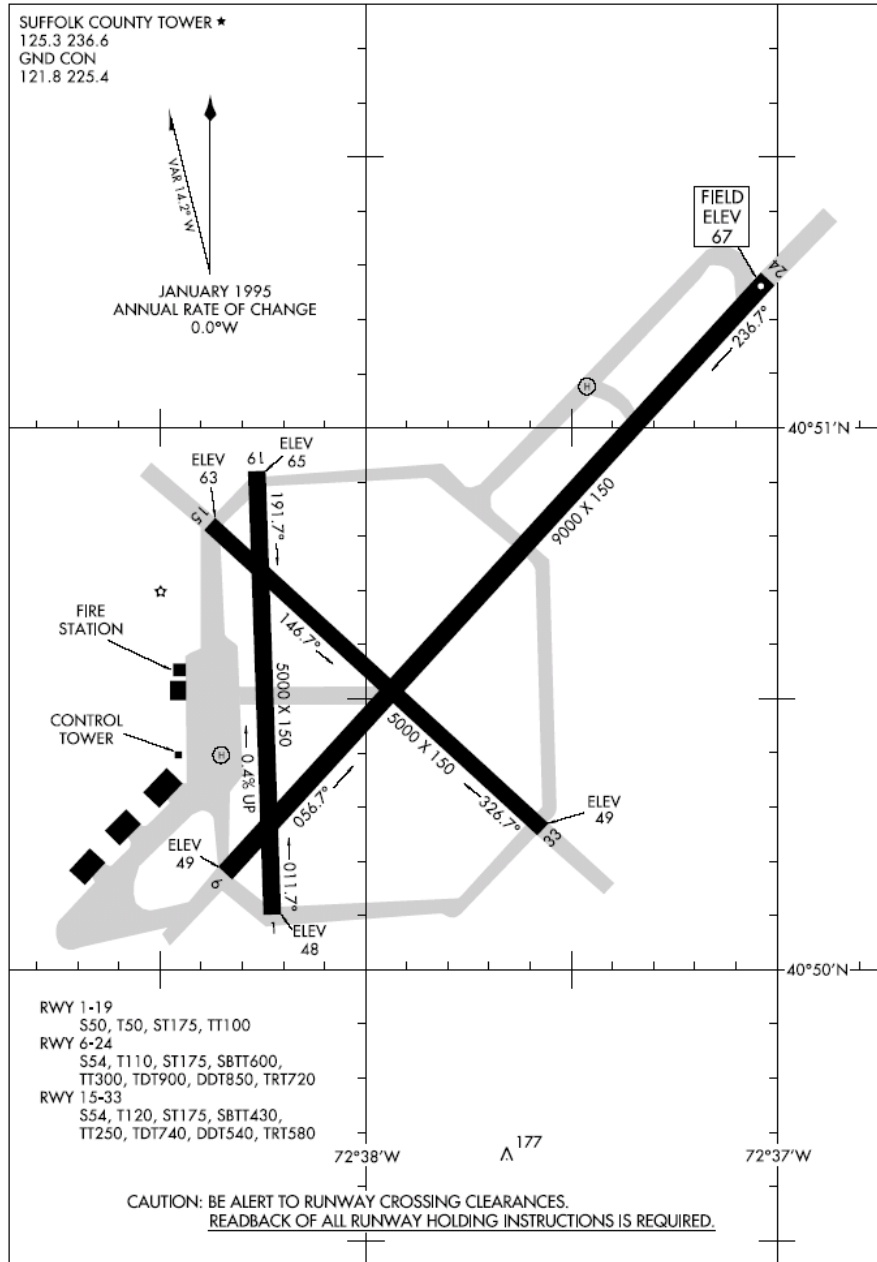
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FRANCIS S. GABRESKI AIRPORT DIAGRAM

03303

AIRPORT DIAGRAM

WESTHAMPTON BEACH/ FRANCIS S. GABRESKI (F'OK)
AL-996 (FAA) WESTHAMPTON BEACH, NEW YORK

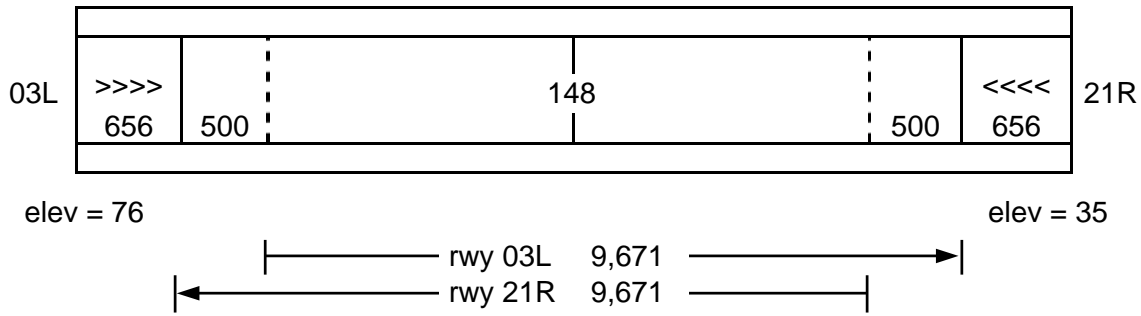


AIRPORT DIAGRAM

03303

WESTHAMPTON BEACH, NEW YORK
WESTHAMPTON BEACH/ FRANCIS S. GABRESKI (F'OK)

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TACAN: TGN-103x (Pri) LPC-97x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

WARNING

Expect headwinds gusting 20 to 30 kt. Expect wind shear at 5000 ft where wind changes from northwesterly to 030

Terrain off end of rwys 03 L/R is hazardous

NOTE

Both rwys suitable. Plan on 03R because it has runway remaining markers and less traffic.

Both rwys have 25-ft shoulders with unusable over/underruns

LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV

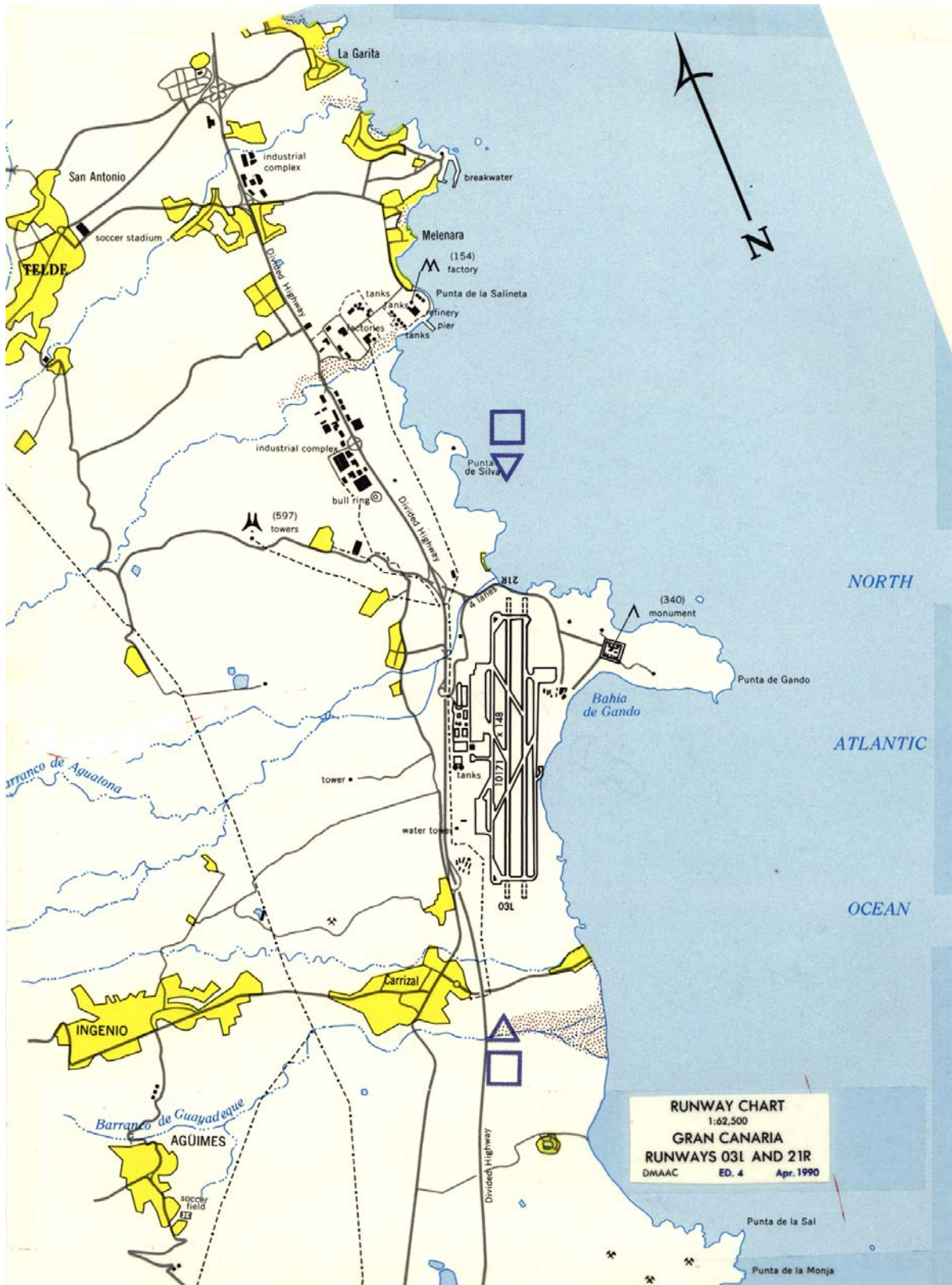
LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV

LAS PALMAS
GDV



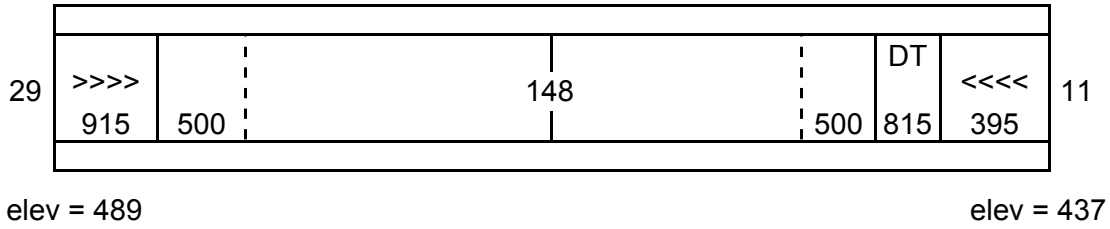


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LAS PALMAS RWY GDV 03L



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TACAN: PHL-93x (Pri-DME) RKL-20x (Sec)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: 132k S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Previous site identifier was SUD.
 This site usable only with 6 months prior notice.
 Both over/underruns are unusable.
 The 815-ft displaced threshold on rwy 11 is unusable

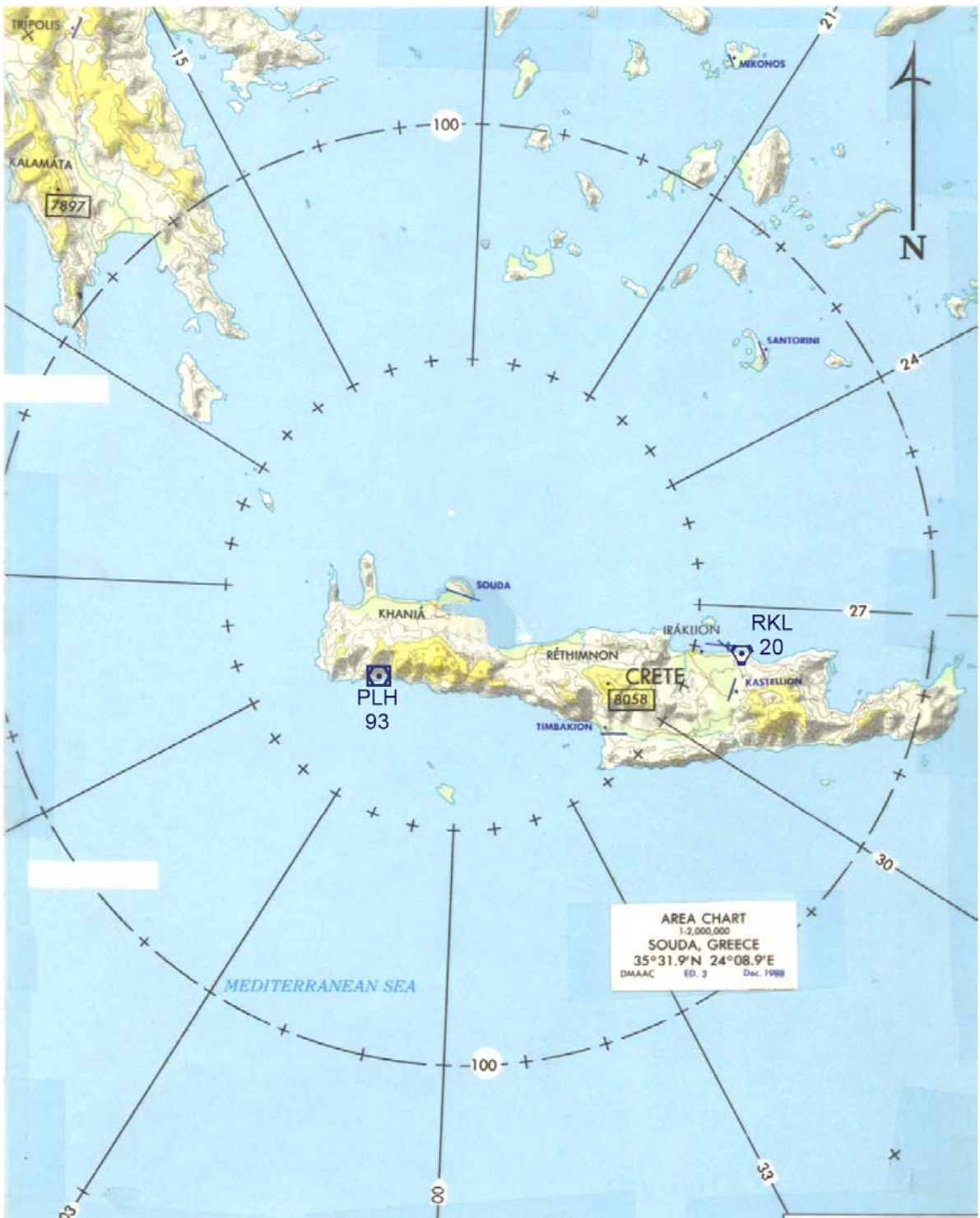
SOUDA
GSA

SOUDA
GSA

SOUDA
GSA

SOUDA
GSA

SOUDA
GSA



SOUDA
GSA

SOUDA
GSA

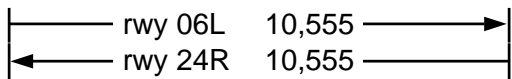
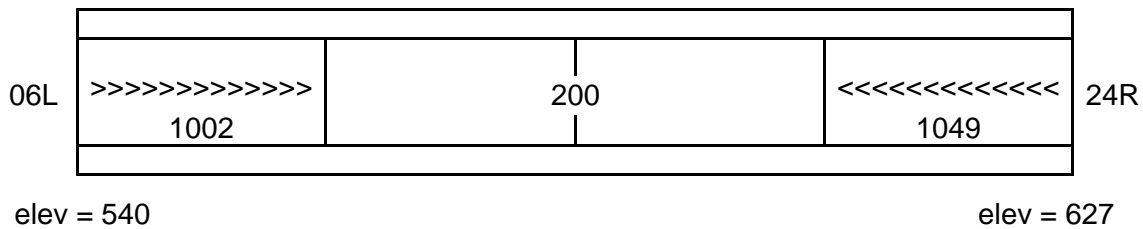
SOUDA
GSA

SOUDA
GSA

SOUDA
GSA

SOUDA
GSA

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TACAN: UAM-54x (Pri) UNZ-100x (Sec)
I/F above: N: clear E: clear N: clear E: clear
S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

ANDERSEN
GUA

ANDERSEN
GUA

ANDERSEN
GUA

ANDERSEN
GUA

ANDERSEN
GUA

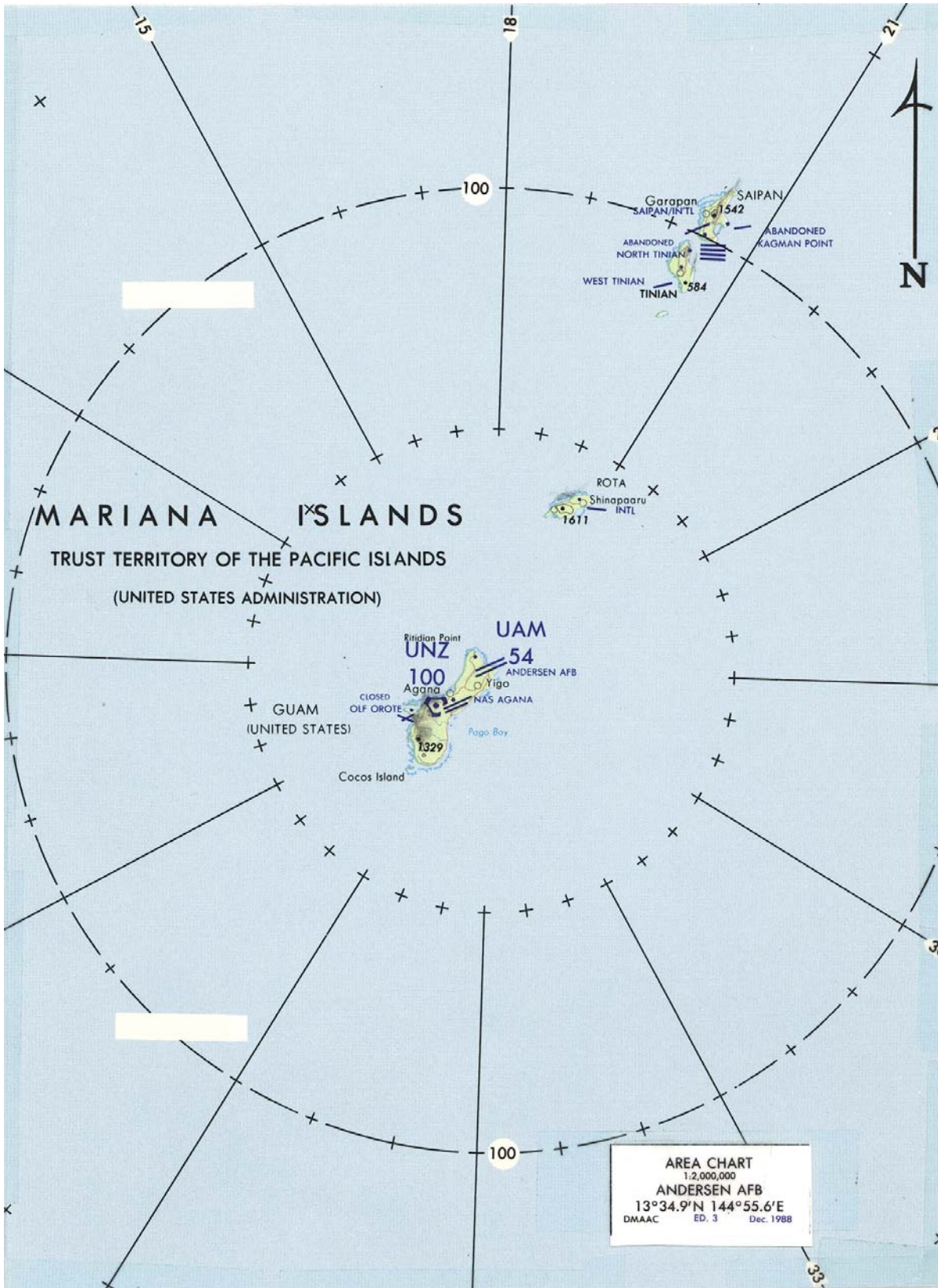
ANDERSEN
GUA

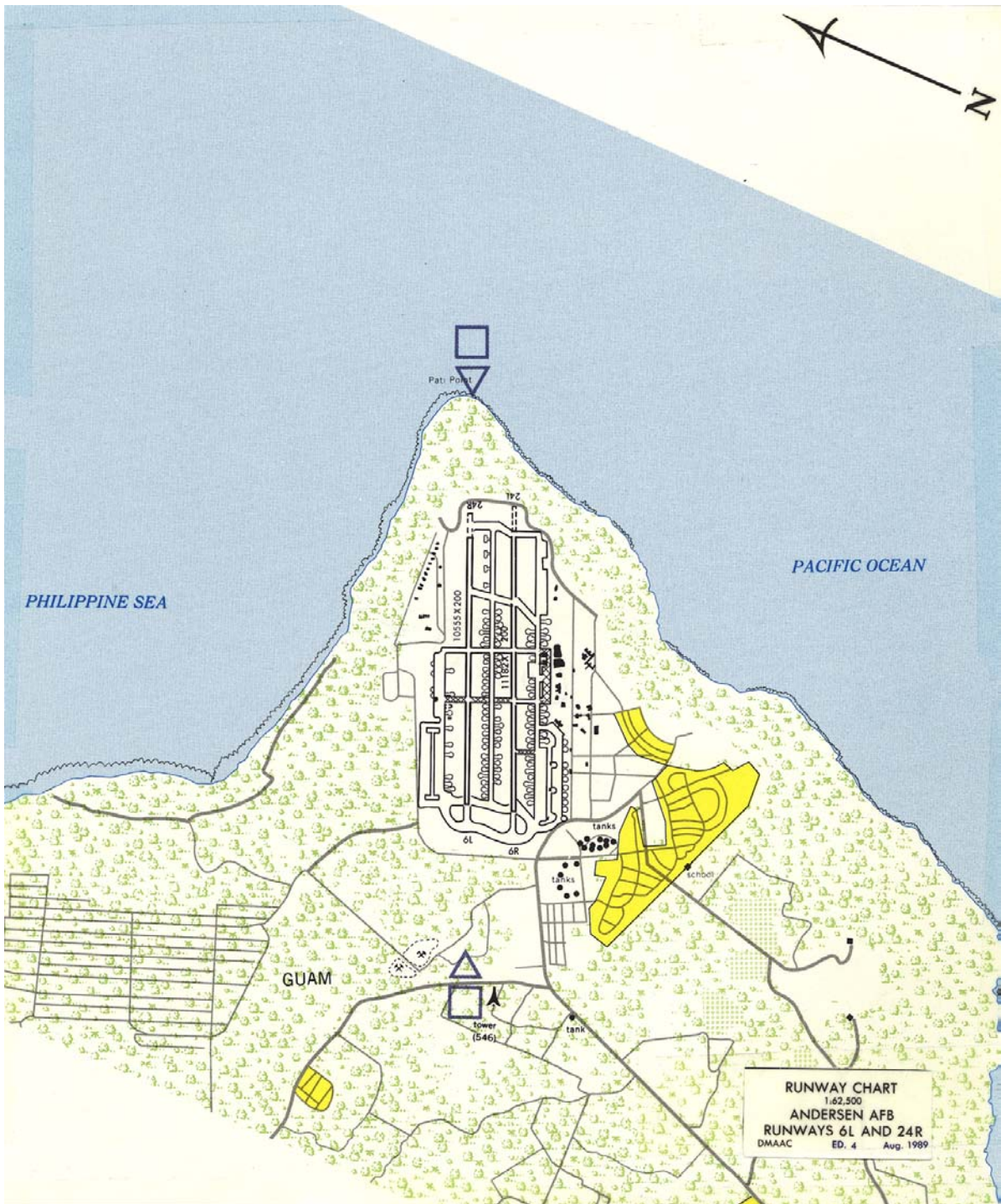
ANDERSEN
GUA

ANDERSEN
GUA

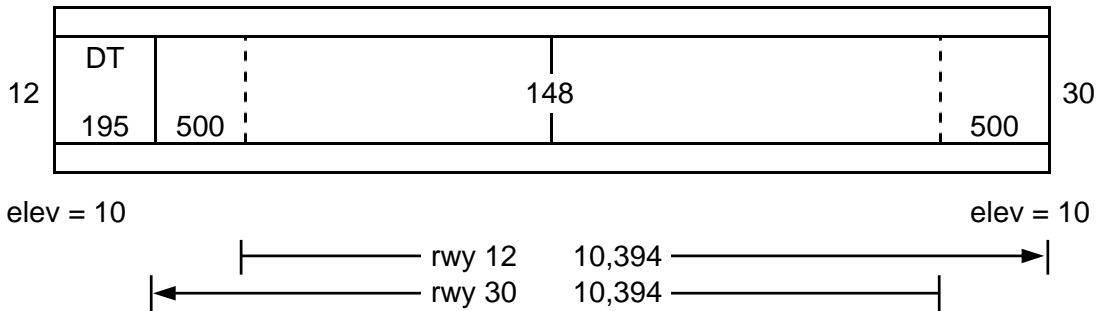
ANDERSEN
GUA

ANDERSEN
GUA





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HAO
HAO

TACAN: HAO-85x (Pri-DME)
I/F above: N: clear E: clear
 S: clear W: clear

HAO
HAO

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE
 The 195-ft displaced threshold on
 rwy 12 is unusable

HAO
HAO

HAO
HAO

HAO
HAO

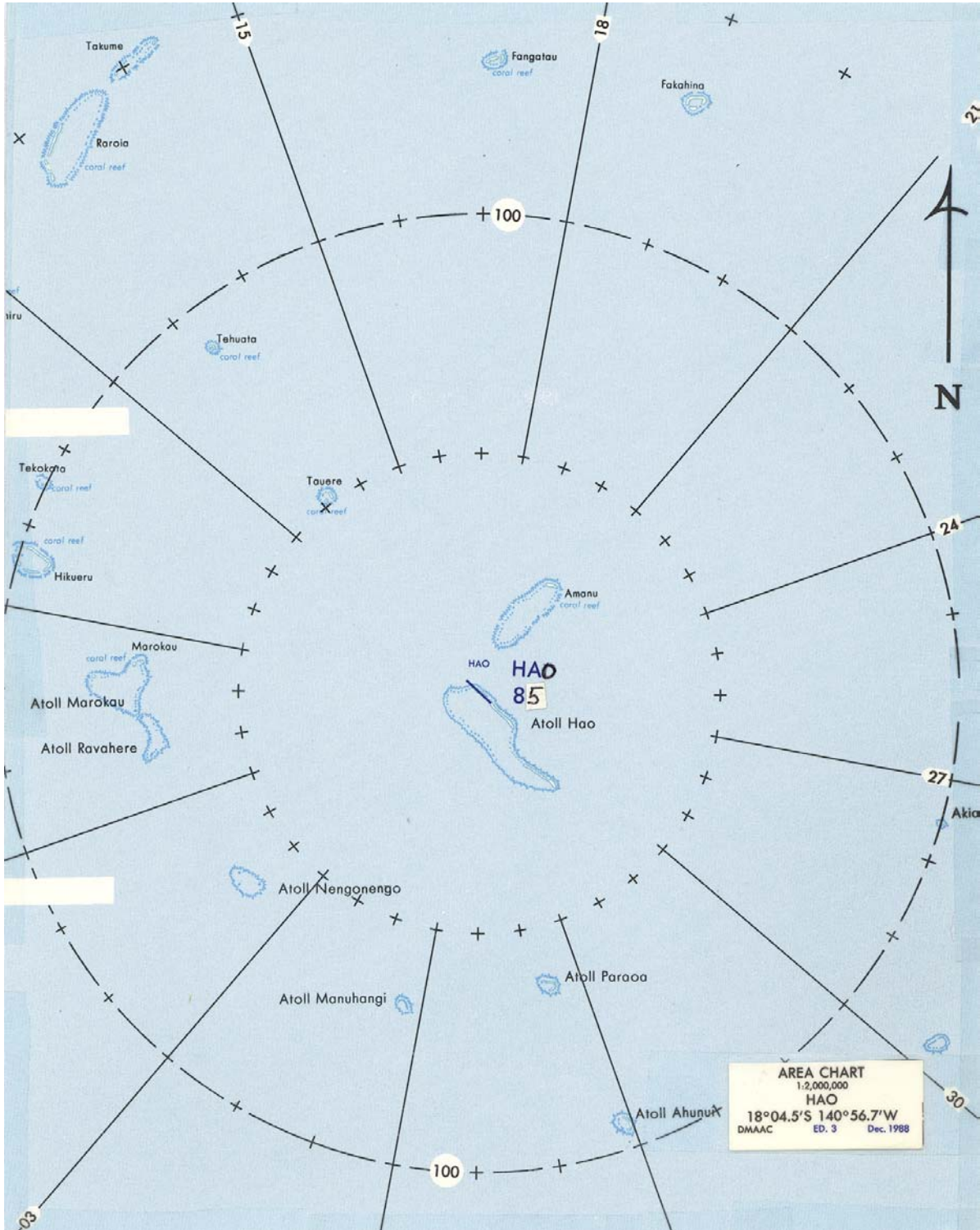
HAO
HAO

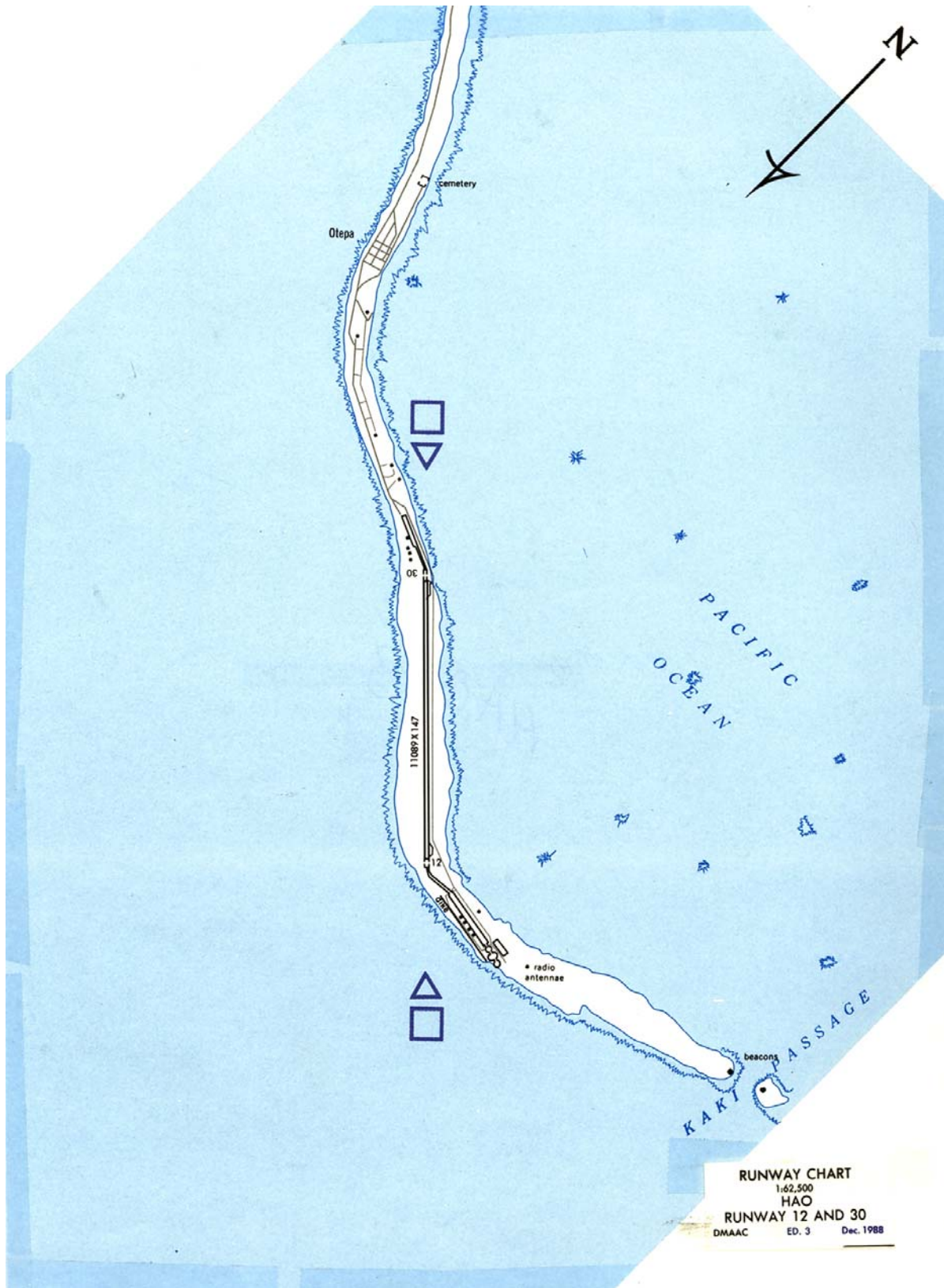
HAO
HAO

HAO
HAO

HAO
HAO

HAO
HAO





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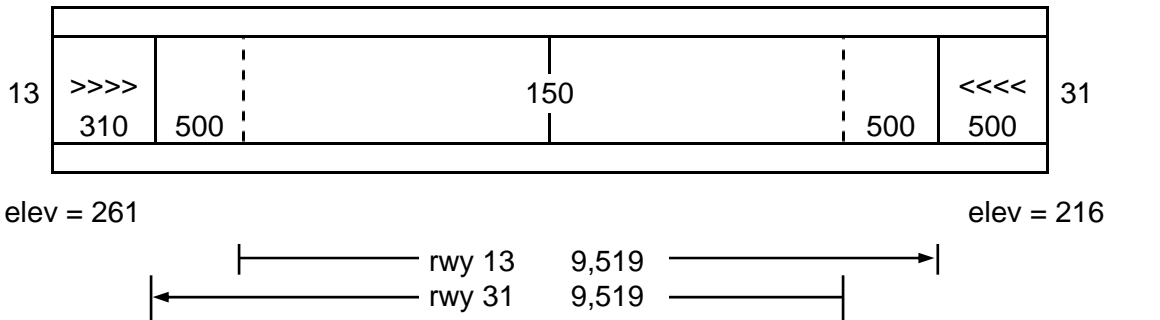
HAO ATOLL RWY HAO 30



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Ascension Aux AF, Ascension Island

Table Identifier **HAW**



TACAN: ASI-59x (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

ASCENSION
HAW

ASCENSION
HAW

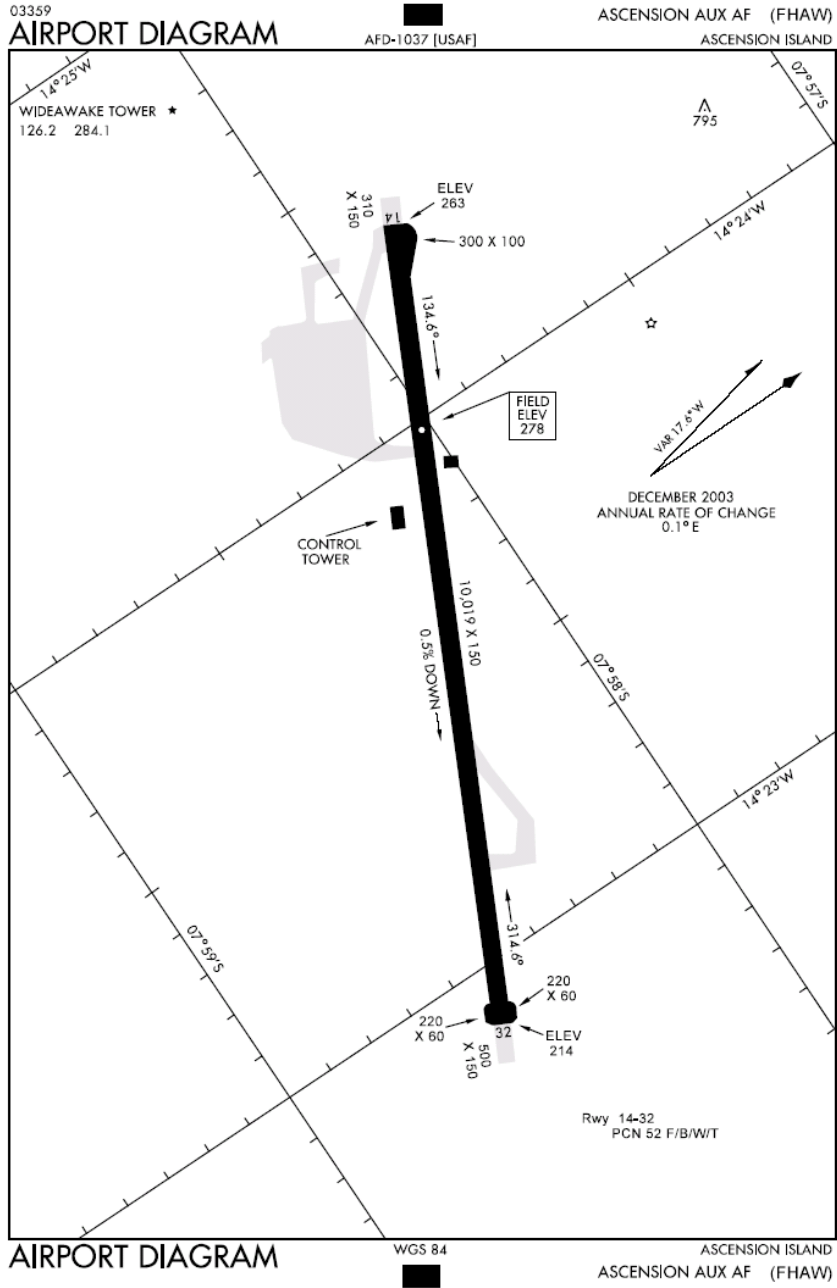
ASCENSION
HAW

ASCENSION
HAW

ASCENSION
HAW

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ASCENSION AIRPORT DIAGRAM



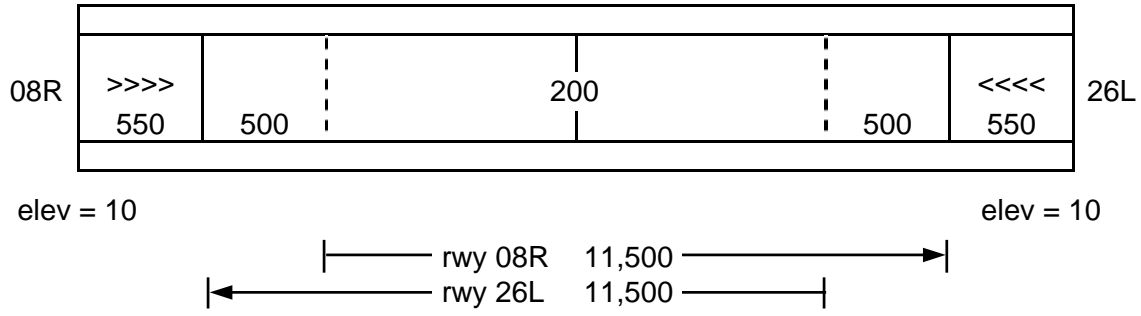
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ASCENSION RWY HAW 14



ASCENSION RWY HAW 14





TACAN: HNL-95x (Pri) NGF-93x (Sec)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

HONOLULU
HNL

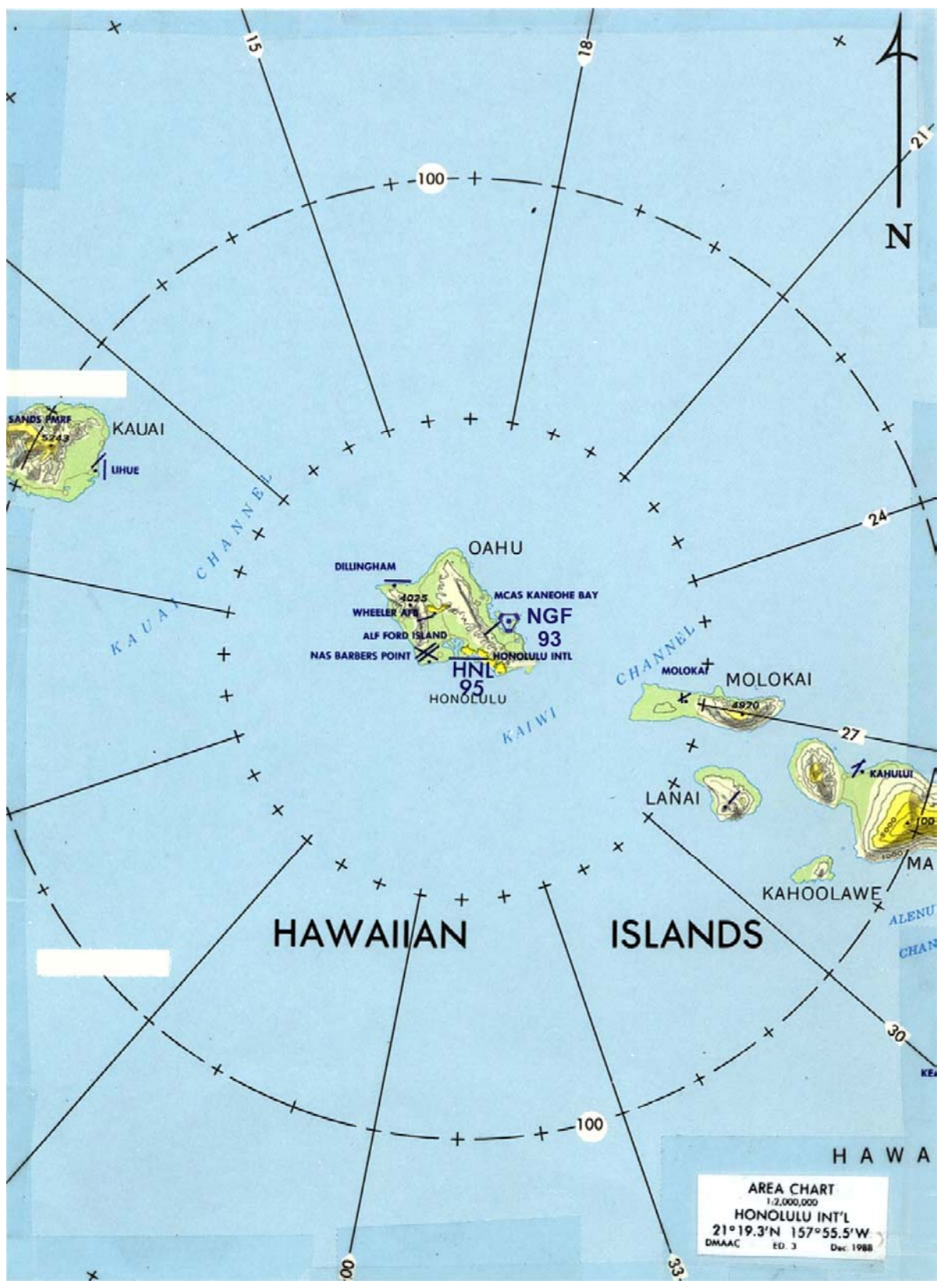
HONOLULU
HNL

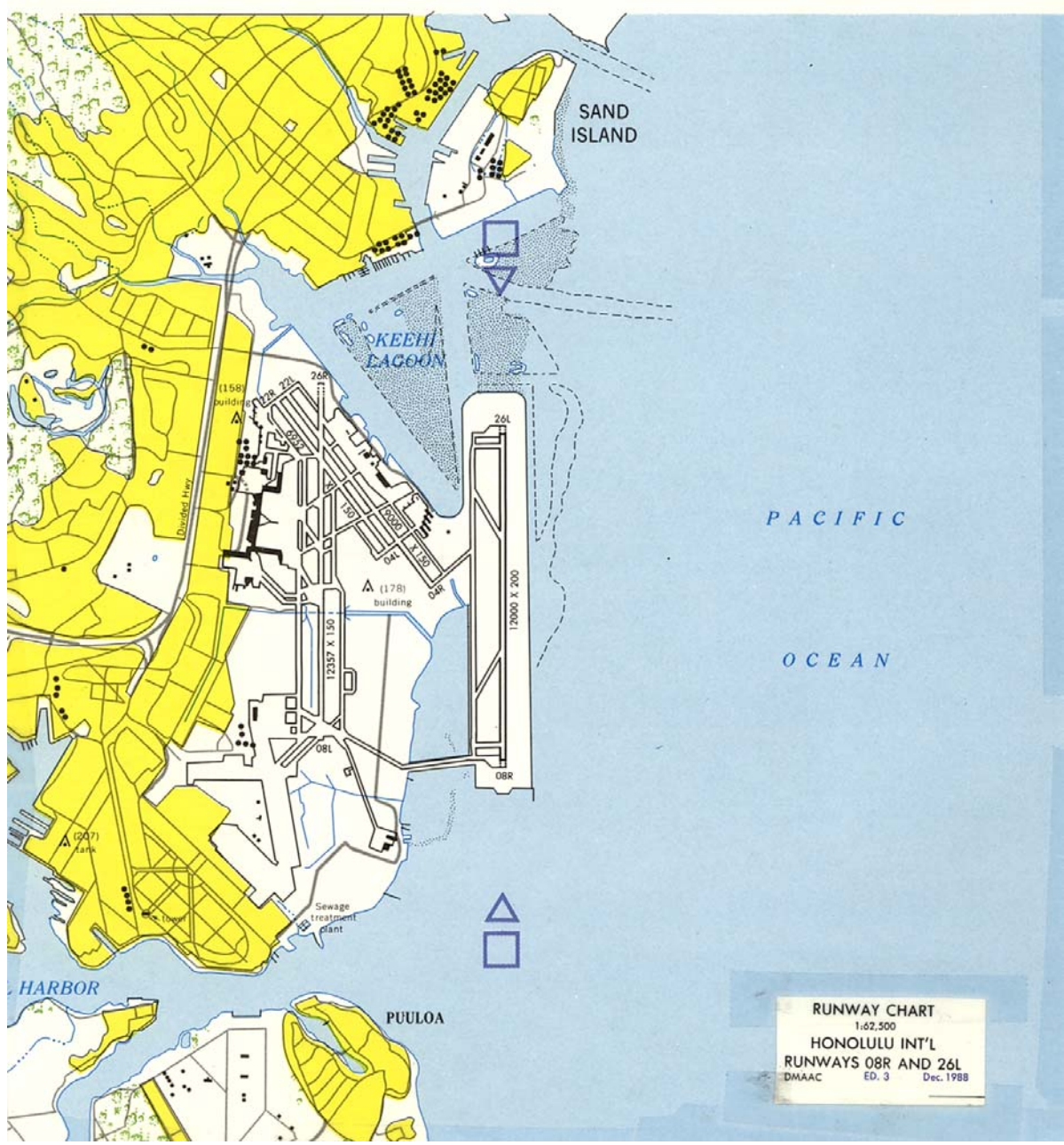
HONOLULU
HNL

HONOLULU
HNL

HONOLULU
HNL

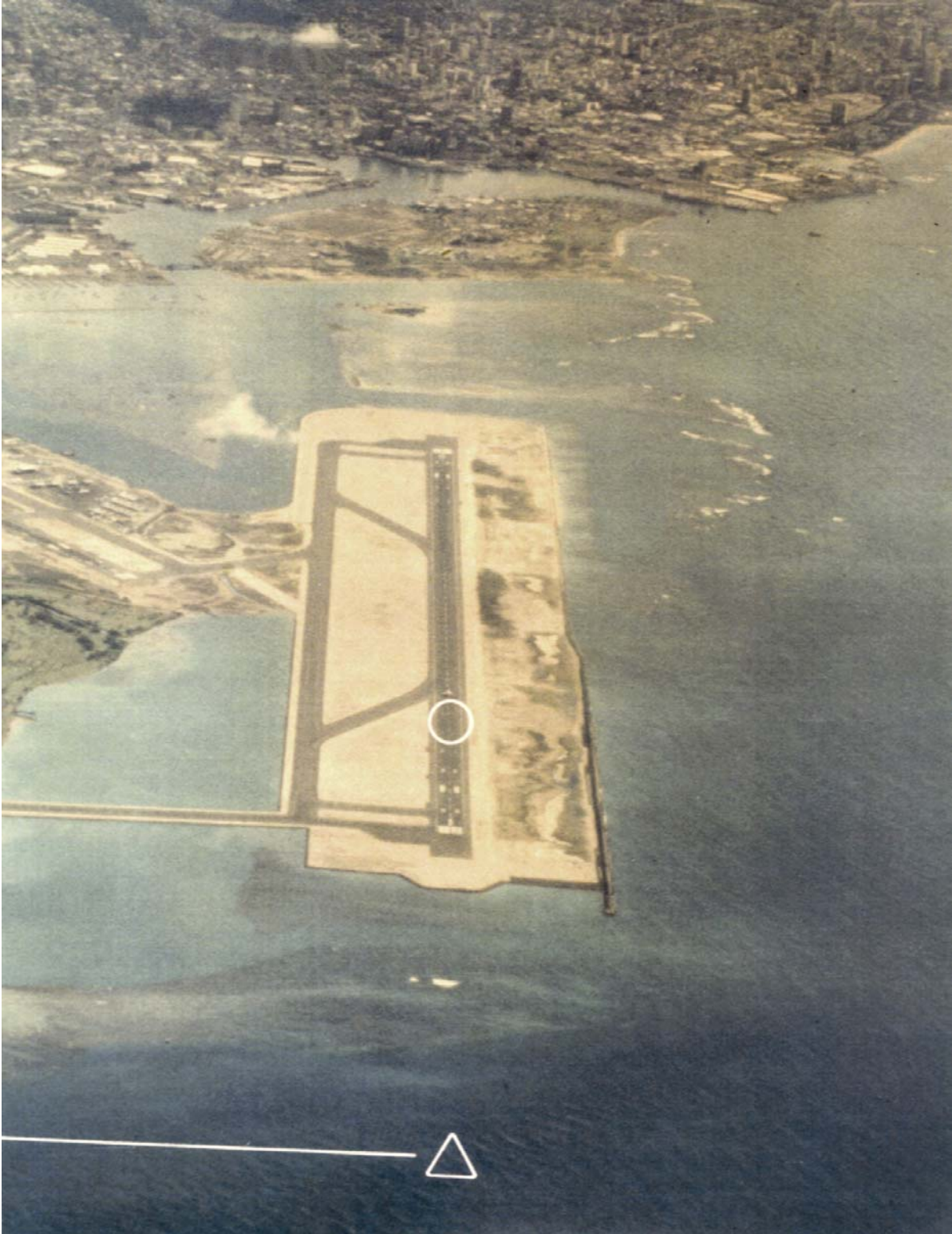
HONOLULU
HNL
HONOLULU
HNL
HONOLULU
HNL
HONOLULU
HNL
HONOLULU
HNL





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HONOLULU RWY HNL 08R



HNL-A

Honolulu 08R
1/15/82
S81-277144
EDITION 1-6/89
MAPS/ALL/GEN G

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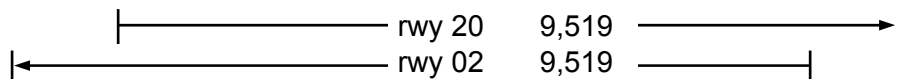
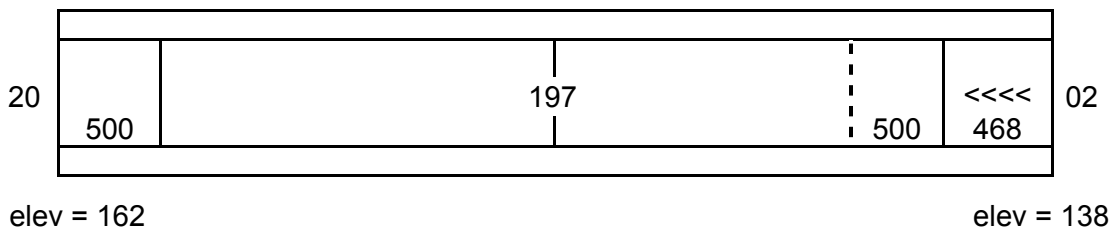
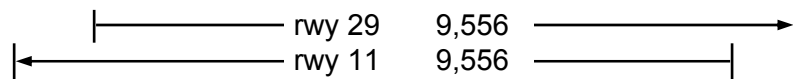
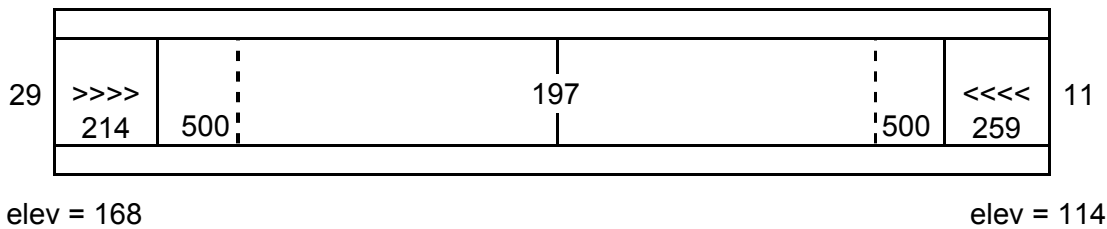
HONOLULU RWY HNL 26L



Honolulu 26L
1/15/82
S81-277147
EDITION 1-6/89
MAPS/ALL/GEN G

HNL-C

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TACAN: KEF-57x (Pri) HL-44x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 All over/underruns are unusable

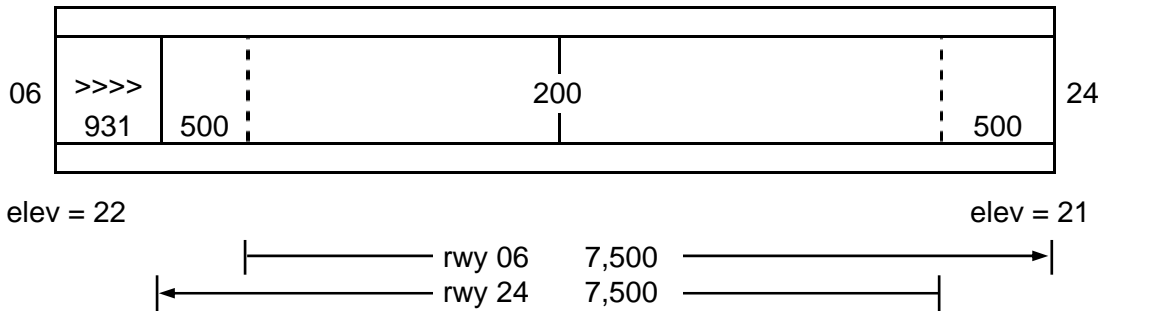
KEFLAVIK
IKF

KEFLAVIK
IKF

KEFLAVIK
IKF

KEFLAVIK
IKF

KEFLAVIK
IKF



TACAN:	ILM-117x (Pri)	DIW-107x (Sec-DME)
I/F above:	N: 89k E: clear	N: 87k E: clear
	S: clear W: 88k	S: 93k W: 102k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 The over/underruns are unusable

WILMINGTON
ILM

WILMINGTON
ILM

WILMINGTON
ILM

WILMINGTON
ILM

WILMINGTON
ILM

WILMINGTON
ILM

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ILM

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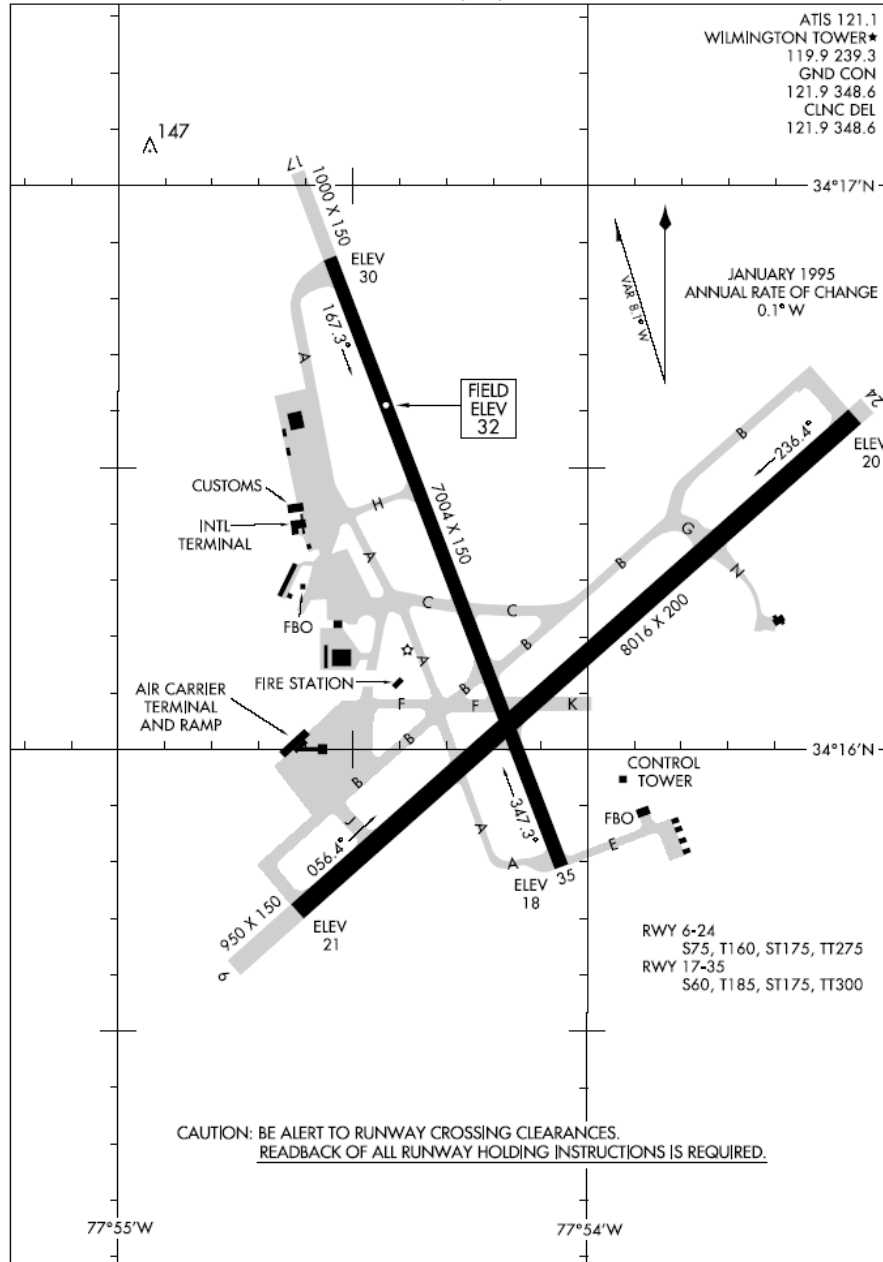
WILMINGTON AIRPORT DIAGRAM

04162

AIRPORT DIAGRAM

AL-459 (FAA)

WILMINGTON INTL (ILM)
WILMINGTON, NORTH CAROLINA



AIRPORT DIAGRAM

04162

WILMINGTON, NORTH CAROLINA
WILMINGTON INTL (ILM)

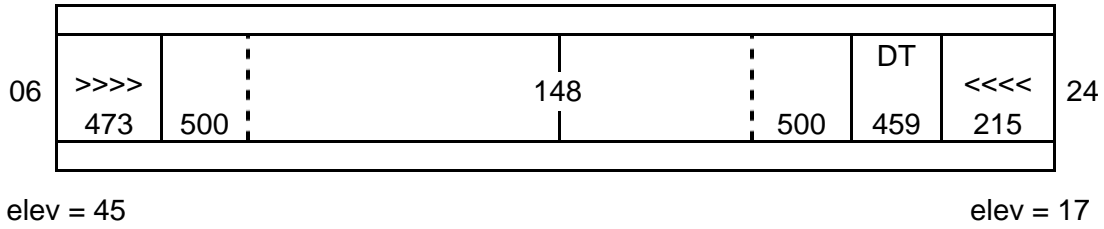
ATIS 121.1
 WILMINGTON TOWER★
 119.9 239.3
 GND CON
 121.9 348.6
 CLNC DEL
 121.9 348.6

JANUARY 1995
 ANNUAL RATE OF CHANGE
 0.1° W

CONTROL
TOWER

RWY 6-24
 S75, T160, ST175, TT275
 RWY 17-35
 S60, T185, ST175, TT300

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TACAN: SHA-80x (Pri-DME) CRN-37x (Sec-DME)
I/F above: N: clear E: 105k N: << 80k E: << 80k
 S: 139k W: clear S: << 80k W: << 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: none

NOTE
 Both over/underruns are unusable.
 The 459-ft displaced threshold on rwy 24 is unusable

SHANNON
INN

SHANNON
INN

SHANNON
INN

SHANNON
INN

SHANNON
INN

SHANNON AIRPORT DIAGRAM

SHANNON
INN

SHANNON
INN

SHANNON
INN

SHANNON
INN

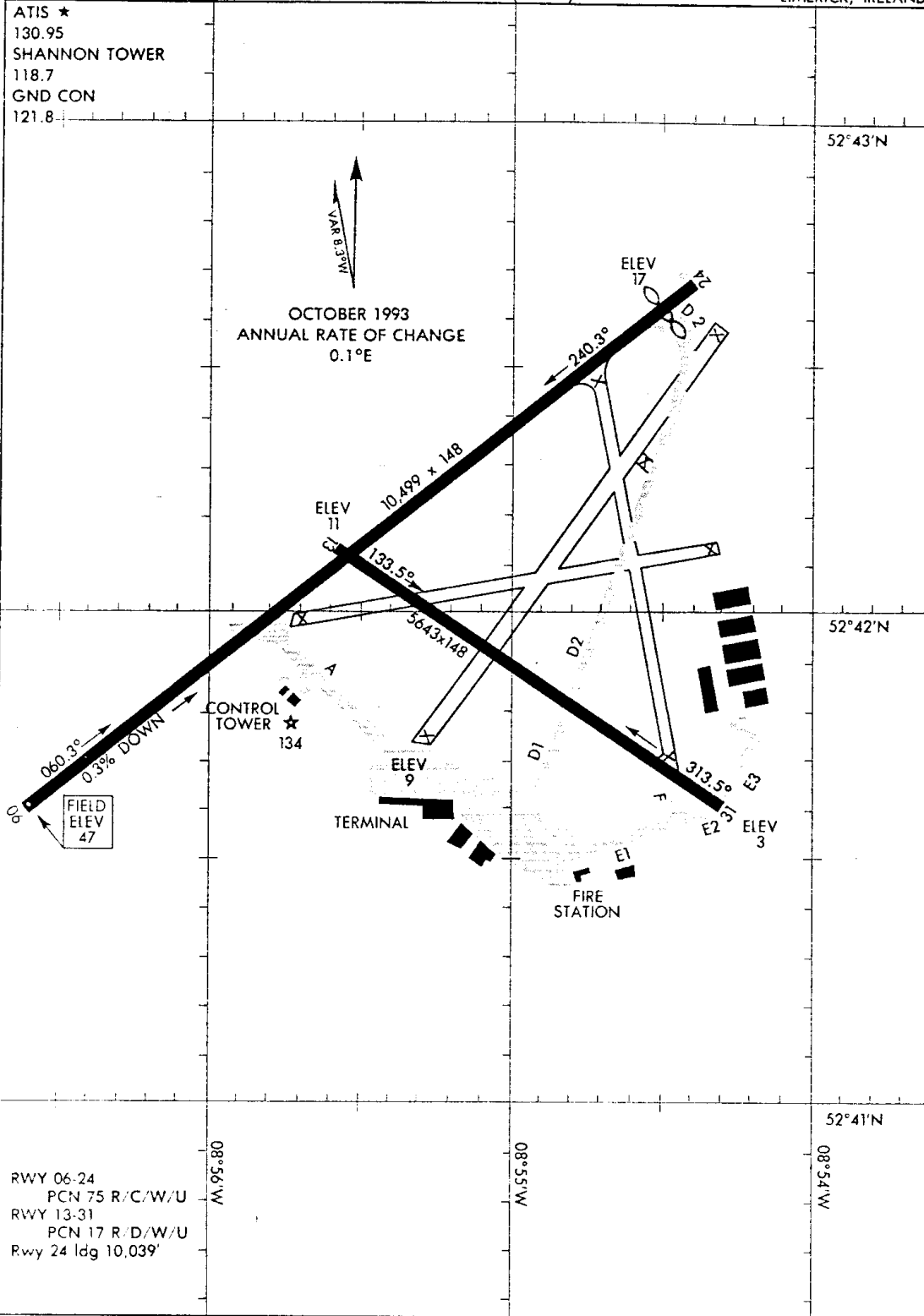
SHANNON
INN

93287

AIRPORT DIAGRAM

AFD-1151 (USAF)

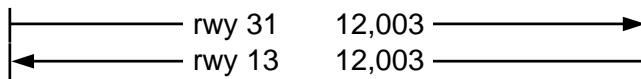
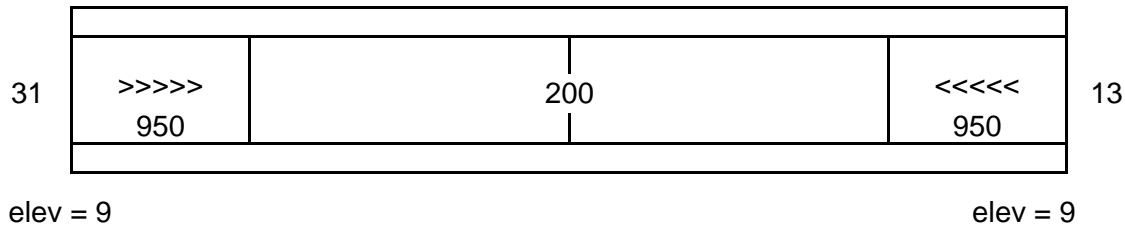
SHANNON (EINN)
LIMERICK, IRELAND



AIRPORT DIAGRAM

WGS DATUM
199

LIMERICK, IRELAND
SHANNON (EINN)



TACAN: NKW-57x (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

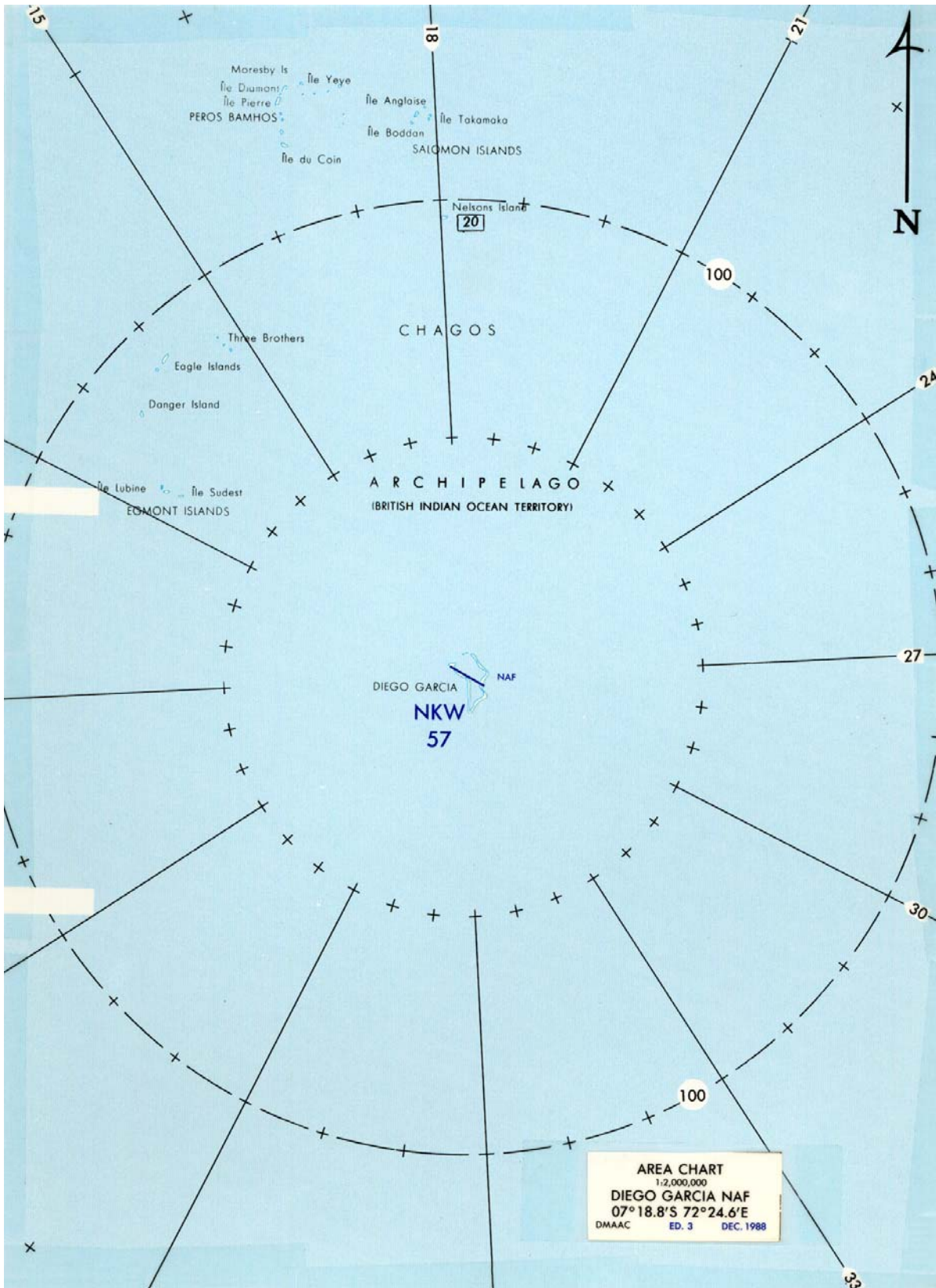
DIEGO GARCIA
JDG

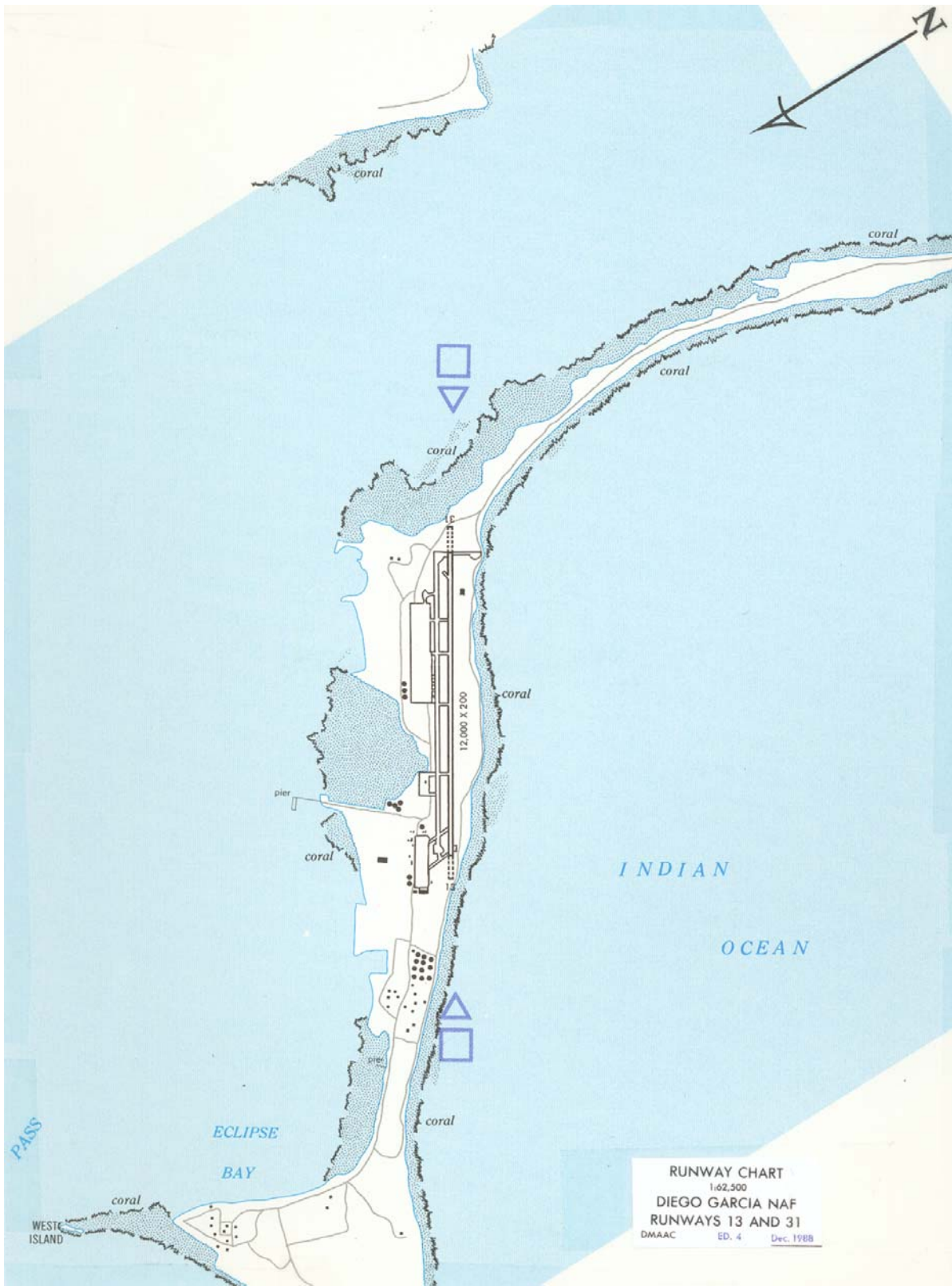
DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG

DIEGO GARCIA
JDG





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DIEGO GARCIA RWY JDG 13

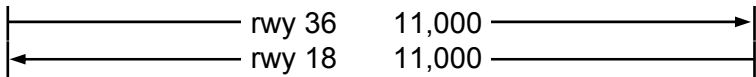
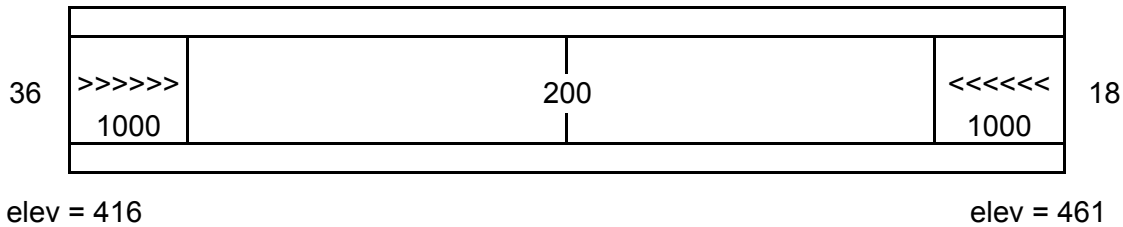


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DIEGO GARCIA RWY JDG 31



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TACAN: SHT-19x (Pri) NJA-98x (Sec) |
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: 126k S: clear W: 123k
MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

YOKOTA
JTY

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YOKOTA RWY JTY 18
View 1



YOKOTA RWY JTY 18
View 2



YOKOTA RWY JTY 36
View 1



JTY-6

MAPS/ALL/GEN G

YOKOTA RWY JTY 36
View 2



JTY-7

MAPS/ALL/GEN G

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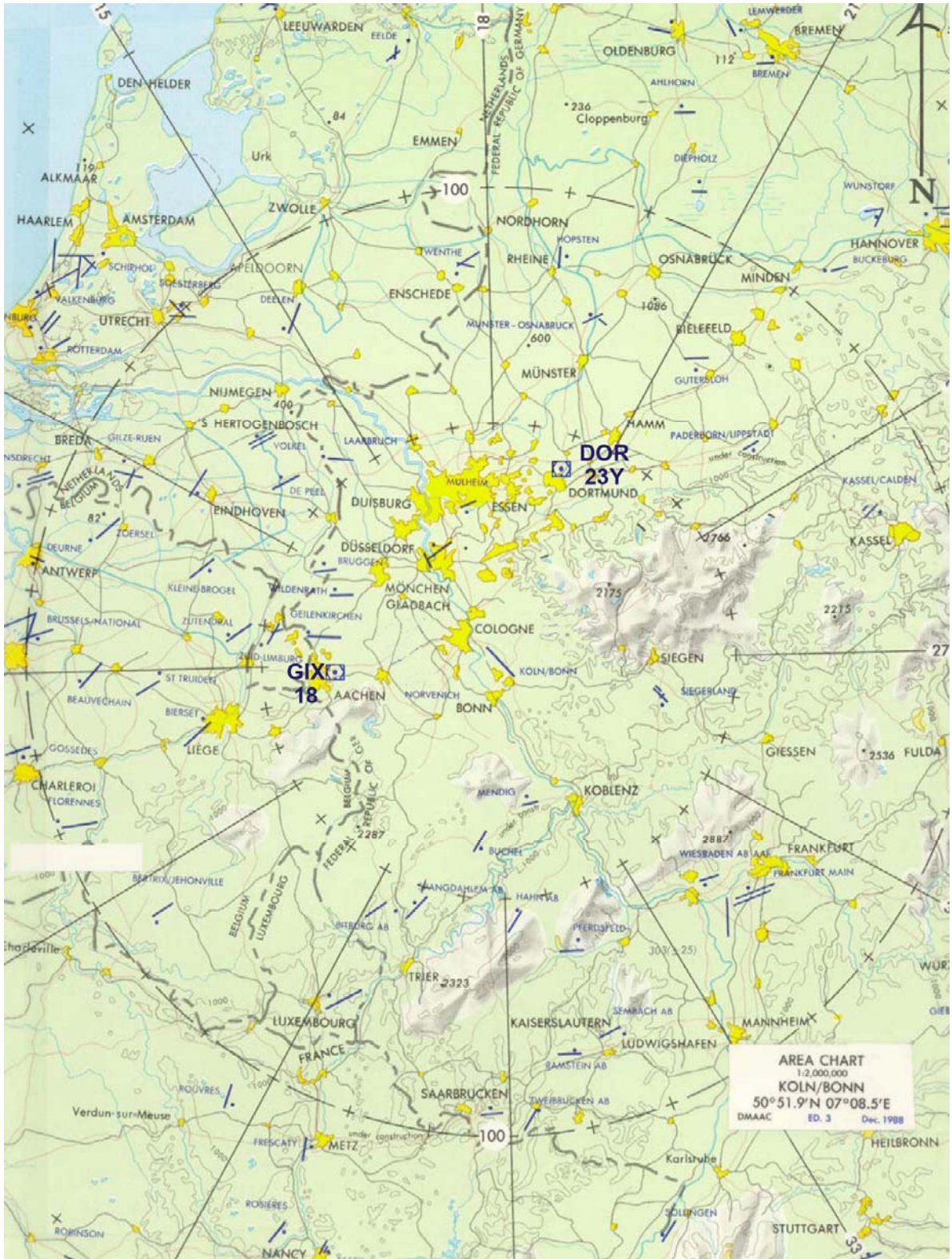
KOLN/BONN
KBO

KOLN/BONN
KBO

KOLN/BONN
KBO

KOLN/BONN
KBO

KOLN/BONN
KBO





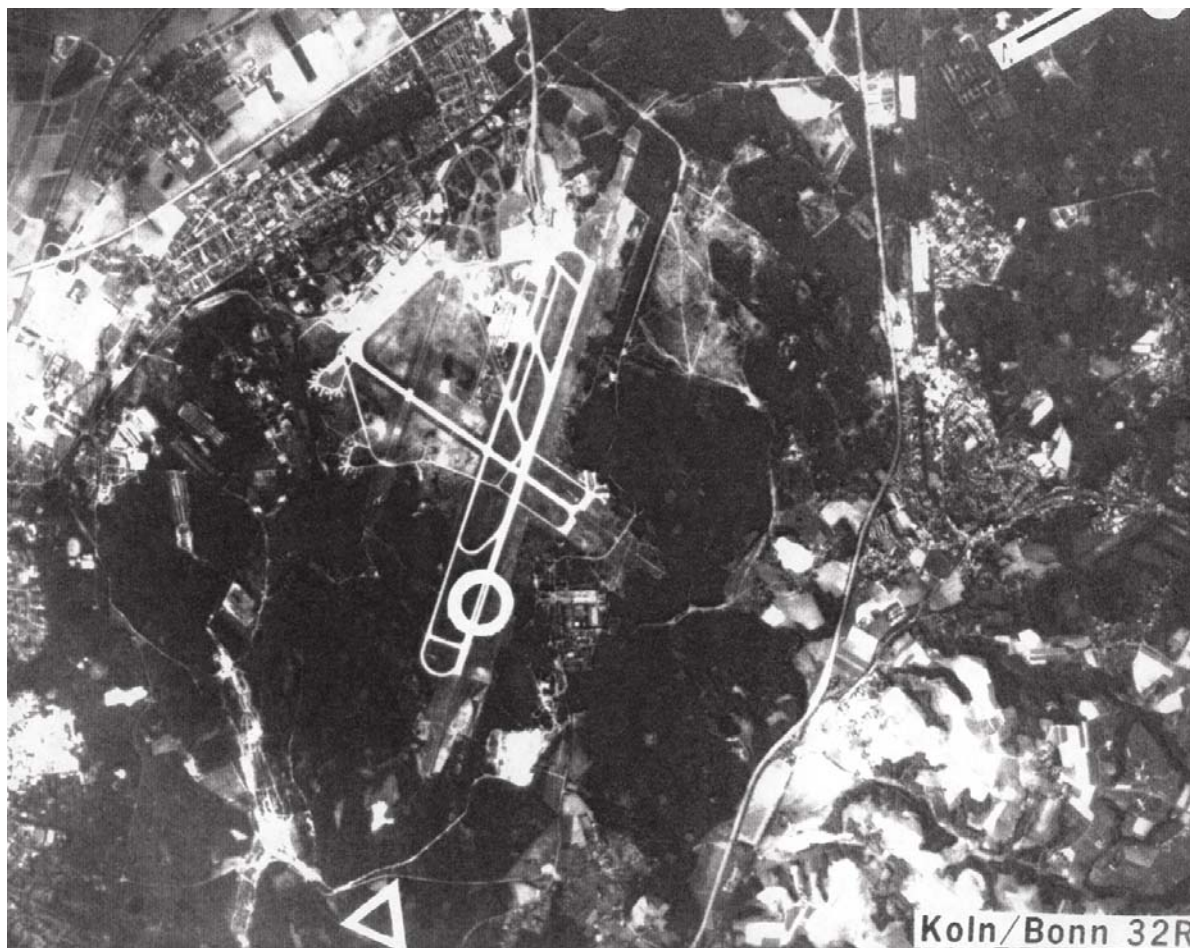
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KOLN/BONN RWY KBO 14L

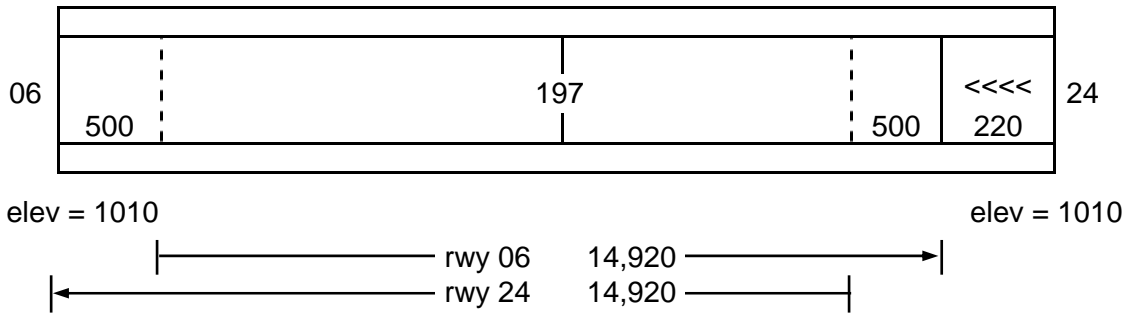


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KOLN/BONN RWY KBO 32R



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N'DJILI
KIN

TACAN: KSA-97x (Pri-DME) BZ-78x (Pri-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

N'DJILI
KIN

MLS: none
PAPI: none
Ball Bar: none
UHF: none

WARNING

Expect thundershowers from October through May. From June through September, expect visibility to be 3 nmi or less below 10,000 ft due to smoke and haze

This site not recommended for landing due to political concerns

N'DJILI
KIN

NOTE
 The over/underrun is unusable

N'DJILI
KIN

N'DJILI
KIN

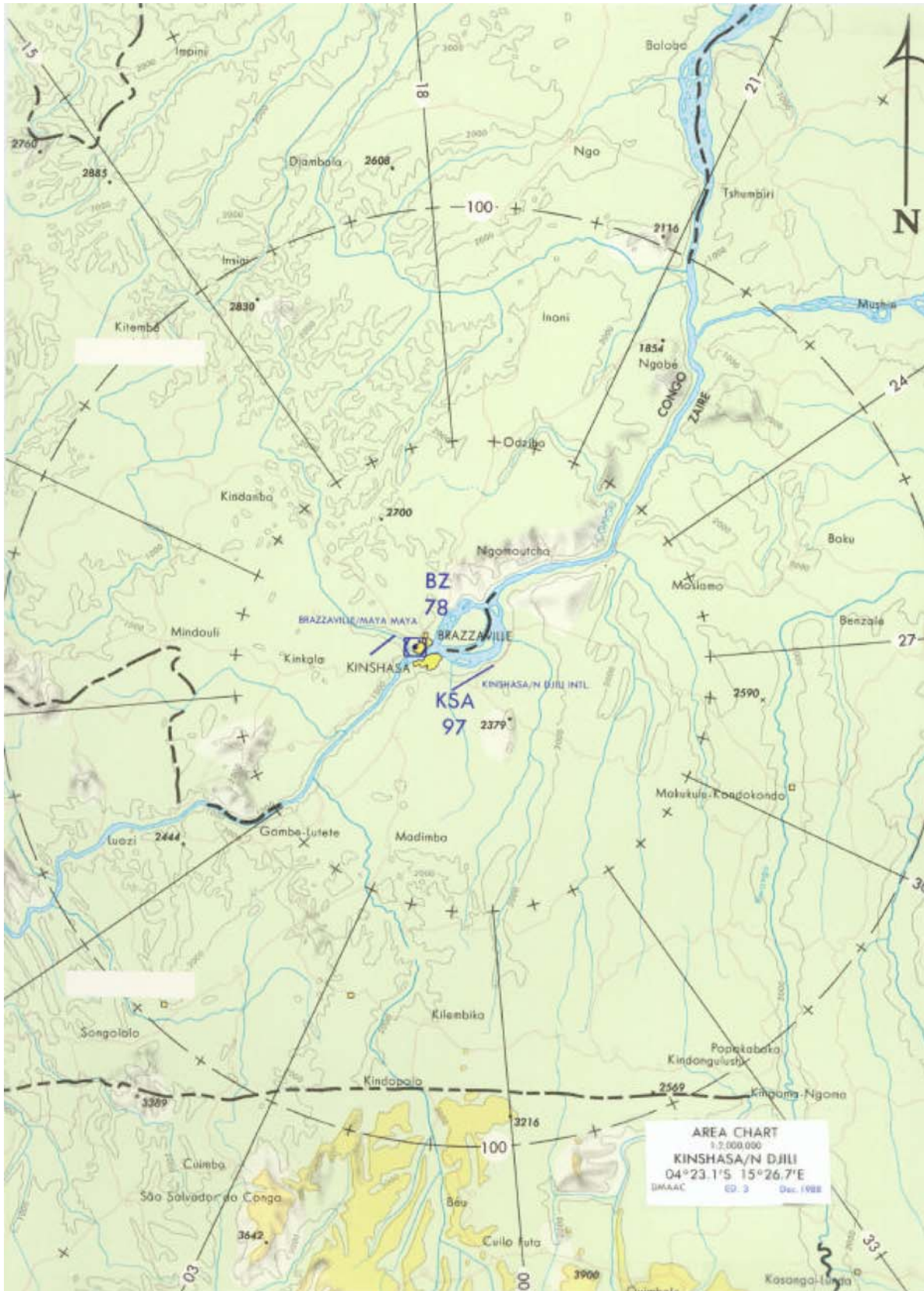
N'DJILI
KIN

N'DJILI
KIN

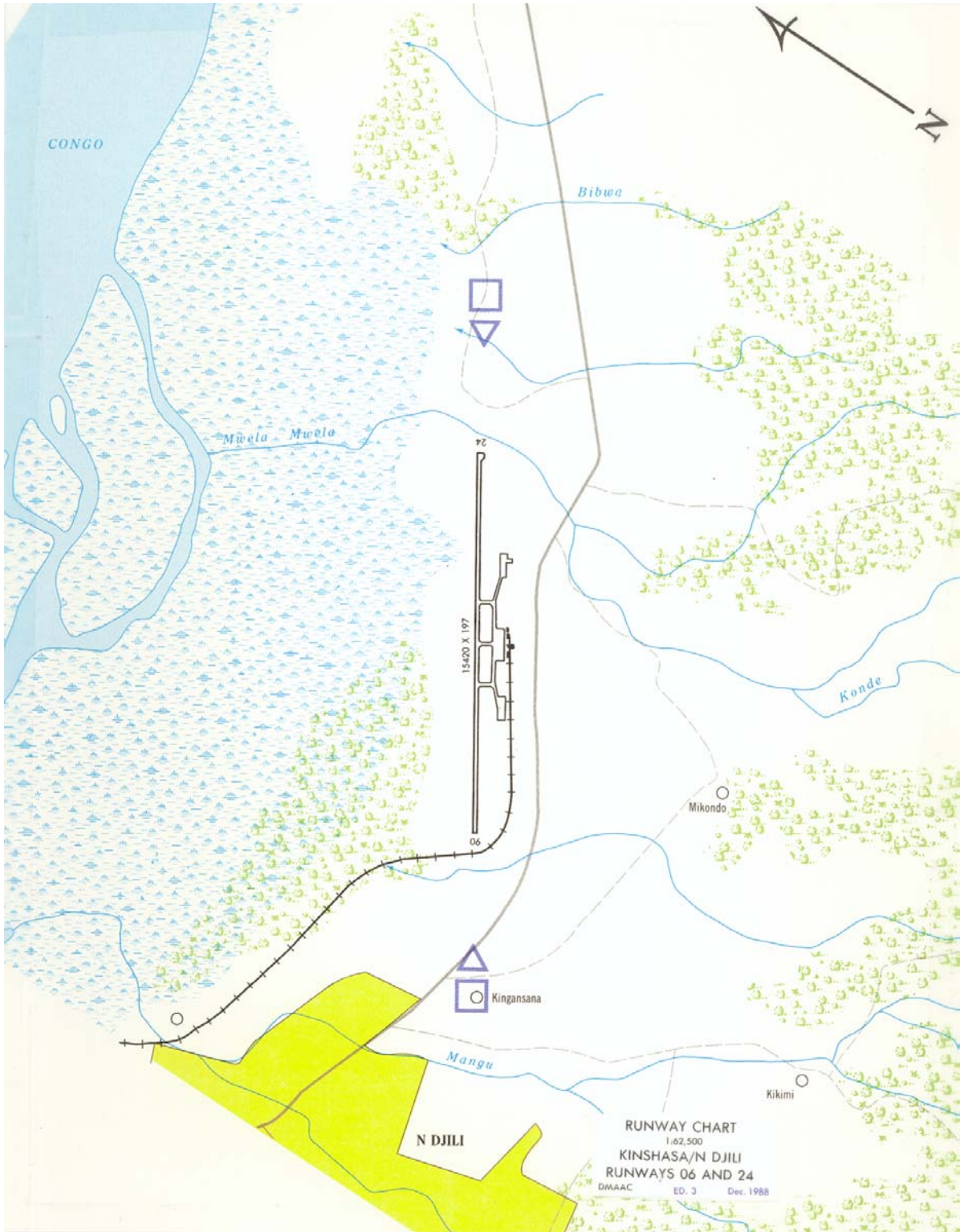
N'DJILI
KIN

N'DJILI
KIN

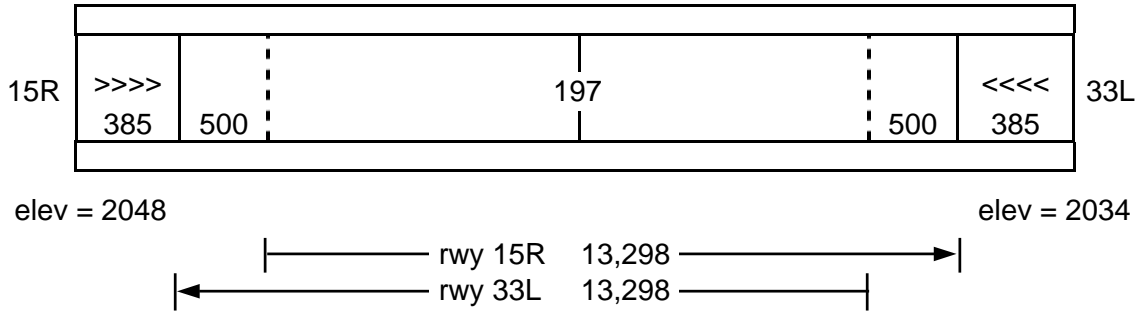
N'DJILI
KIN



AREA CHART
 1:2,000,000
 KINSHASA/N DJILI
 04°23.1'S 15°26.7'E
 ICAO ED. 3 Dec. 1988



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TACAN:	RIY-92x (Pri)	KIA-80x (Sec)
I/F above:	N: < 80k E: < 80k	N: 102k E: 135k
	S: clear W: < 80k	S: 103k W: 103k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

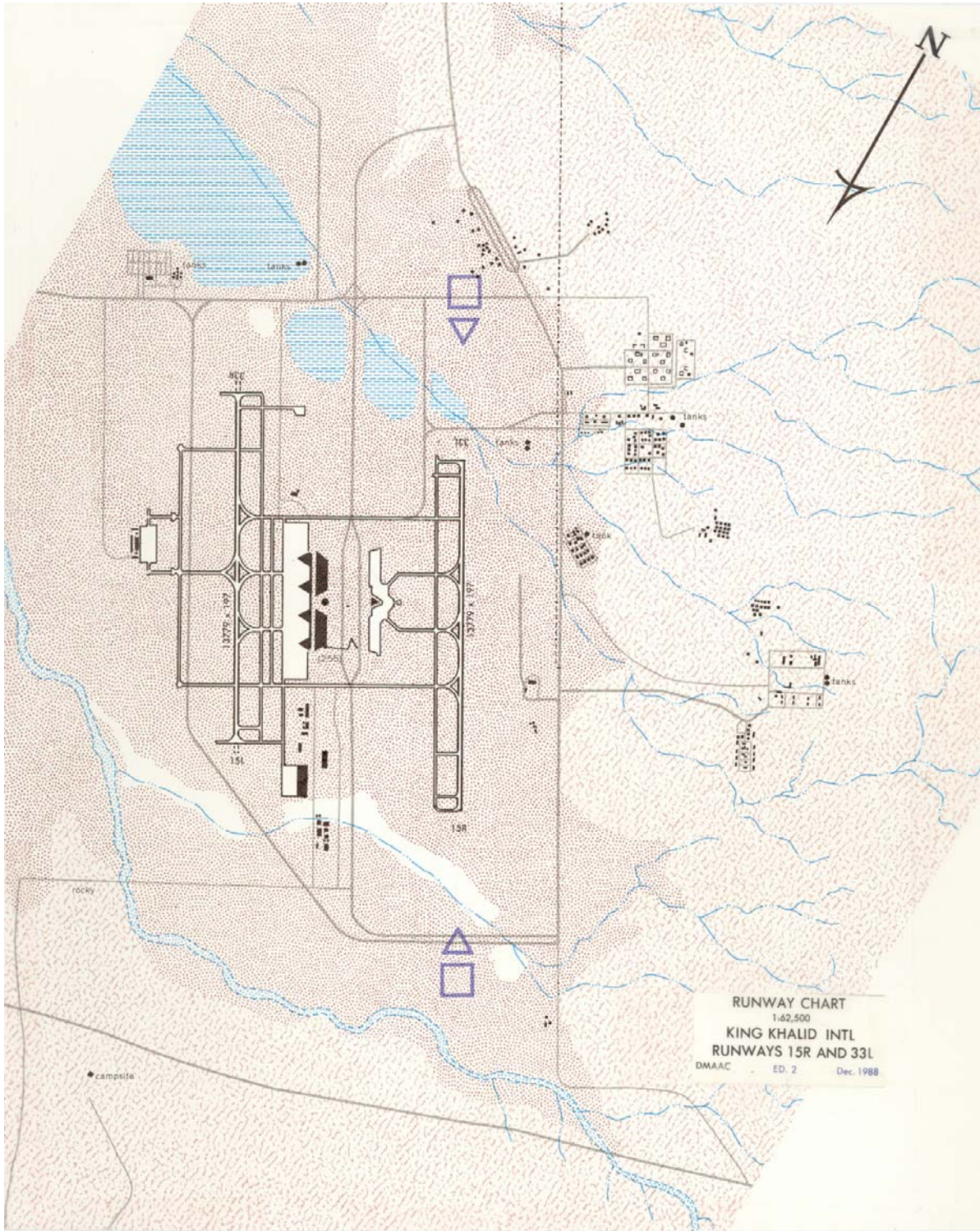
KING KHALID
KKI

KING KHALID
KKI

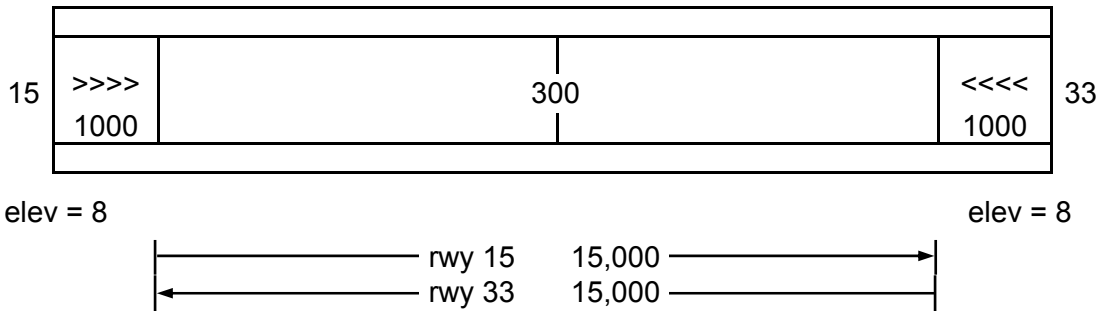
KING KHALID
KKI

KING KHALID
KKI

KING KHALID
KKI



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TACAN: TTS-59y (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

COF-97x (Sec)
 N: <80k E: clear
 S: clear W: <80k

RTLS I/F: N: clear E: clear
 S: clear W: clear

N: <80k E: 196k
 S: 163k W: <80k

MLS: (15-Sr) ch 8; (33-Sr) ch 6

PAPI: 15, 33

Ball Bar: 15, 33

UHF: yes

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC

KENNEDY
KSC





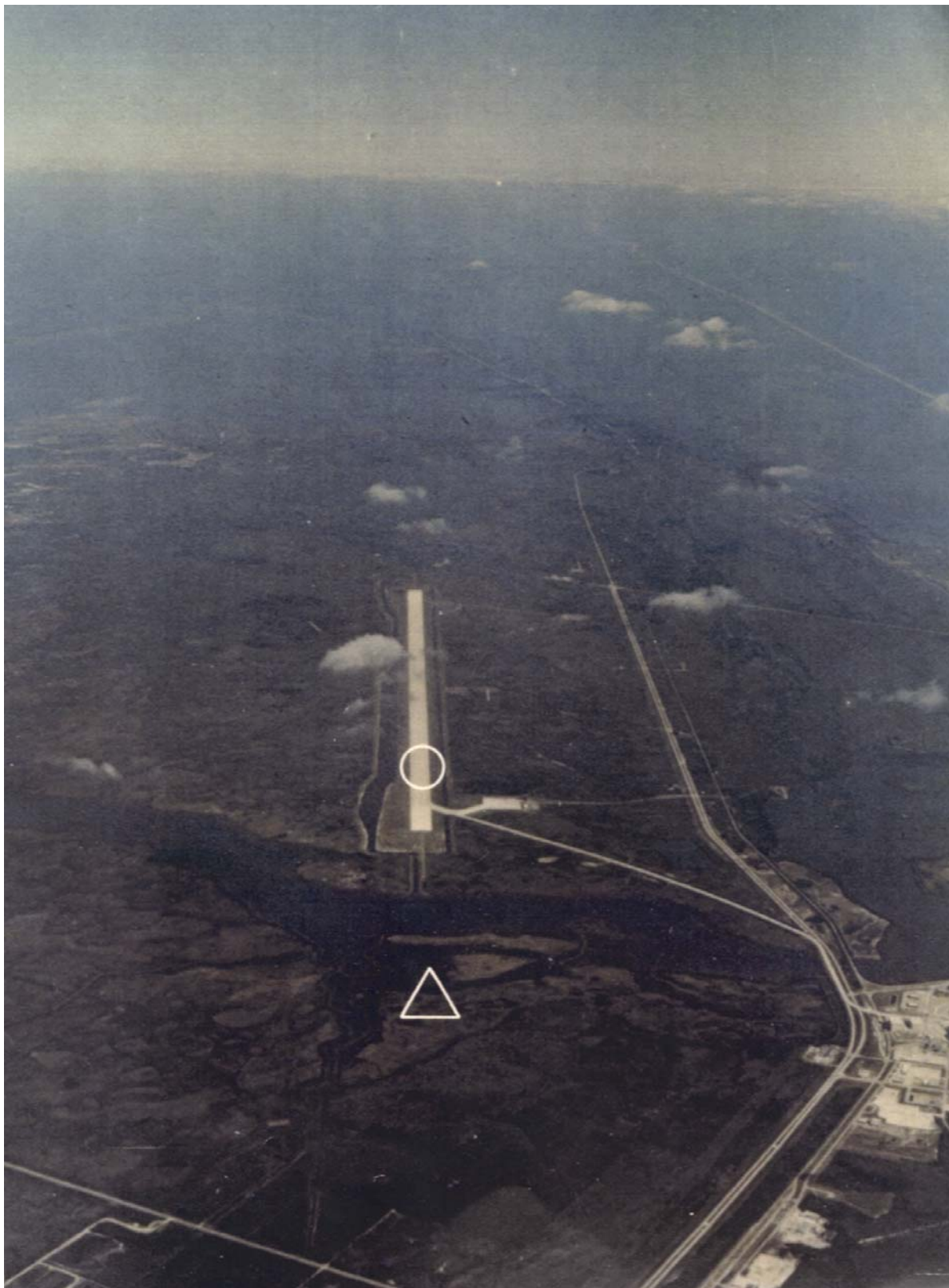
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KSC RWY 15



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KSC RWY 33



KSC-C

KSC 33
1/15/82
S78-30186
EDITION 1-6/89
MAPS/ALL/GEN G

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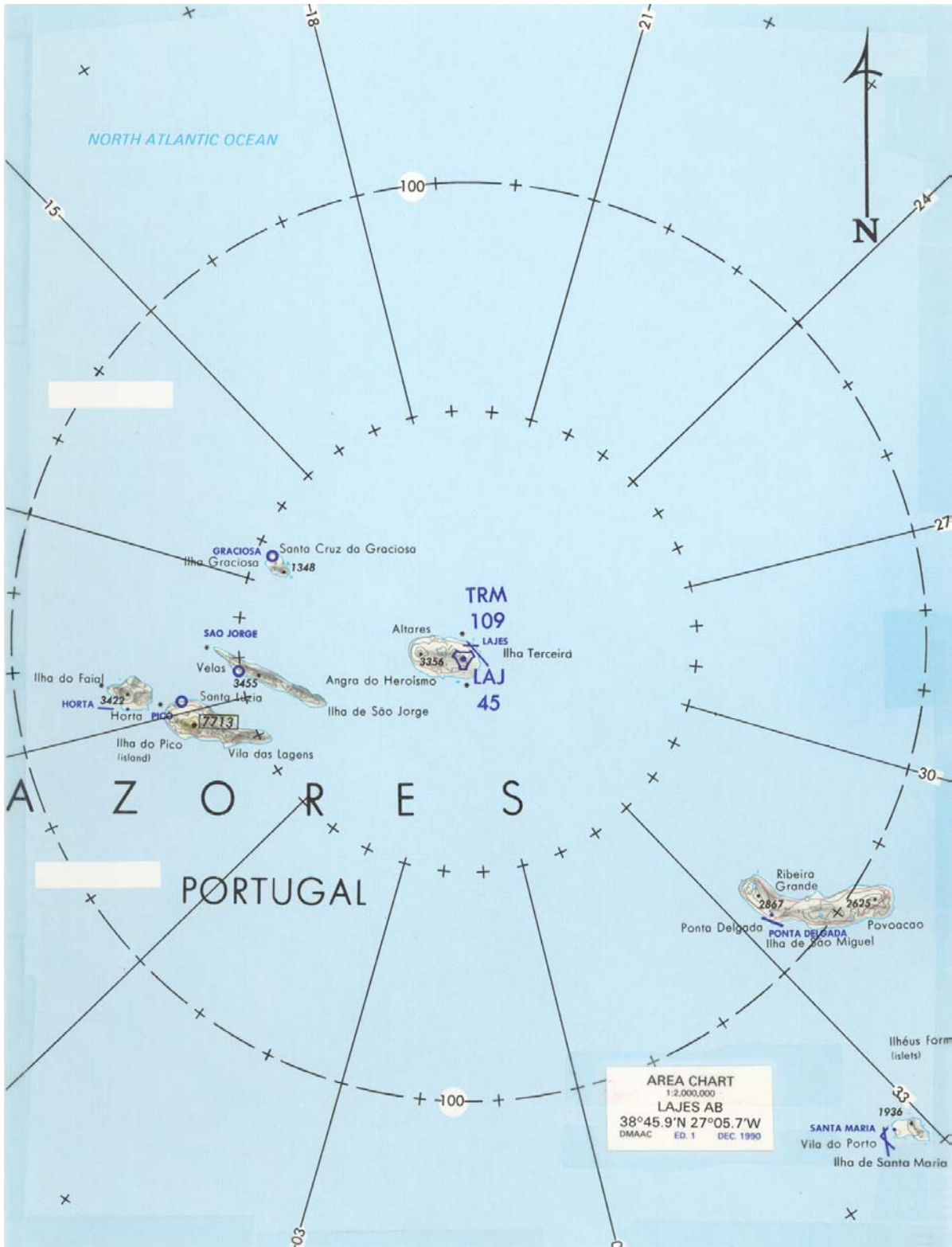
LAJES
LAJ

LAJES
LAJ

LAJES
LAJ

LAJES
LAJ

LAJES
LAJ





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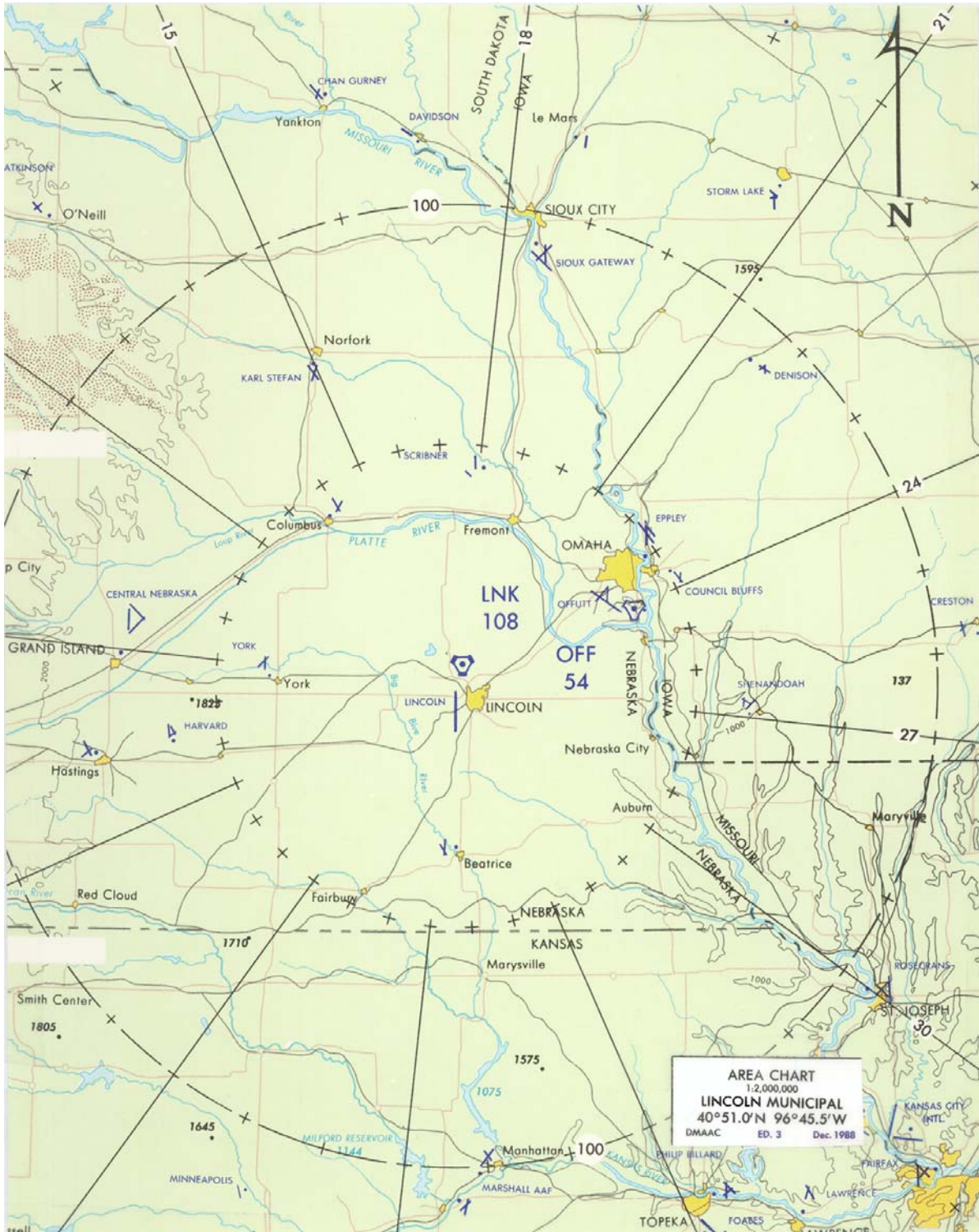
LINCOLN
LNK

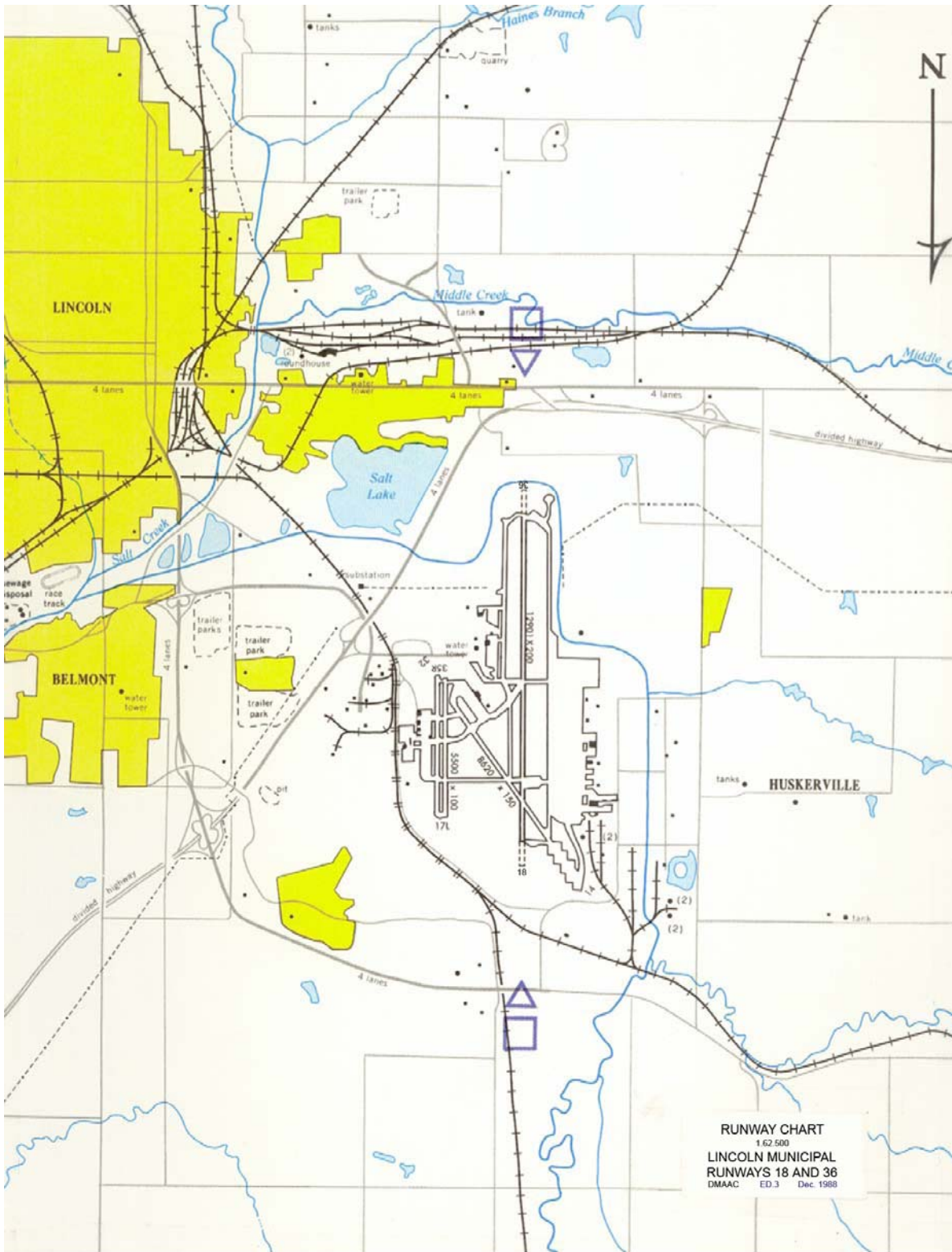
LINCOLN
LNK

LINCOLN
LNK

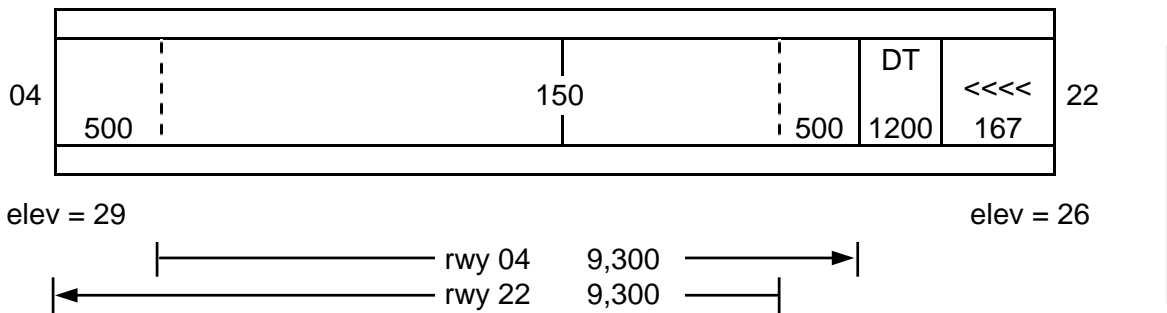
LINCOLN
LNK

LINCOLN
LNK





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TACAN: ROB-85x (Pri-DME)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: none

<u>WARNING</u>
Do not use rwy 22
No overruns
Expect thunderstorms, low clouds, and low visibility from May through November. Expect scattered low clouds other times
Braking action poor
This site not recommended for landing due to political concerns

NOTE
 25-ft shoulders

NOTE
 Airport officials may be unaware of your purpose.
 Language is English.
 Previous site identifier was ROB

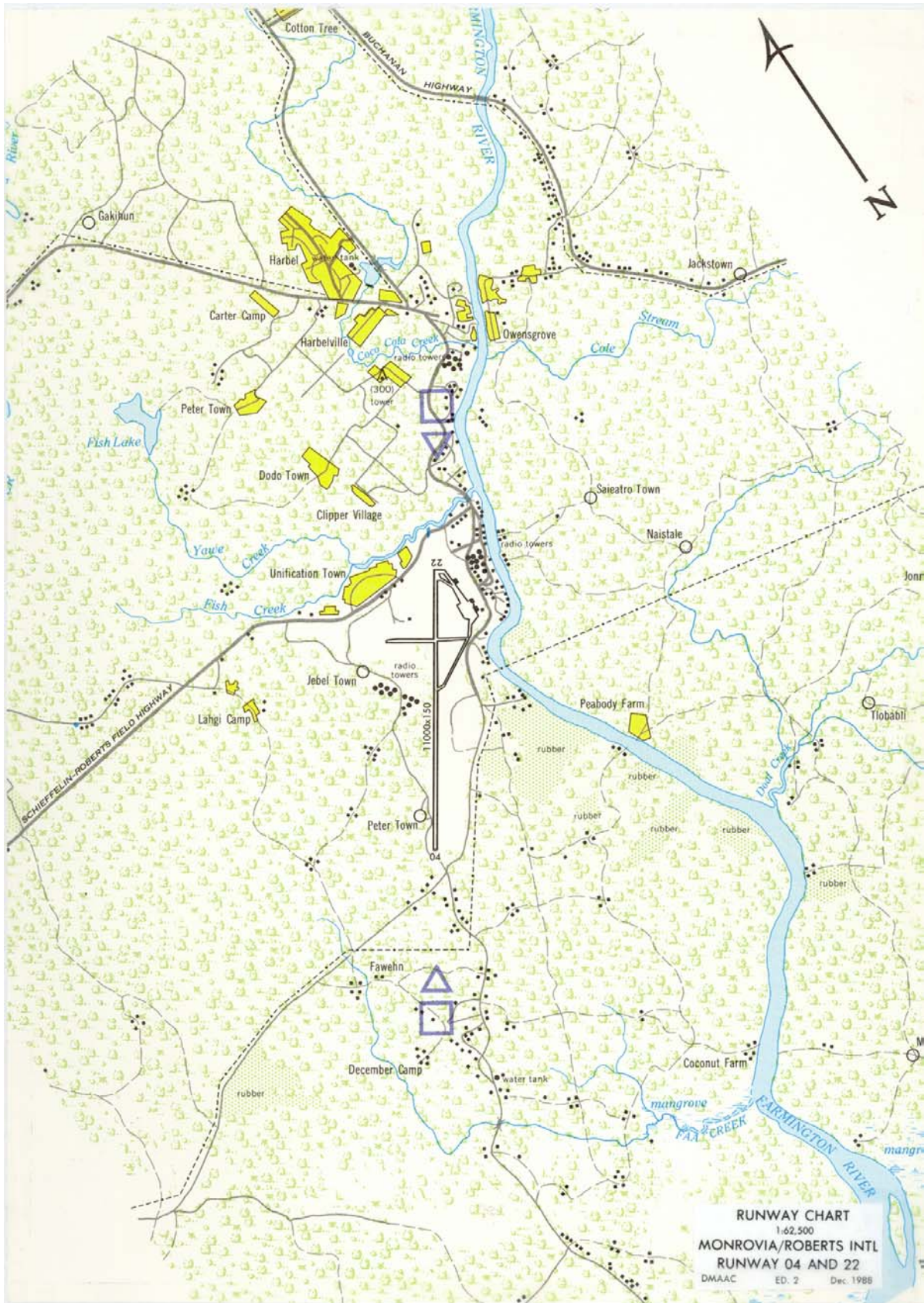
MONROVIA
LRB

MONROVIA
LRB

MONROVIA
LRB

MONROVIA
LRB

MONROVIA
LRB

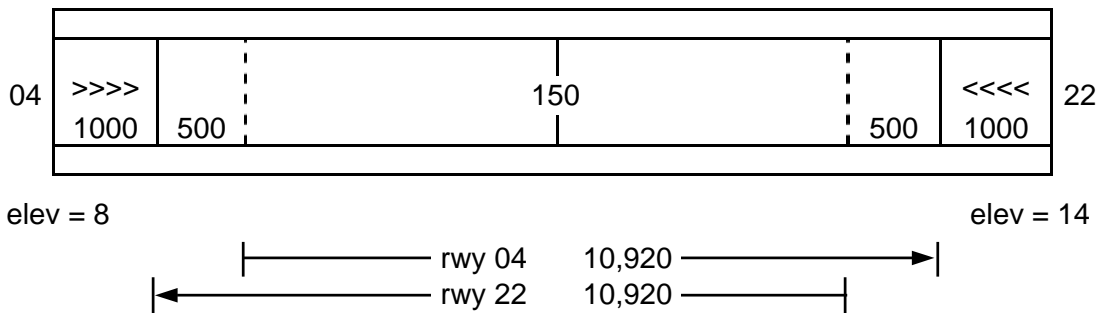


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MONROVIA/ROBERTS RWY LRB 04



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TACAN: PIE-111x (Pri)
I/F above: N: 103k E: clear
 S: clear W: 150k

MCF-47x (Sec)
 N: 87k E: clear
 S: clear W: 91k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

MACDILL
MCF

MACDILL
MCF

MACDILL
MCF

MACDILL
MCF

MACDILL
MCF

MACDILL AIR FORCE BASE AIRPORT DIAGRAM

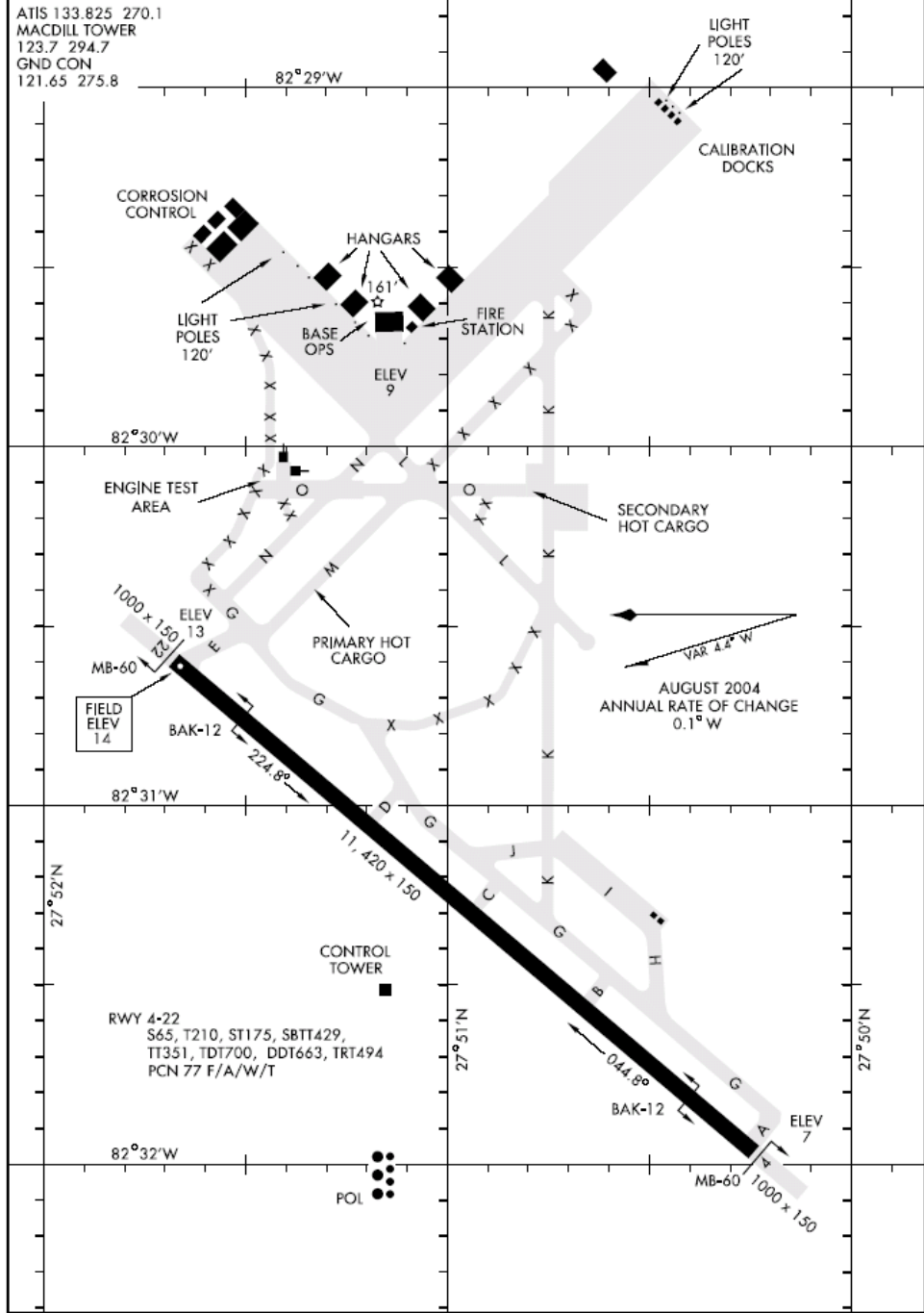
04218

MACDILL AFB (KMCF)

AIRPORT DIAGRAM

AFD-418 [USAF]

TAMPA, FLORIDA



AIRPORT DIAGRAM

WGS DATUM

TAMPA, FLORIDA

MACDILL AFB (KMCF)

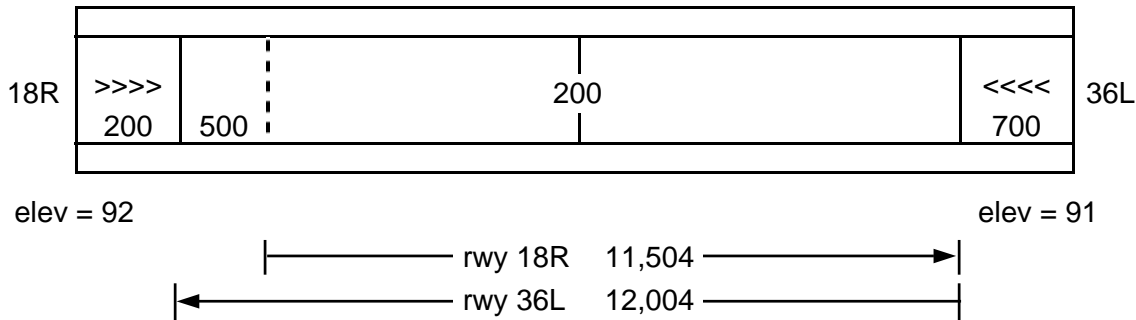
MACDILL
MCF

MACDILL
MCF

MACDILL
MCF

MACDILL
MCF

MACDILL
MCF



TACAN: TTS-59y (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

COF-97x (Sec)
 N: < 80k E: clear
 S: clear W: < 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

ORLANDO
MCO

ORLANDO
MCO

ORLANDO
MCO

ORLANDO
MCO

ORLANDO
MCO

ORLANDO
MCO

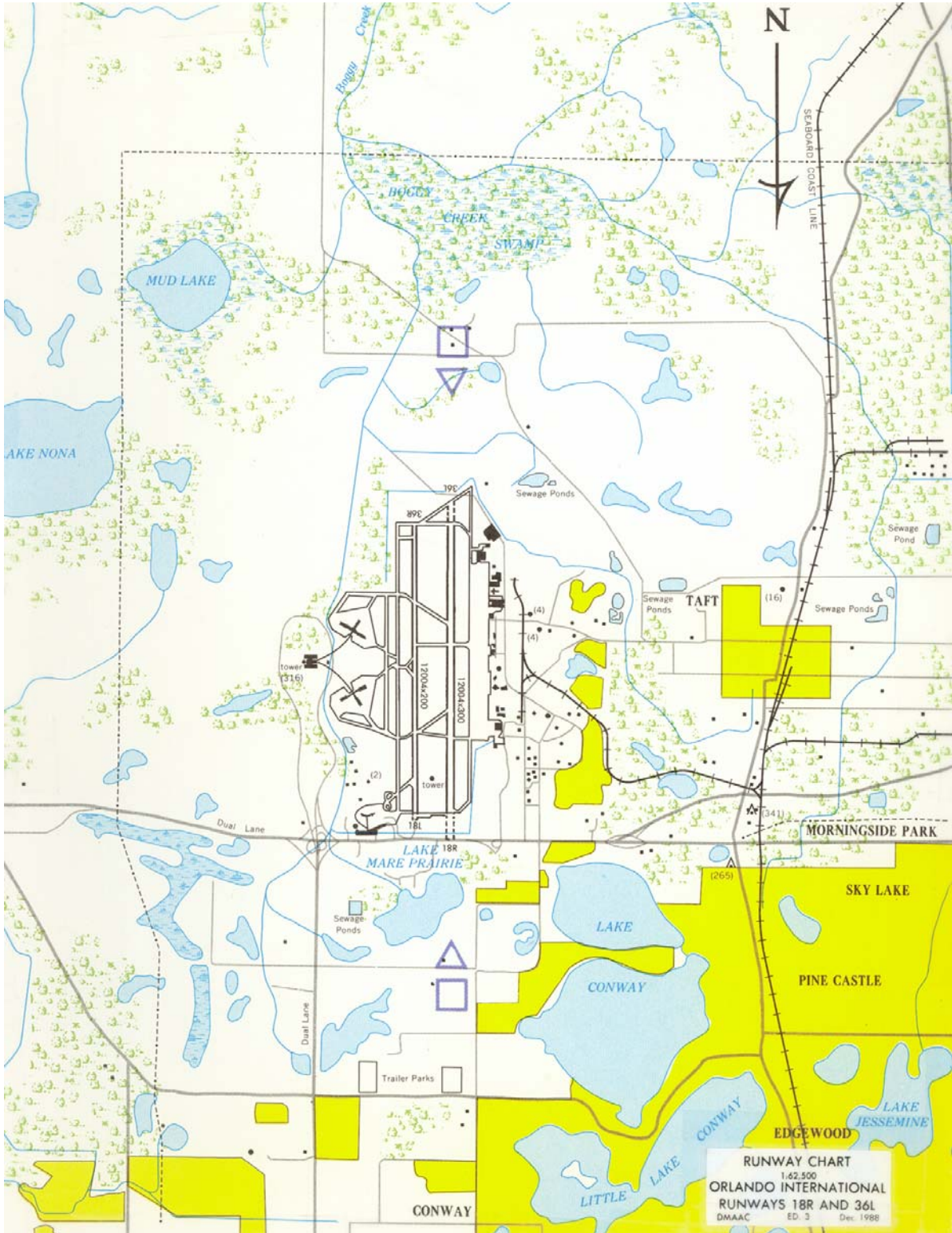
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MCO

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MCO

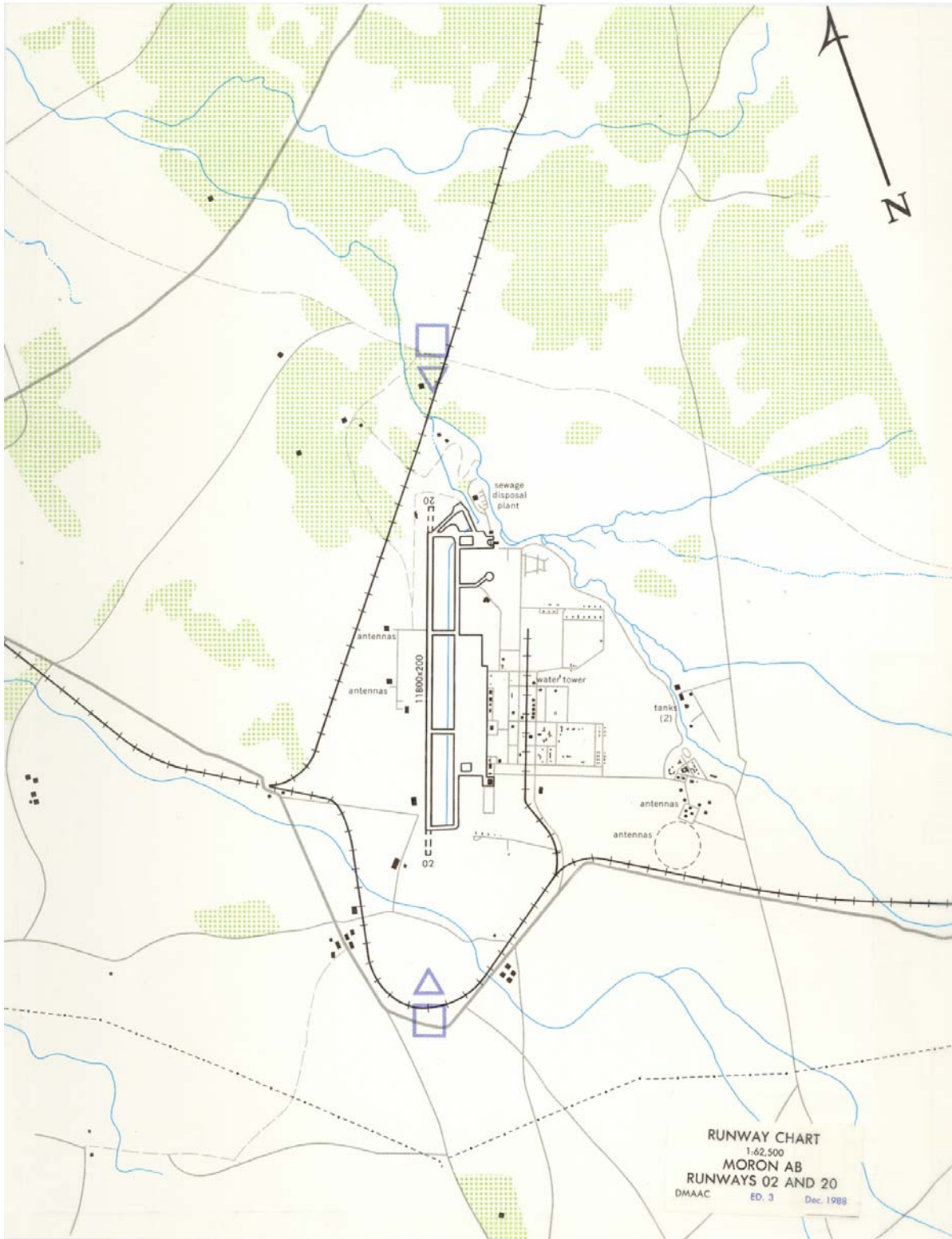
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MORON RWY MRN 02



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MORON RWY MRN 20

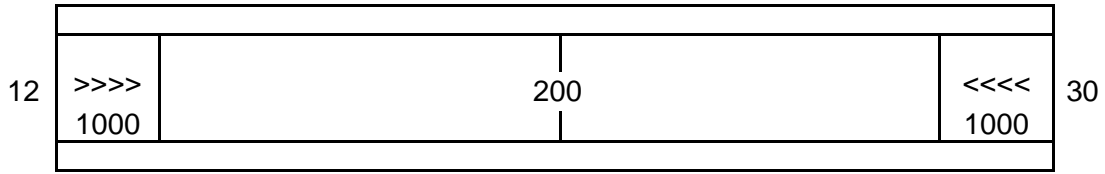


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Mountain Home AFB, Idaho

Table Identifier

MUO



TACAN: MUO-87x (Pri)
I/F above: N: 87k E: clear
 S: 96k W: 82k

BOI-80x (Sec)
 N: clear E: 146k
 S: 95k W: 109k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO

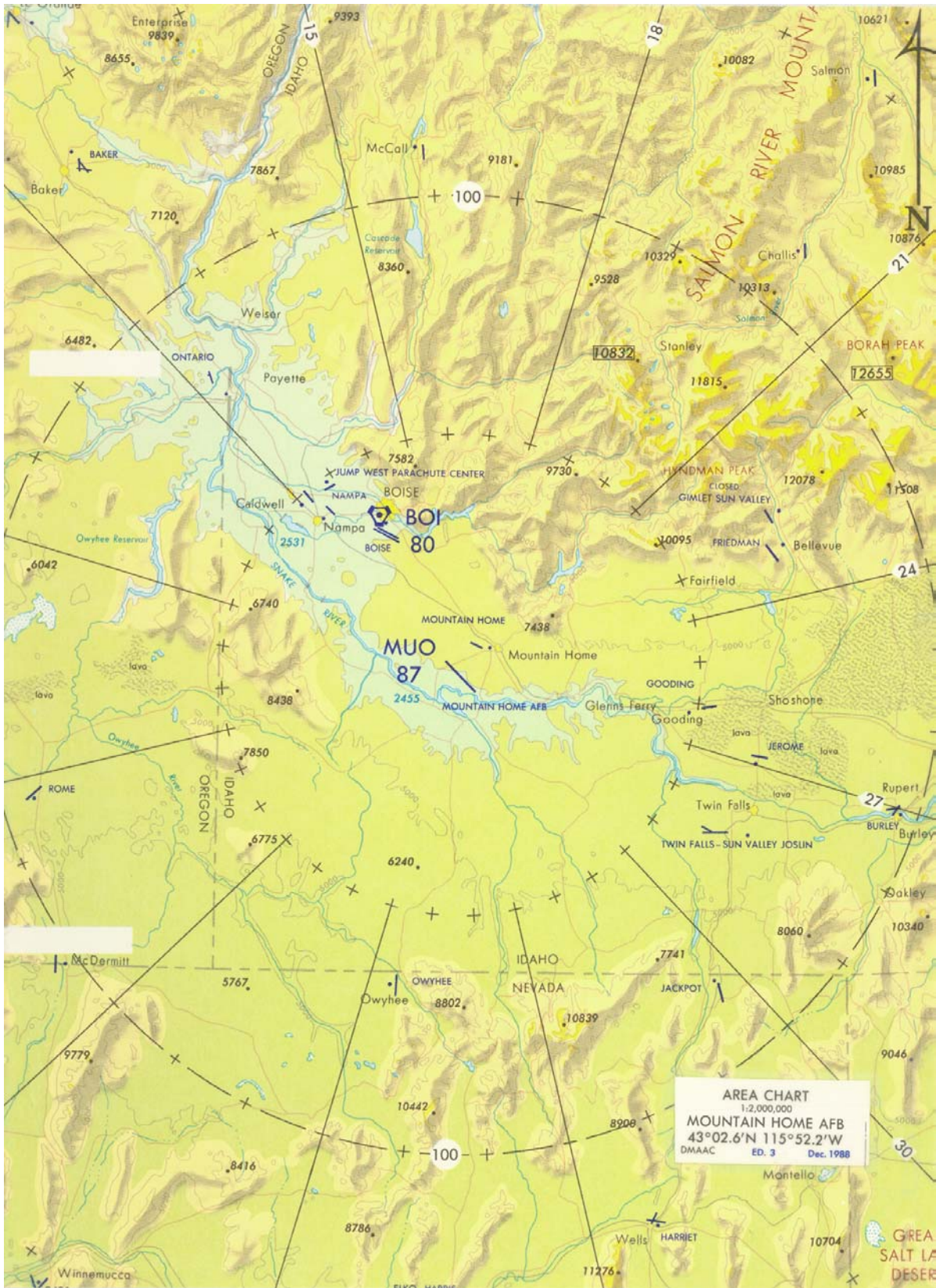
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MUO

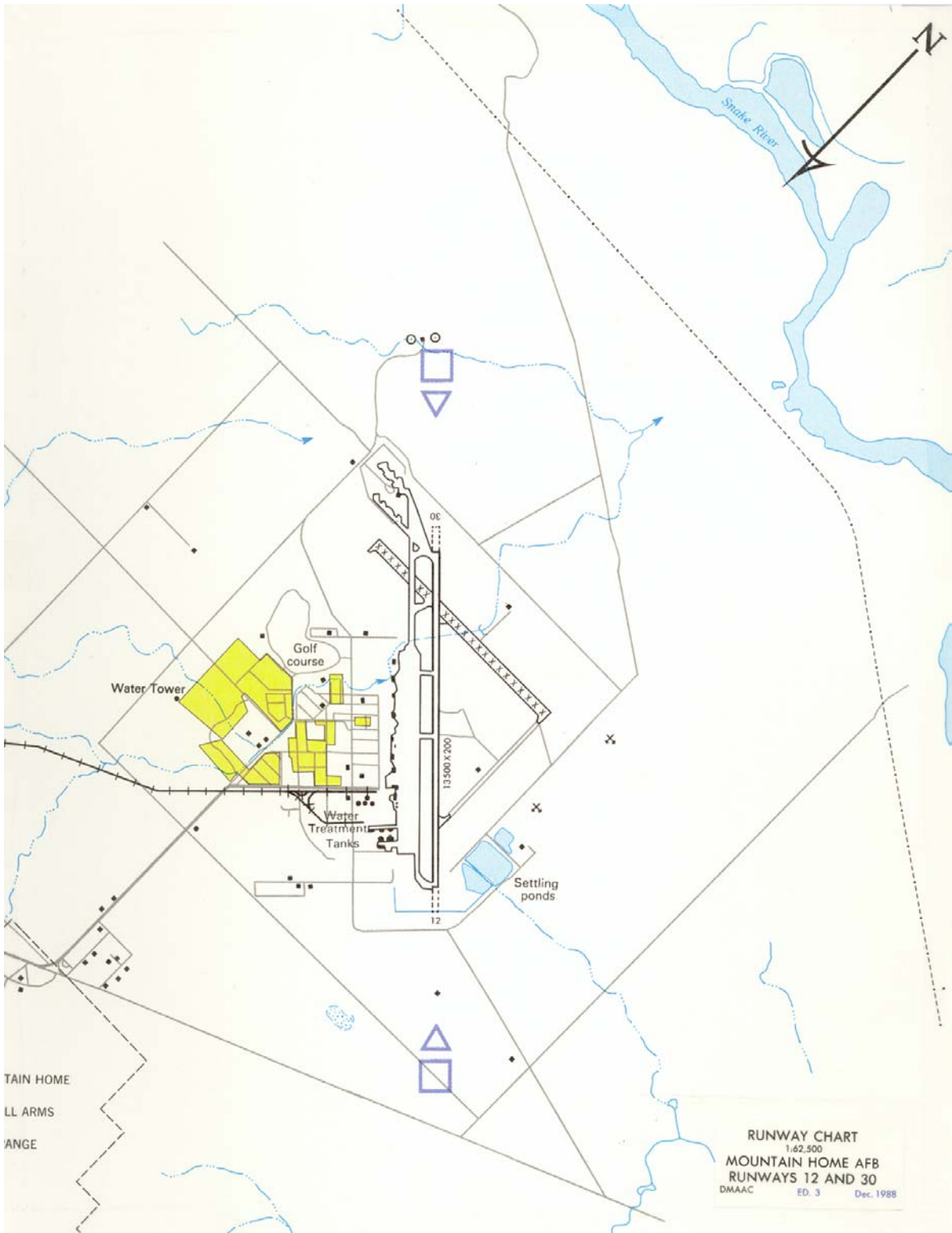
MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO

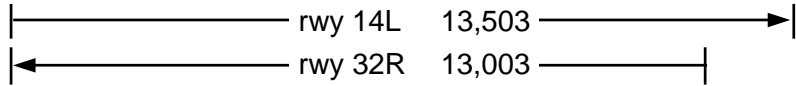
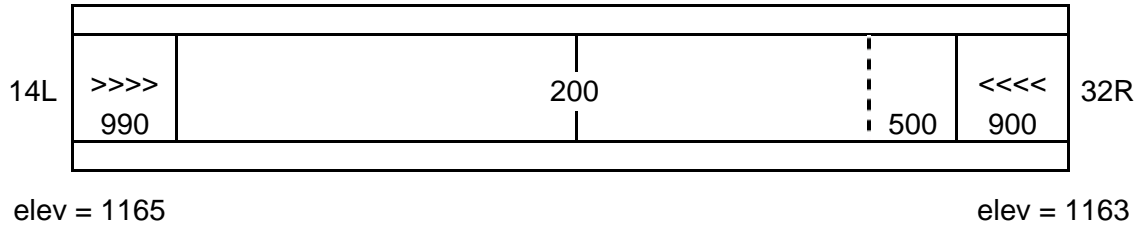
MOUNTAIN HOME
MUO

MOUNTAIN HOME
MUO





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TACAN: EPH-73x (Pri) MWH-86y (Sec-DME)
I/F above: N: clear E: 82k N: clear E: clear
 S: 84k W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE

The 900-ft underrun on rwy 32R is unusable.
 The 900-ft overrun on rwy 14L is unusable

*Previous name was Moses Lake

GRANT COUNTY
MWH
GRANT COUNTY
MWH
GRANT COUNTY
MWH
GRANT COUNTY
MWH

GRANT COUNTY
MWH

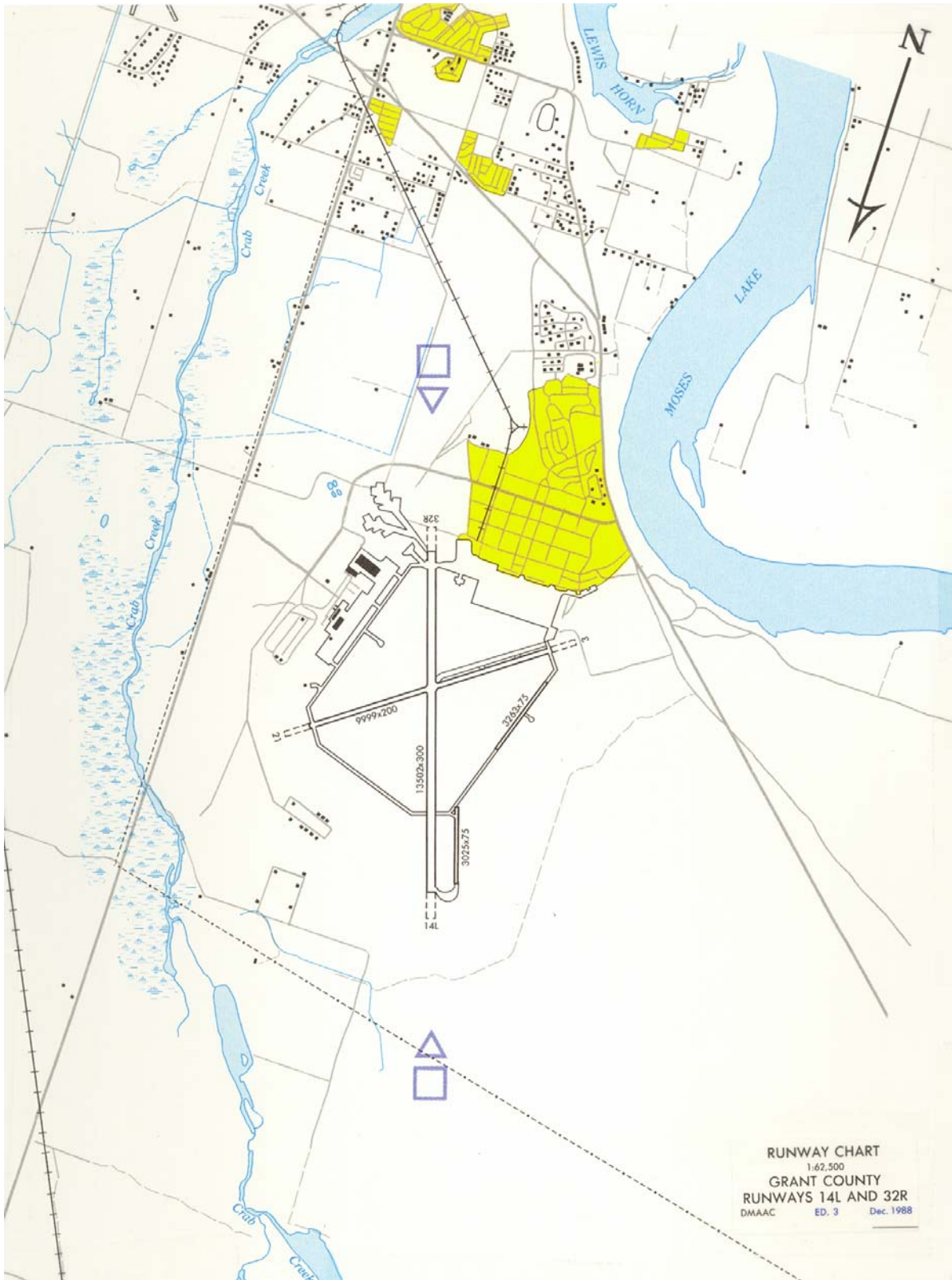
GRANT COUNTY
MWH

GRANT COUNTY
MWH

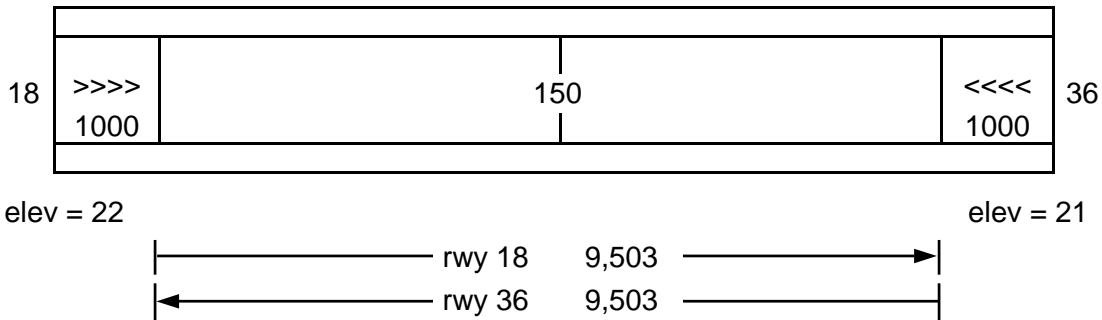
GRANT COUNTY
MWH

GRANT COUNTY
MWH





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TACAN:	ILM-117x (Pri)	FLO-99x (Sec)
I/F above:	N: 85k E: clear	N: 84k E: 92k
	S: clear W: 87k	S: 90k W: 99k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

MYRTLE BEACH
MYR

MYRTLE BEACH
MYR

MYRTLE BEACH
MYR

MYRTLE BEACH
MYR

MYRTLE BEACH
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MYRTLE BEACH
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MYRTLE BEACH
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MYRTLE BEACH
MYR





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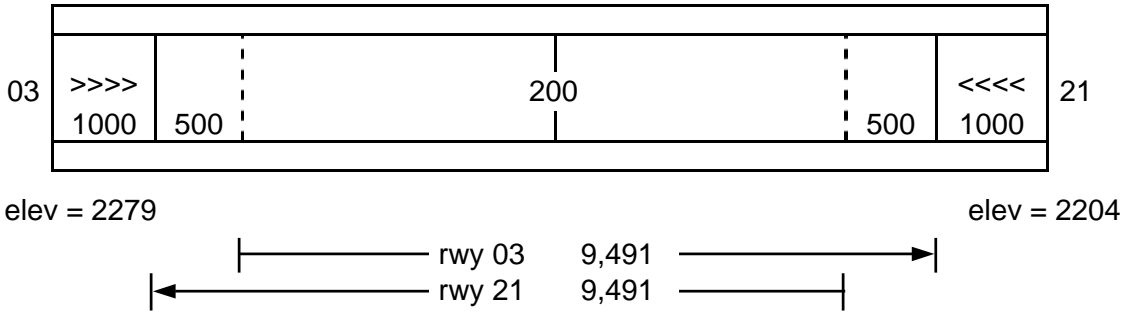
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MYRTLE BEACH RWY MYR 36

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TACAN: NID-53x (Pri) EDW-111x (Sec)
I/F above: N: 140k E: 95k N: 130k E: 125k
 S: 105k W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE NAVAL AIR WEAPONS STATION AIRPORT DIAGRAM

CHINA LAKE
NID

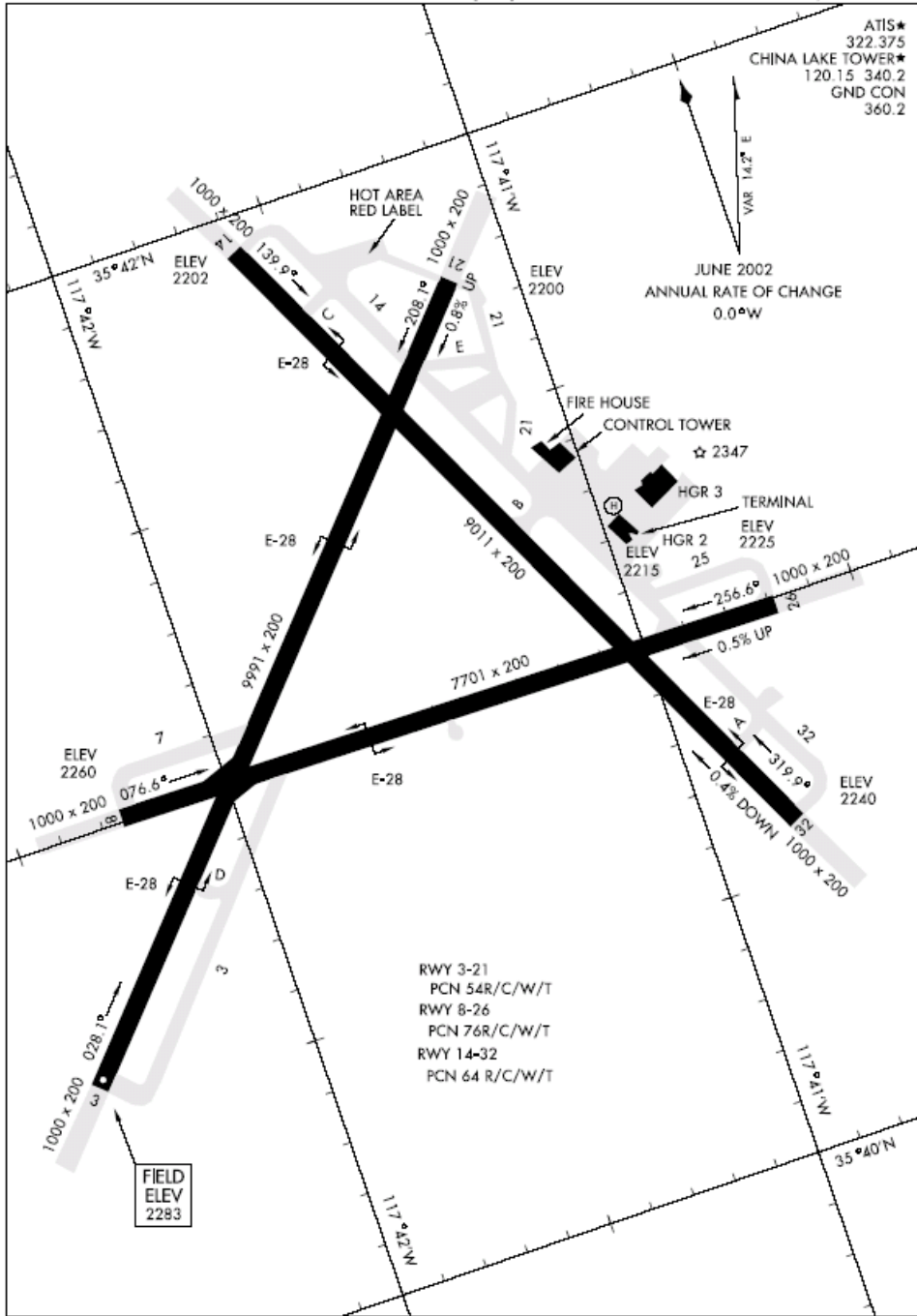
CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE
NID

CHINA LAKE
NID

03331 AIRPORT DIAGRAM CHINA LAKE NAWs (ARMITAGE FIELD) (NID)
AFD-914 [USN] RIDGECREST, CALIFORNIA

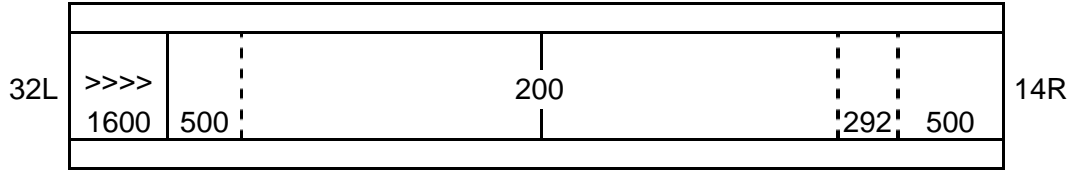


AIRPORT DIAGRAM RIDGECREST, CALIFORNIA
CHINA LAKE NAWs (ARMITAGE FIELD) (NID)

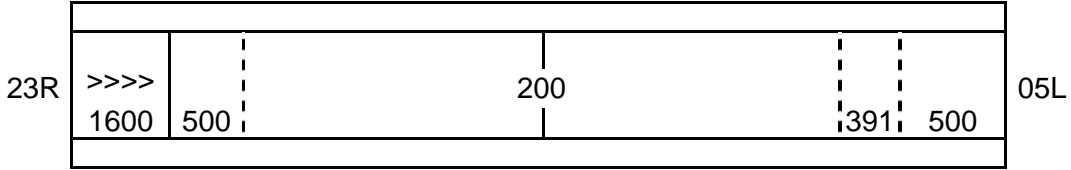
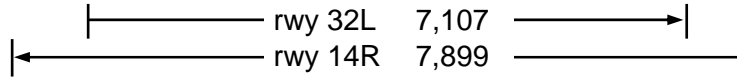
Cherry Point MCAS, North Carolina

Table Identifier

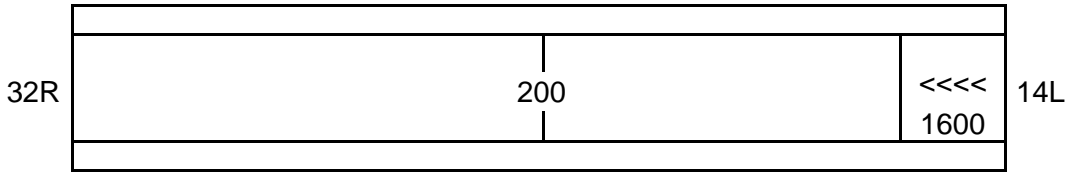
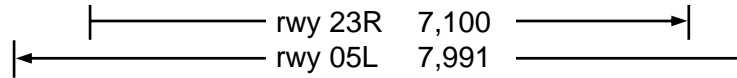
NKT



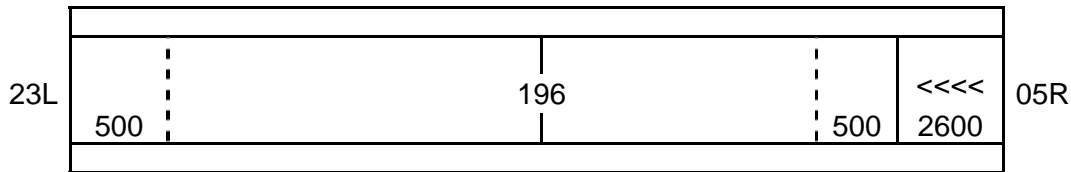
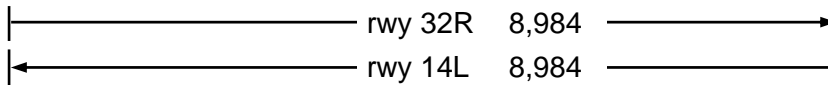
elev = 18



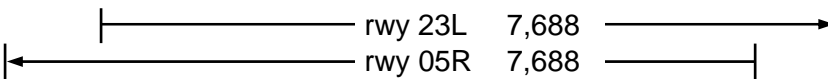
elev = 19



elev = 19



elev = 23



TACAN: EWN-83x (Pri-DME)
I/F above: N: 90k E: 98K
 S: clear W: 112k

NCA-101x (Sec)
 N: < 80k E: < 80k
 S: 112k W: 86k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 All over/underruns are unusable

CHERRY POINT
NKT

CHERRY POINT
NKT

CHERRY POINT
NKT

CHERRY POINT
NKT

CHERRY POINT
NKT



CHERRY POINT
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CHERRY POINT RWY NKT 14L



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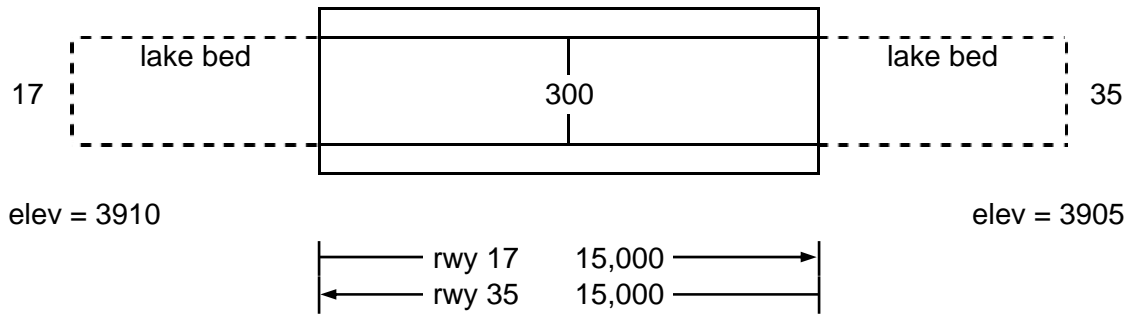
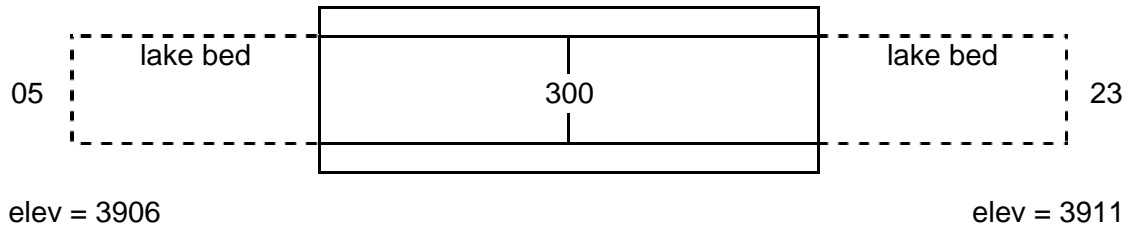
CHERRY POINT RWY NKT 32L



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White Sands Space Harbor, New Mexico

Table Identifier **NOR**



TACAN: SNG-121y (Pri) HMN-92x (Sec)
I/F above: N: clear E: clear N: < 80k E: < 80k
 S: clear W: clear S: < 80k W: 85k

MLS: (17-JR) (23-JR) ch 6
PAPI: 17, 23, 35
Ball Bar: 17, 23, 35
UHF: yes

NOTE

TAL training rwy 02/20 located in NW quadrant between rwys 05 and 17

WHITE SANDS
NOR

WHITE SANDS
NOR

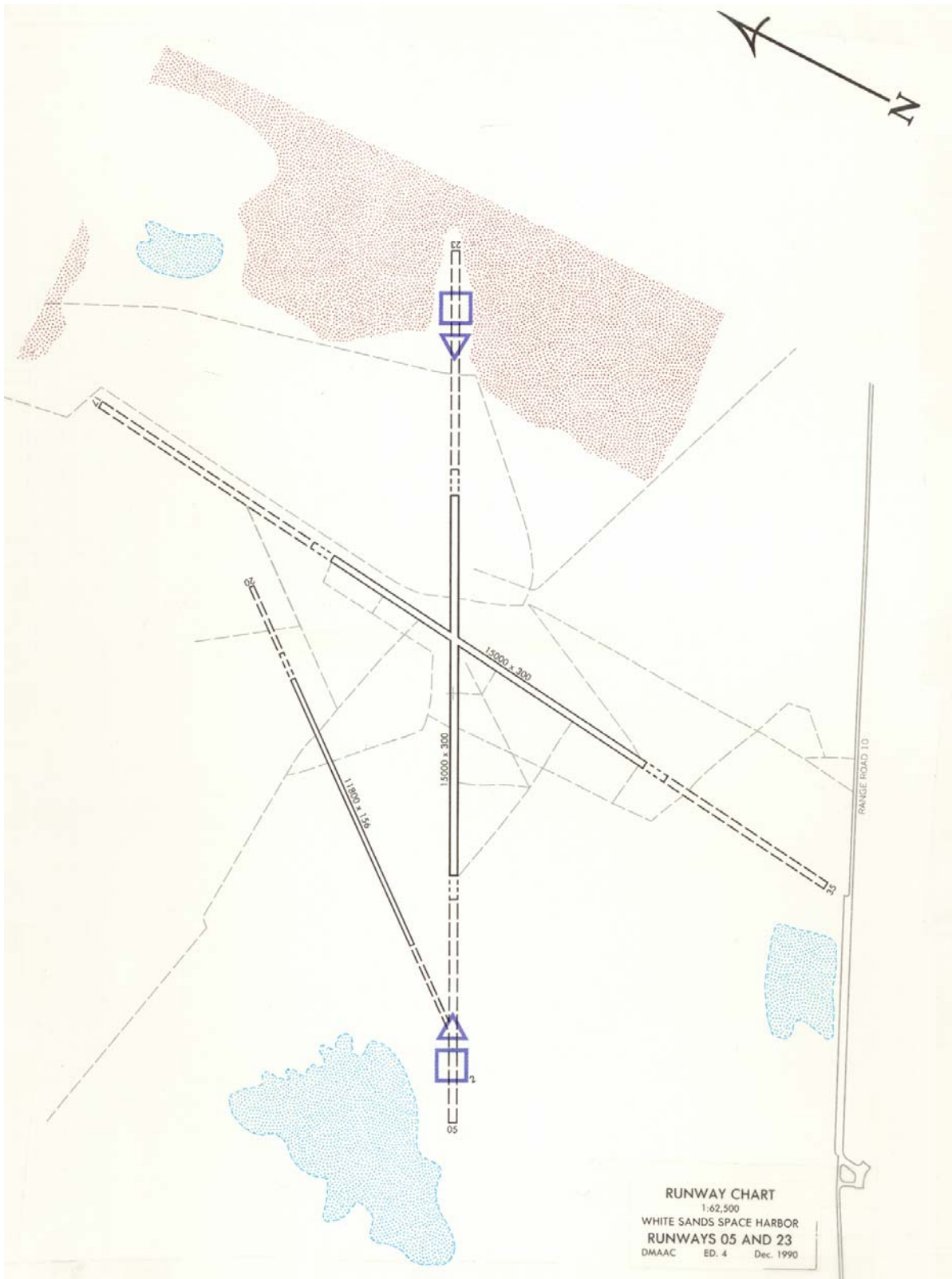
WHITE SANDS
NOR

WHITE SANDS
NOR

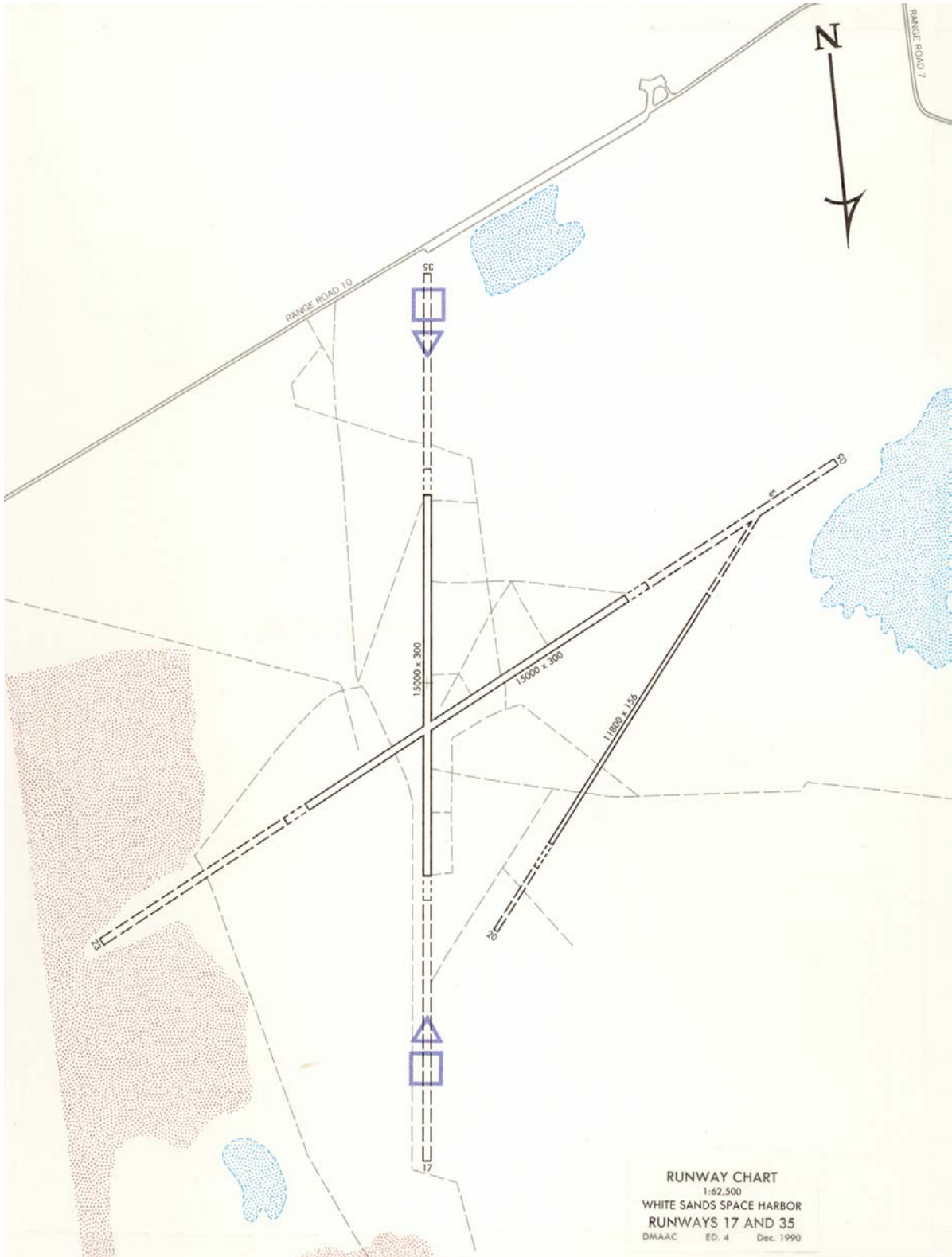
WHITE SANDS
NOR

WHITE SANDS NOR
WHITE SANDS NOR
WHITE SANDS NOR
WHITE SANDS NOR
WHITE SANDS NOR
WHITE SANDS NOR

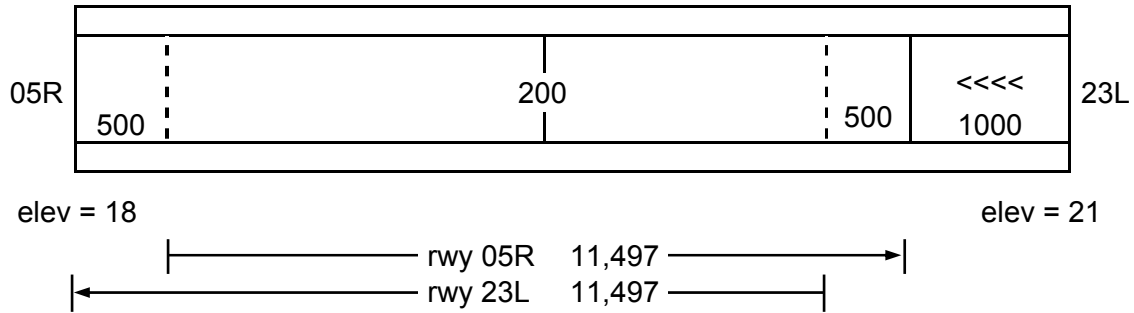




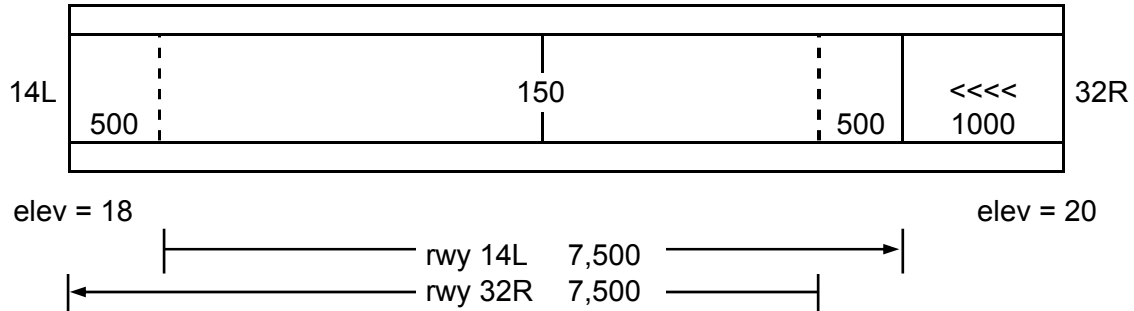
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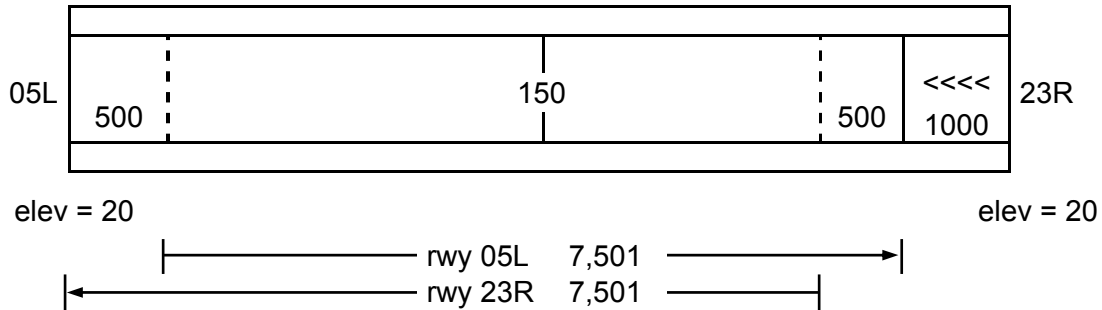
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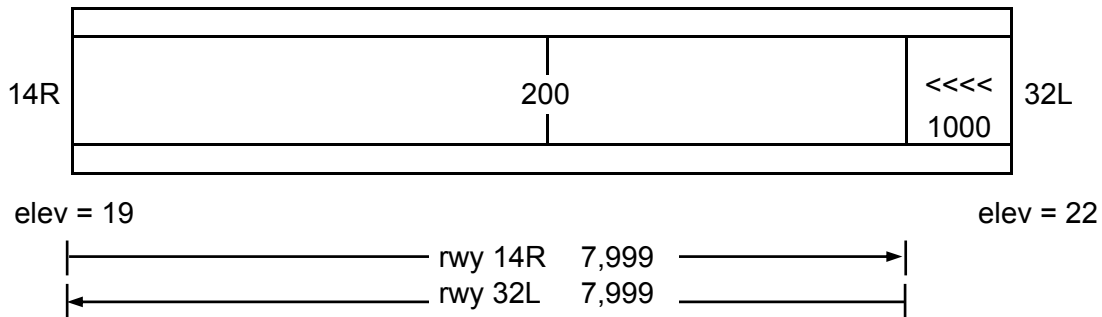
OCEANA
NTU



OCEANA
NTU



OCEANA
NTU



OCEANA
NTU

TACAN: NGU-48x (Pri) ORF-116x (Sec)
I/F above: N: 95k E: clear N: 102k E: clear
 S: clear W: clear S: 116k W: 97k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

OCEANA
NTU

NOTE
 All underruns are unusable.
 All overruns are usable

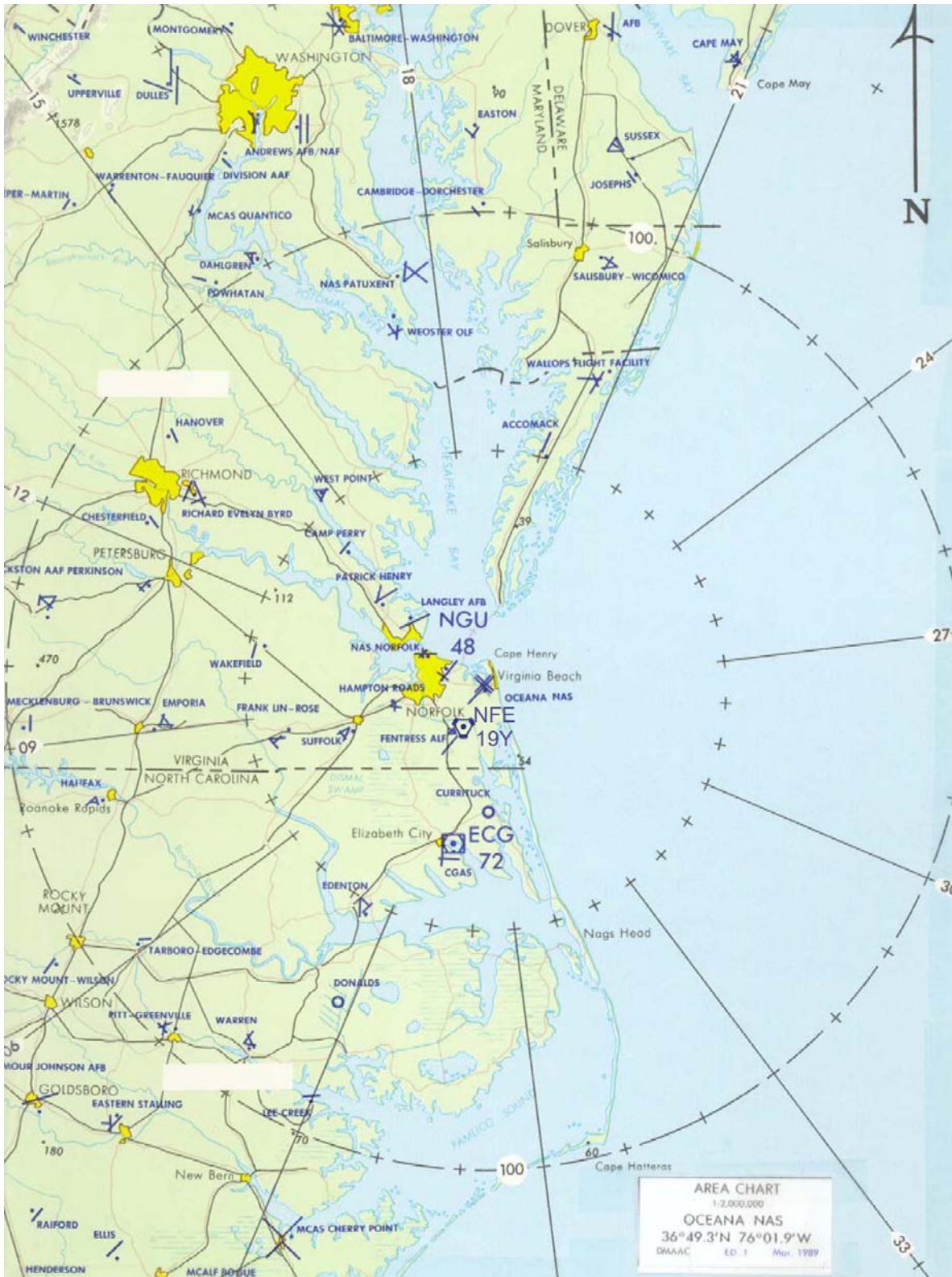
OCEANA
NTU

OCEANA
NTU

OCEANA
NTU

OCEANA
NTU

OCEANA
NTU





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OCEANA RWY NTU 05R
View 1



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OCEANA RWY NTU 05R
View 2



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OCEANA RWY NTU 23L



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CECIL FIELD AIRPORT DIAGRAM

04162

AIRPORT DIAGRAM

AL-998 (FAA)

JACKSONVILLE/ CECIL FIELD (VQQ)
JACKSONVILLE, FLORIDA

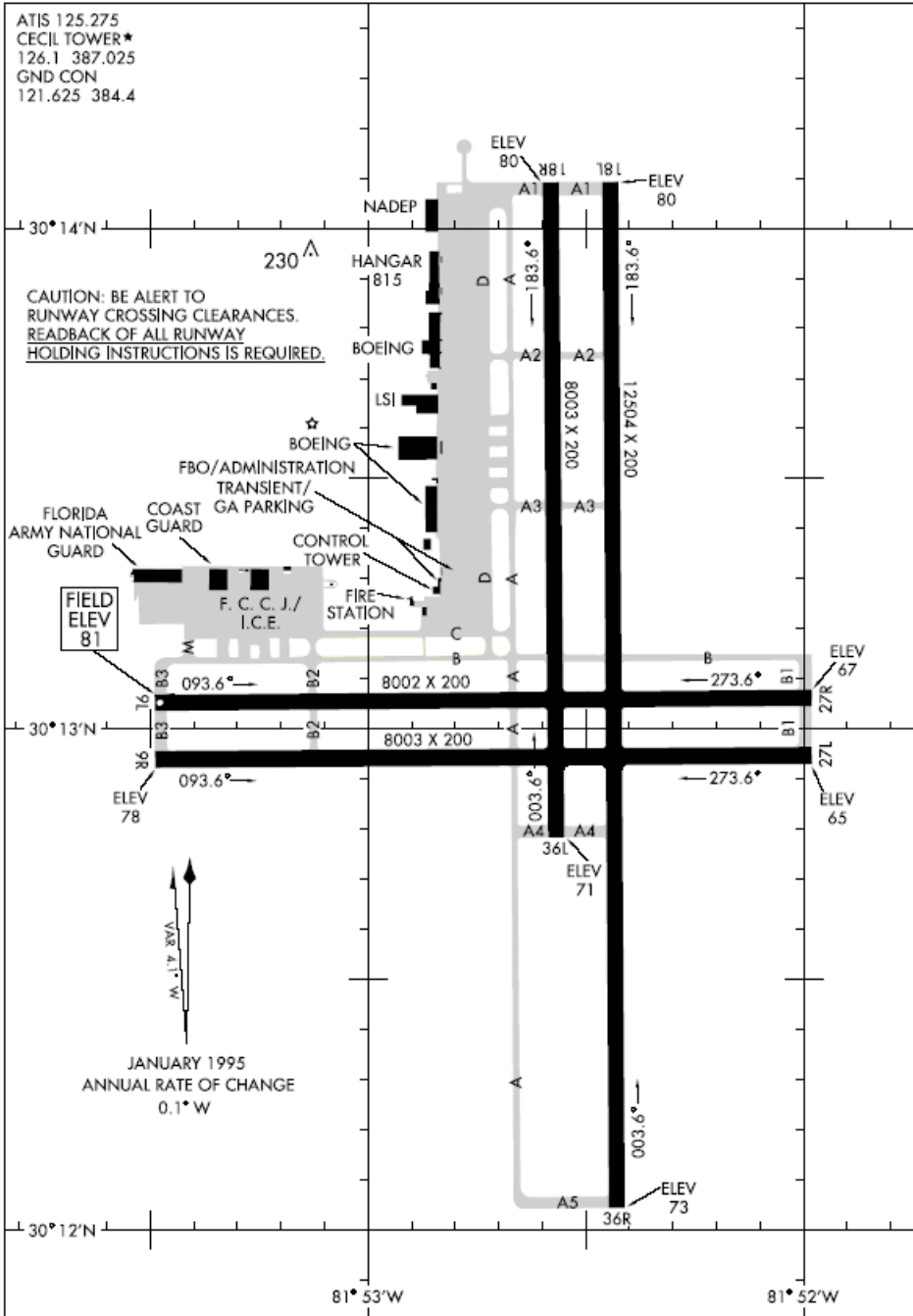
CECIL FIELD
NZC

CECIL FIELD
NZC

CECIL FIELD
NZC

CECIL FIELD
NZC

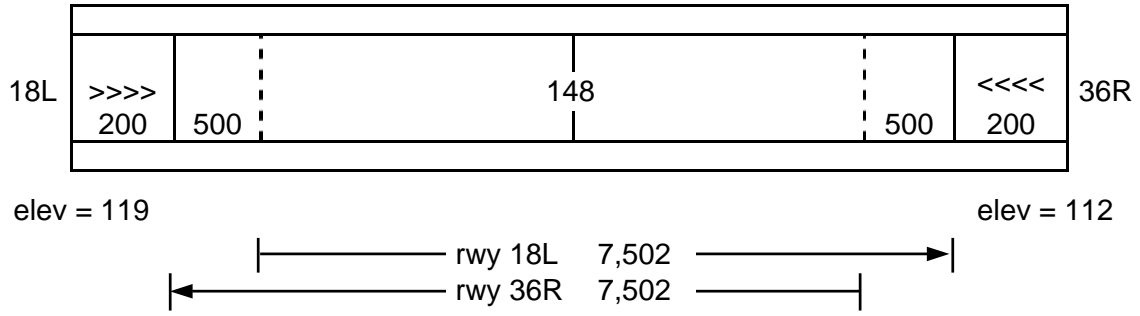
CECIL FIELD
NZC



AIRPORT DIAGRAM

04162

JACKSONVILLE, FLORIDA
JACKSONVILLE/ CECIL FIELD (VQQ)



TACAN: PEA-75x (Pri) PH-84x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

PEARCE
PEA

PEARCE
PEA

PEARCE
PEA

PEARCE
PEA

PEARCE
PEA

PEARCE AIRPORT DIAGRAM

I

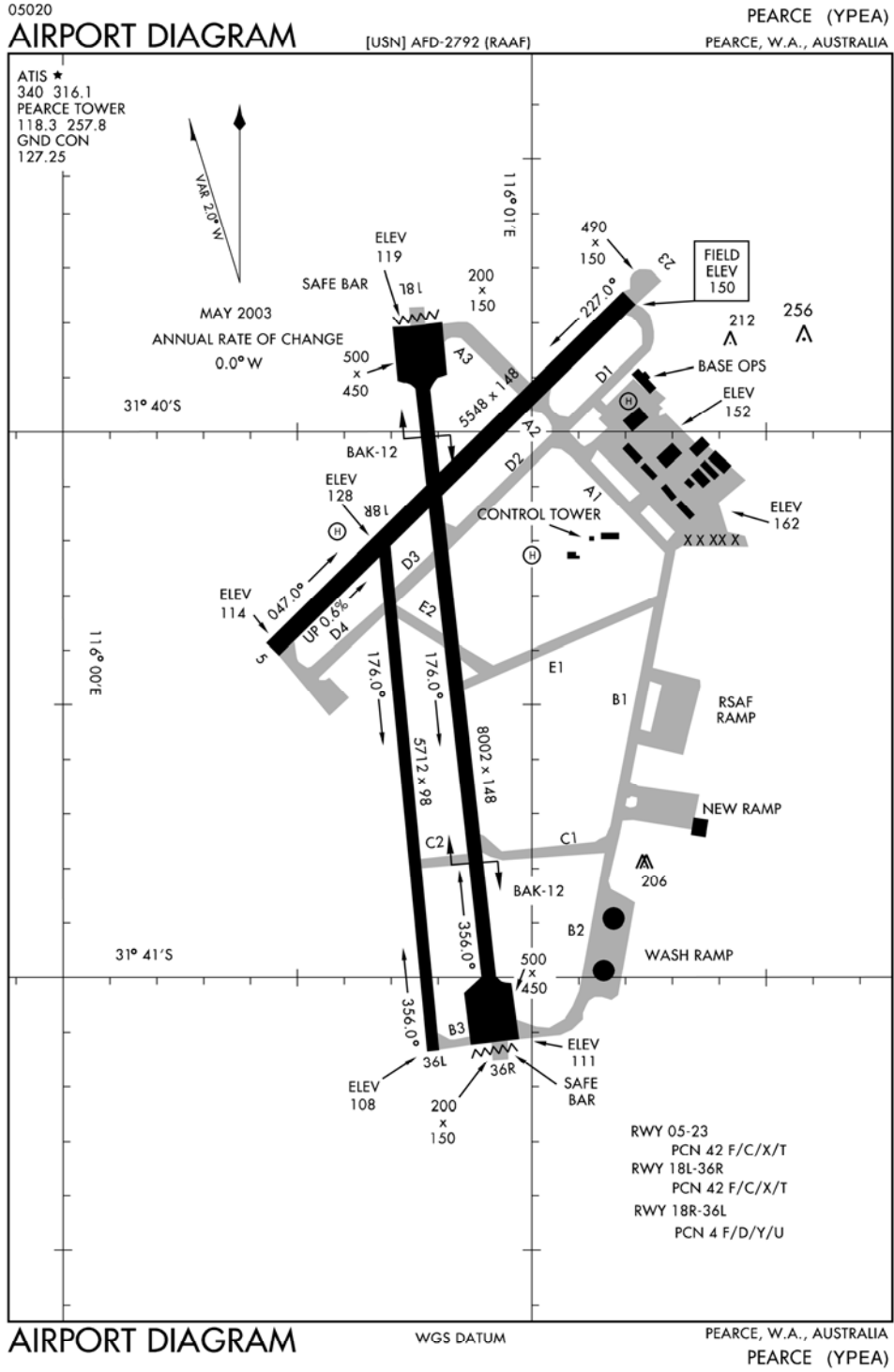
PEARCE
PEA

PEARCE
PEA

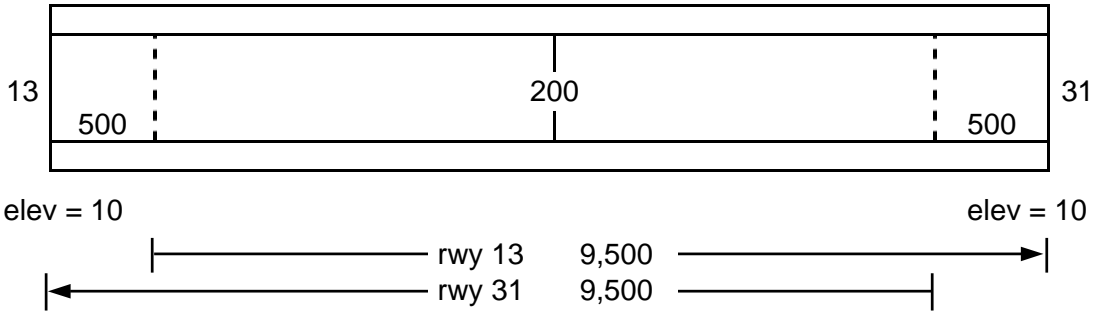
PEARCE
PEA

PEARCE
PEA

PEARCE
PEA



Effective 9 JUN 2005 - 7 JUL 2005



TACAN: TTS-59y (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

COF-97x (Sec)
 N: 82k E: clear
 S: clear W: 80k

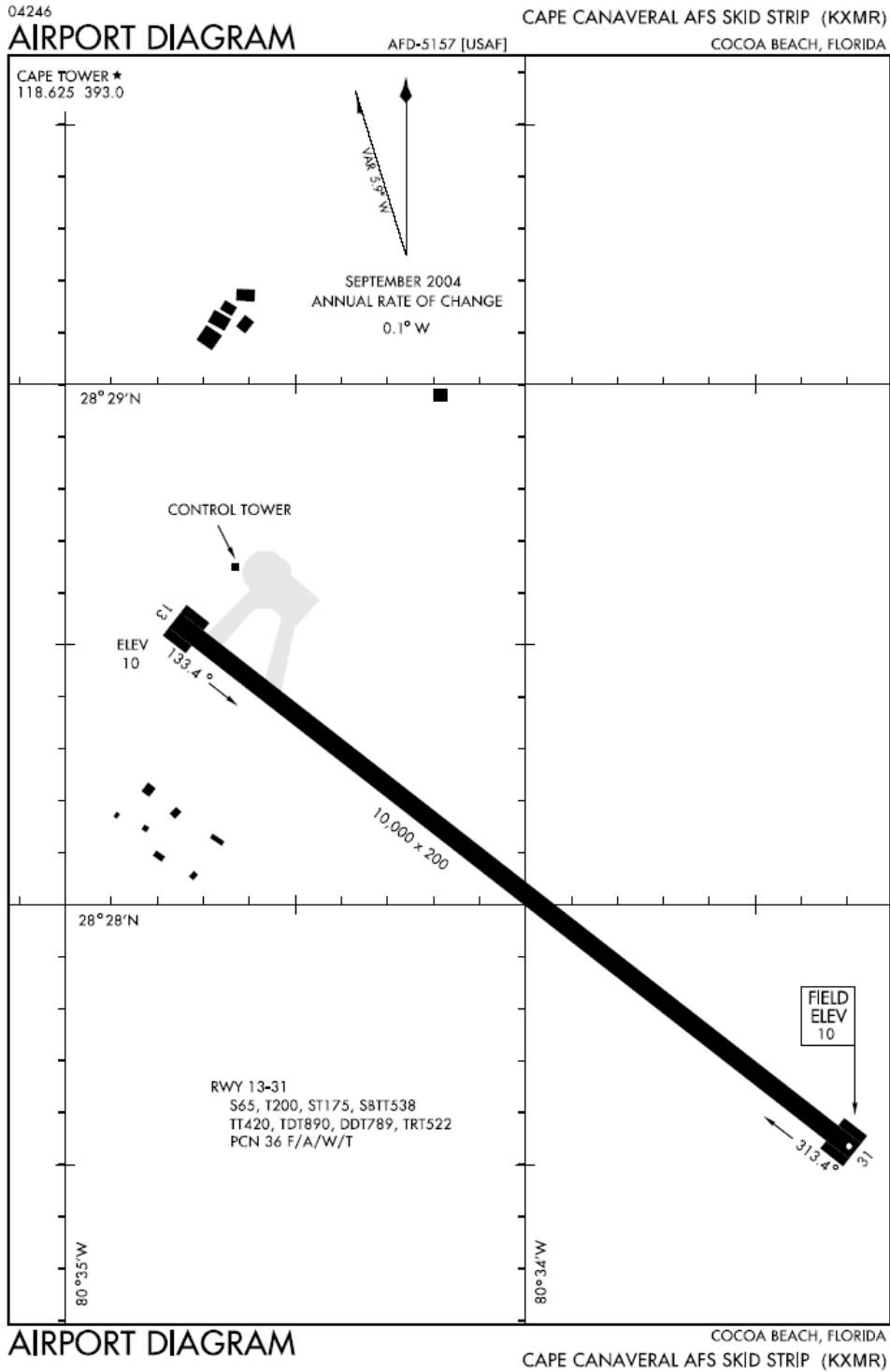
RTLS I/F: N: clear E: clear
 S: clear W: clear

N: 80k E: clear
 S: 182k W: < 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

CAPE CANAVERAL
 PMR
 CAPE CANAVERAL
 PMR
 CAPE CANAVERAL
 PMR
 CAPE CANAVERAL
 PMR
 CAPE CANAVERAL
 PMR

CAPE CANAVERAL AIR FORCE STATION SKID STRIP AIRPORT DIAGRAM



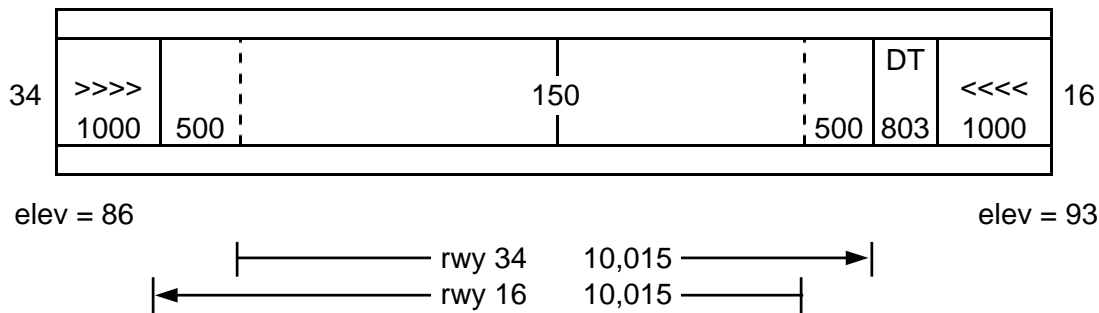
CAPE CANAVERAL
 PMR

CAPE CANAVERAL
 PMR

CAPE CANAVERAL
 PMR

CAPE CANAVERAL
 PMR

CAPE CANAVERAL
 PMR



TACAN: ENE-118x (Pri) BOS-74x (Sec)
I/F above: N: clear E: clear N: 148k E: 154k
 S: clear W: 103k S: clear W: 98k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 All over/underruns are unusable.
 The 803-ft displaced threshold on rwy 16 is unusable

PEASE
PSM

PEASE
PSM

PEASE
PSM

PEASE
PSM

PEASE
PSM

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PSM

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PSM



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PEASE RWY PSM 16

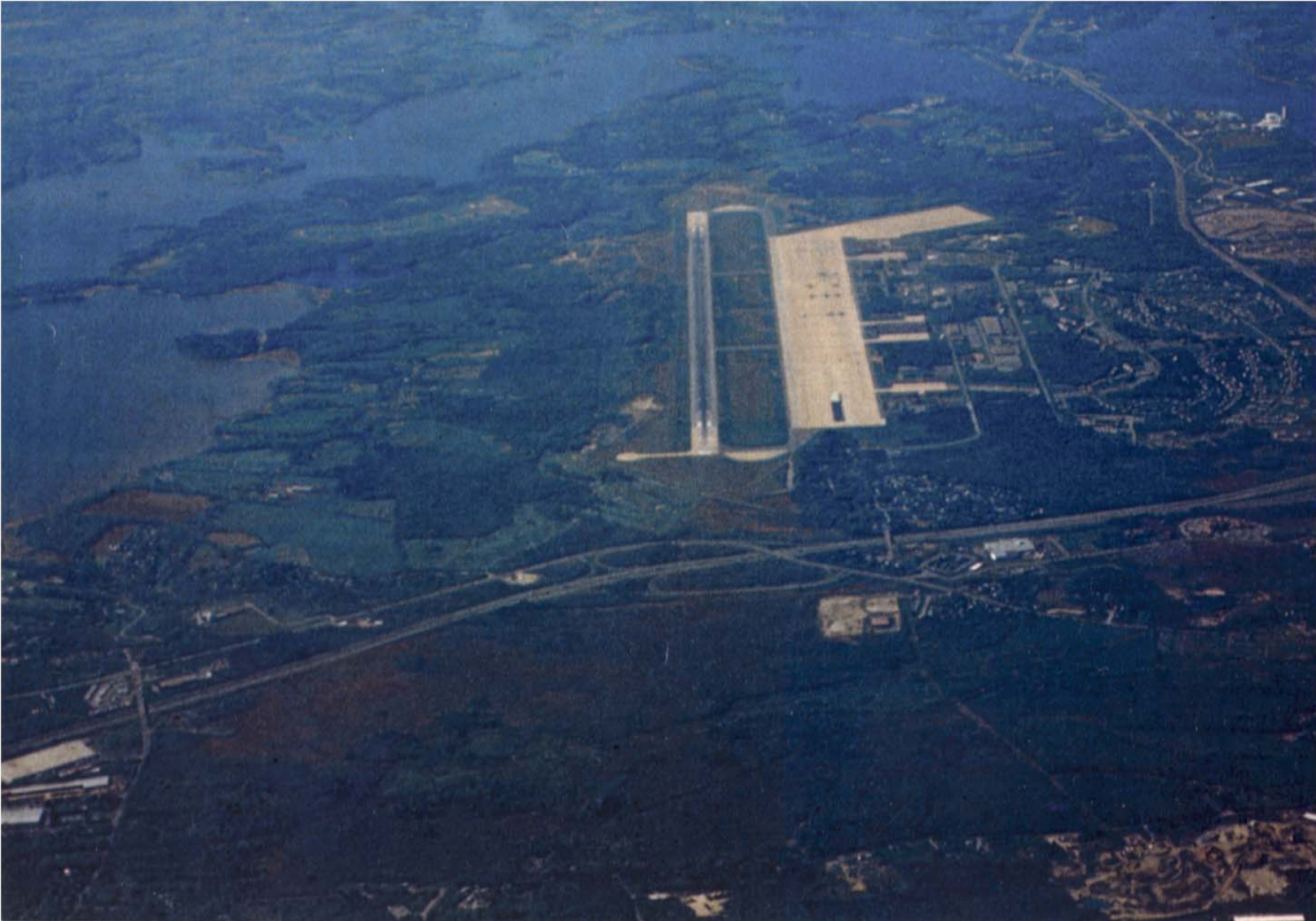


PSM-A

MAPS/ALL/GEN G

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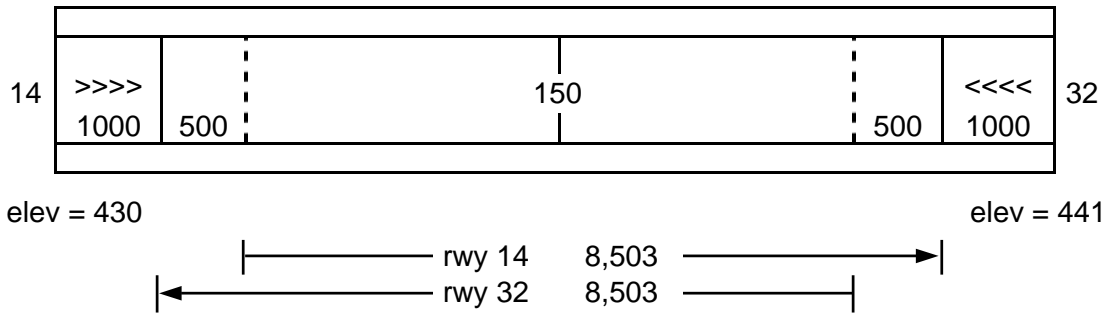
PEASE RWY PSM 34



PSM-C

MAPS/ALL/GEN G

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TINDAL
PTN

TACAN: TDL-70x (Pri)
I/F above: N: clear E: clear
 S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

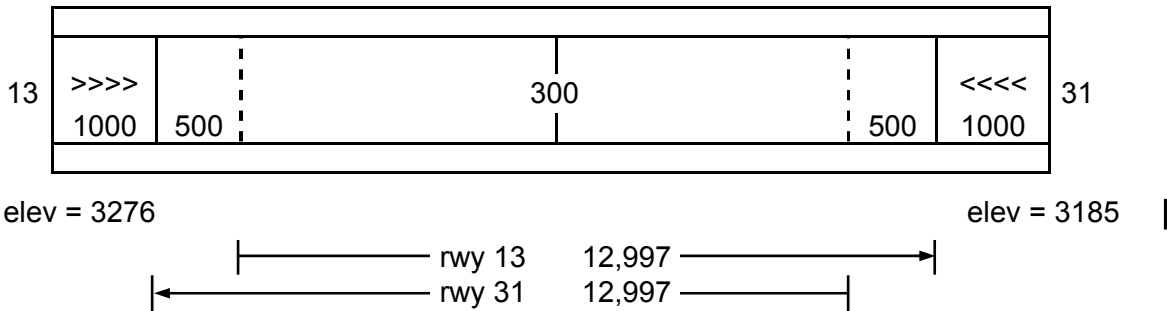
TINDAL
PTN

NOTE
 Both over/underruns are unusable

TINDAL
PTN

TINDAL
PTN

TINDAL
PTN



TACAN: RAP-70x (Pri) RCA-25x (Sec)
I/F above: N: 138k E: 121k N: << 80k E: << 80k
 S: 92k W: 109k S: << 80k W: << 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

ELLSWORTH
RCA

ELLSWORTH
RCA

ELLSWORTH
RCA

ELLSWORTH
RCA

ELLSWORTH
RCA

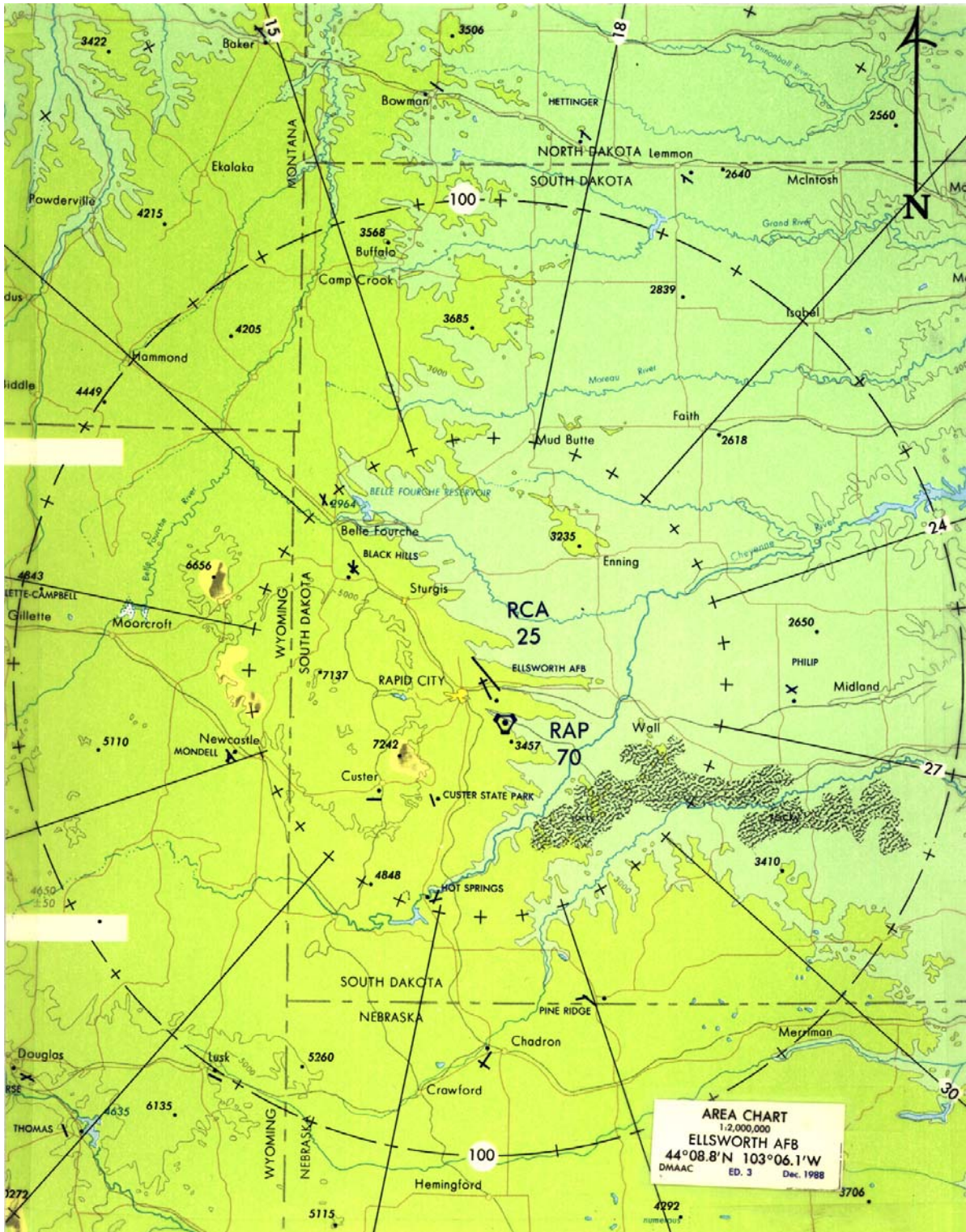
ELLSWORTH
RCA

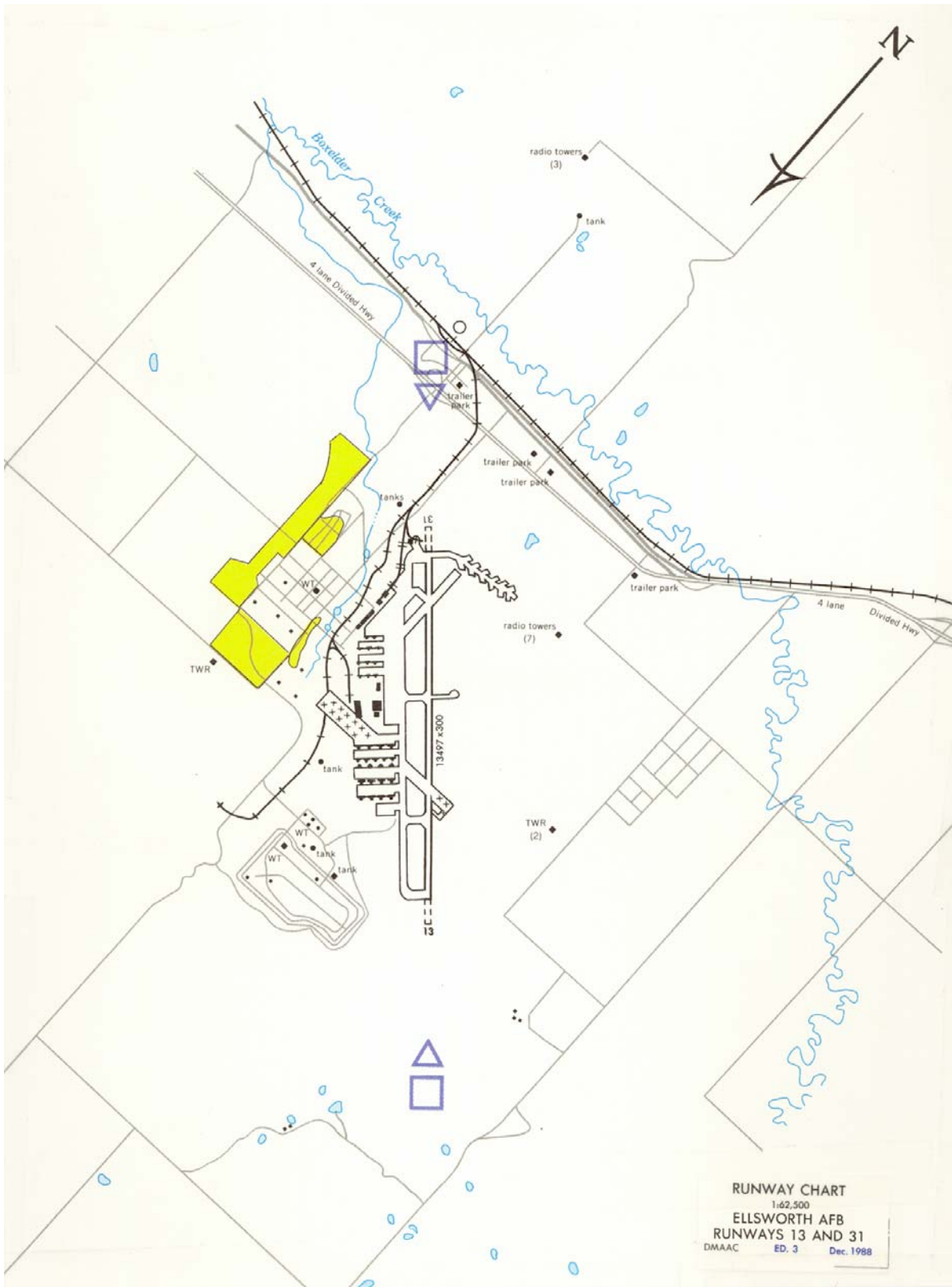
ELLSWORTH
RCA

ELLSWORTH
RCA

ELLSWORTH
RCA

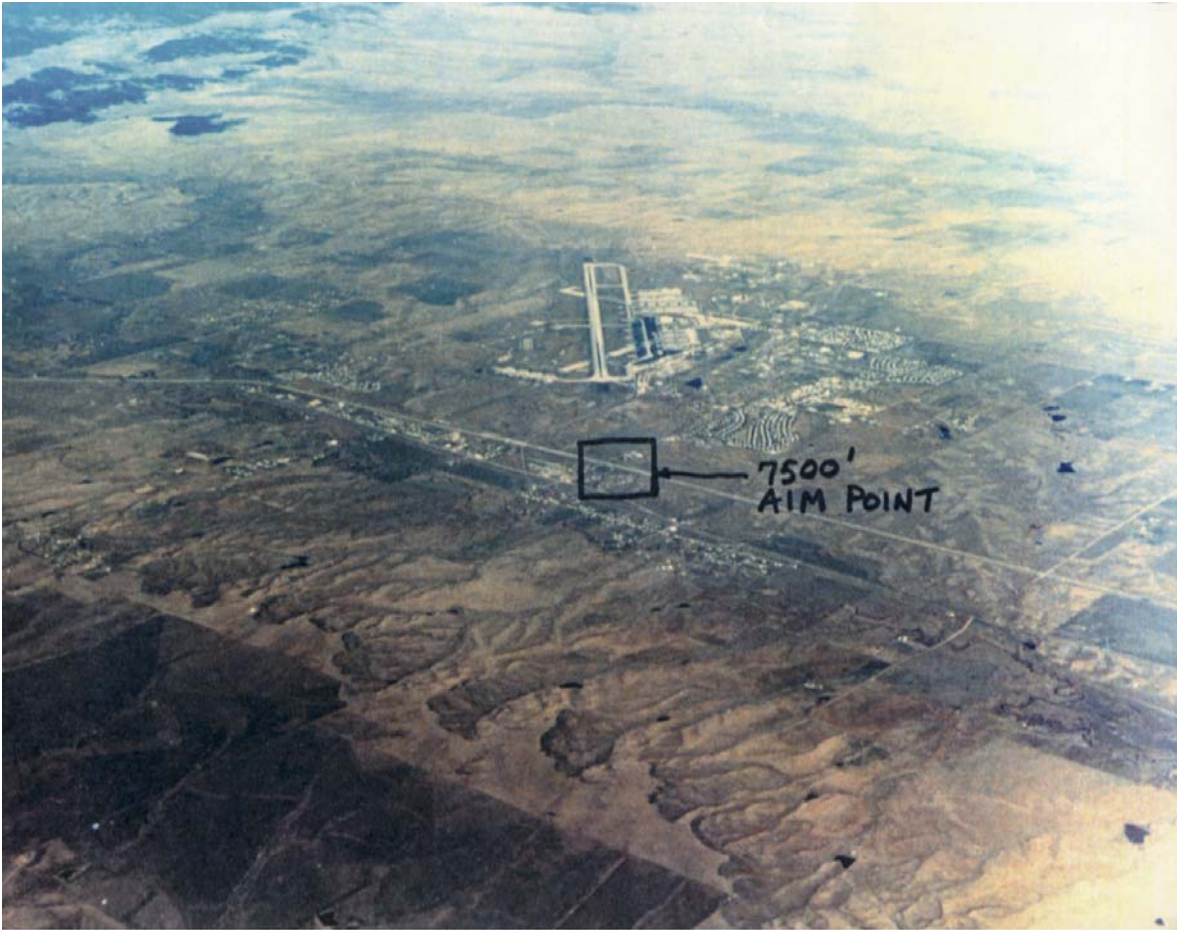
ELLSWORTH
RCA





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ELLSWORTH RWY RCA 31

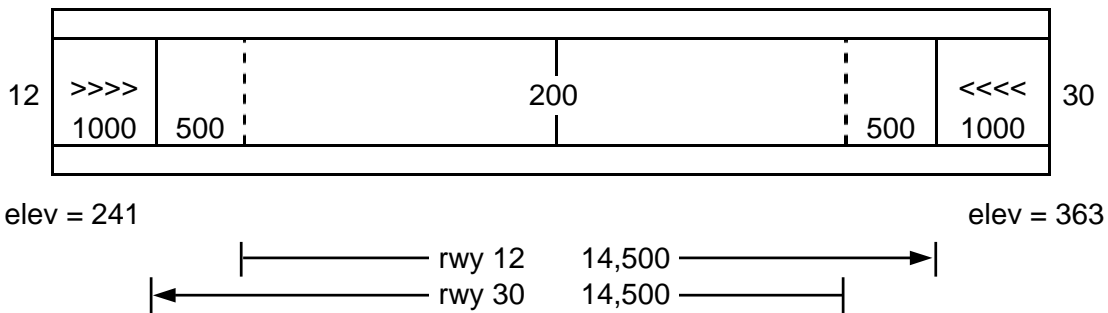


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ELLSWORTH RWY RCA 13



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TACAN: VBG-59y (Pri) MQO-71x (Sec)
I/F above: N: clear E: clear N: clear E: 129k
 S: clear W: clear S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

NOTE
 Both over/underruns are unusable

VANDENBERG
VBG

VANDENBERG
VBG

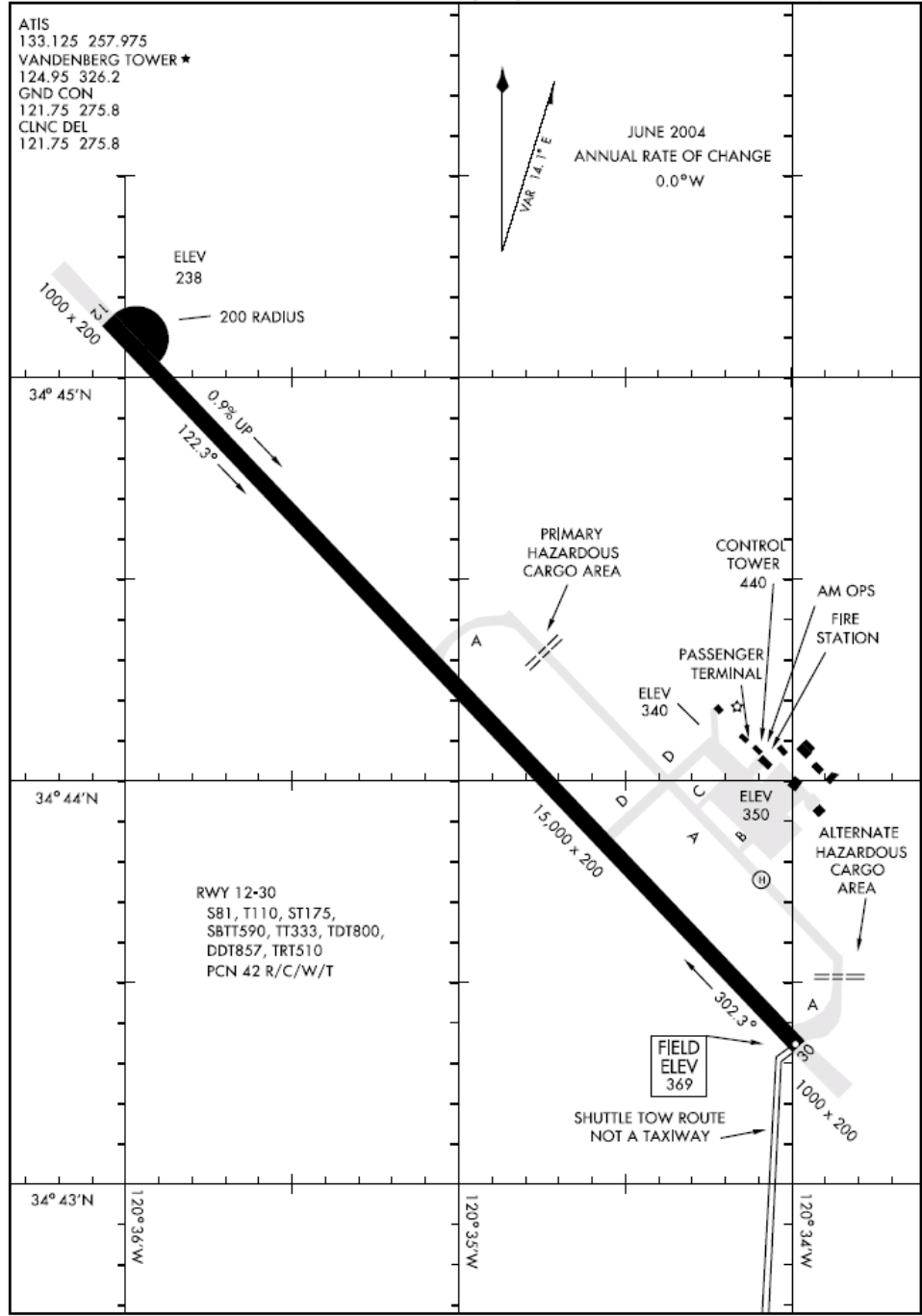
VANDENBERG
VBG

VANDENBERG
VBG

VANDENBERG
VBG

VANDENBERG AIR FORCE BASE AIRPORT DIAGRAM

04190 AIRPORT DIAGRAM AFD-770 [USAF] VANDENBERG AFB (KVBG) LOMPOC, CALIFORNIA



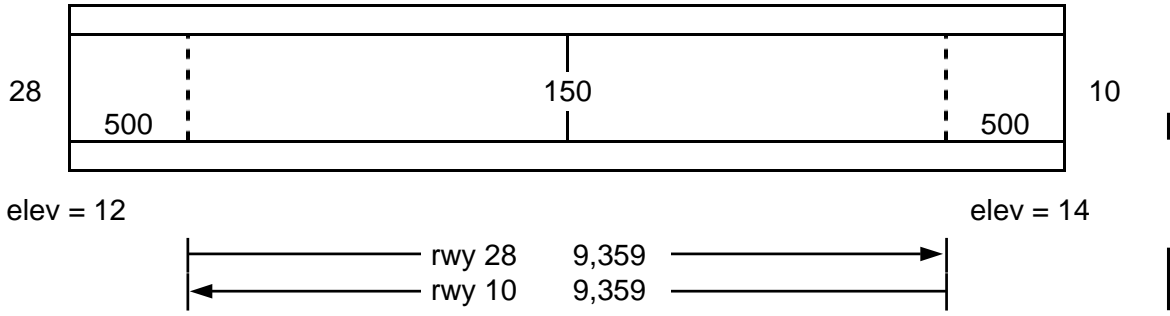
AIRPORT DIAGRAM LOMPOC, CALIFORNIA VANDENBERG AFB (KVBG)

VANDENBERG VBG
VANDENBERG VBG
VANDENBERG VBG
VANDENBERG VBG
VANDENBERG VBG
VANDENBERG VBG

Wake Island AAF, Wake Island

Table Identifier

WAK



TACAN: AWK-82x (Pri)
I/F above: N: clear E: clear
S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

WAKE ISLAND
WAK

WAKE ISLAND
WAK

WAKE ISLAND
WAK

WAKE ISLAND
WAK

WAKE ISLAND
WAK

WAKE ISLAND
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WAKE ISLAND
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WAK

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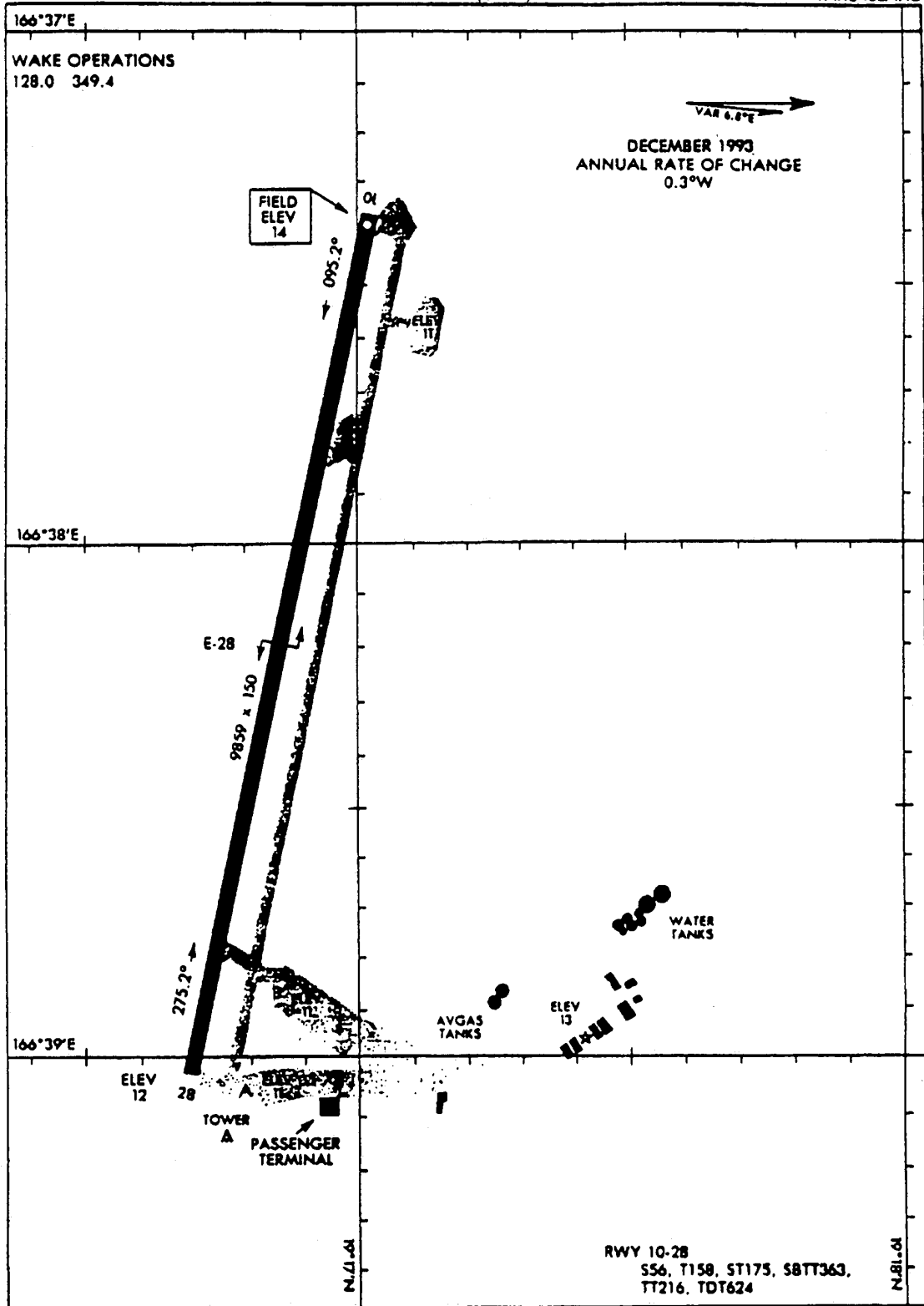
WAKE ISLAND AIRPORT DIAGRAM

95089

AIRPORT DIAGRAM

AFD-2162 (USAF)

WAKE ISLAND AAF (PWAK)
WAKE ISLAND



AIRPORT DIAGRAM

WGS DATUM

WAKE ISLAND
WAKE ISLAND AAF (PWAK)

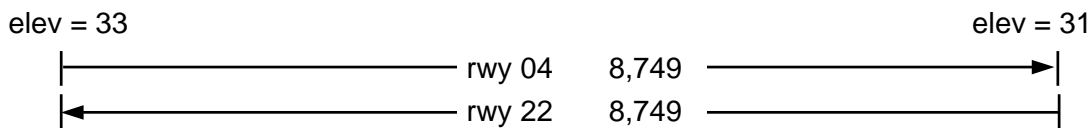
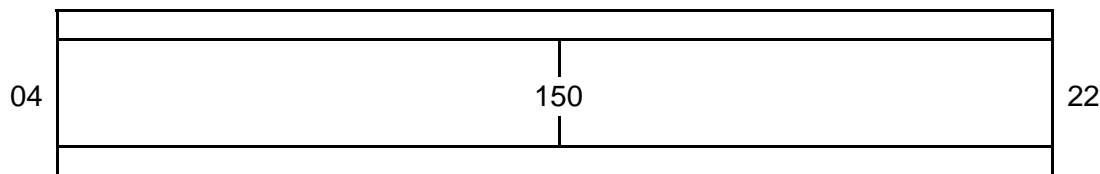
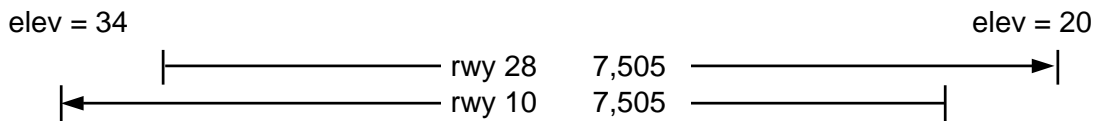
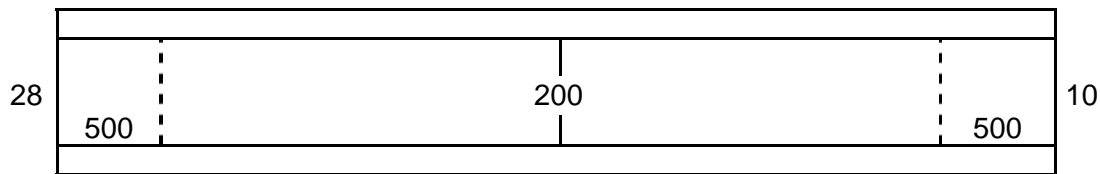
WAKE ISLAND RWY WAK 28



WAKE ISLAND RWYS WAK 10 AND WAK 28



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TACAN: SBY-49x (Pri)
I/F above: N: << 80k E: << 80k
 S: << 80k W: << 80k

SWL-71x (Sec)
 N: < 80k E: clear
 S: < 80k W: < 80k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes (guard only)

WALLOPS
WAL

WALLOPS
WAL

WALLOPS
WAL

WALLOPS
WAL

WALLOPS
WAL

WALLOPS
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WALLOPS RWY WAL 10



WALLOPS RWY WAL 28



HALIFAX
YHZ

HALIFAX
YHZ

HALIFAX
YHZ

HALIFAX
YHZ

HALIFAX
YHZ

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HALIFAX AIRPORT DIAGRAM

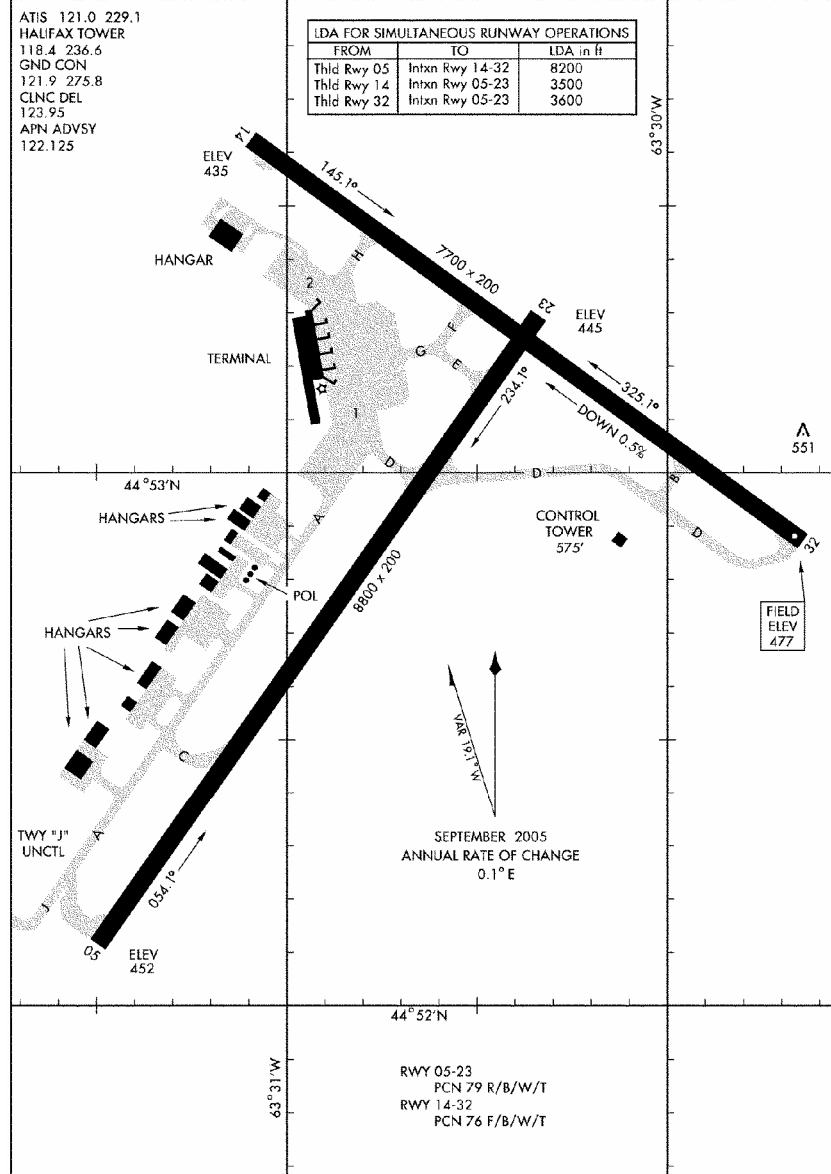
05244

AIRPORT DIAGRAM

[USAF] AFD-2363 (TC)

HALIFAX INTL (CYHZ)

HALIFAX, NS, CANADA



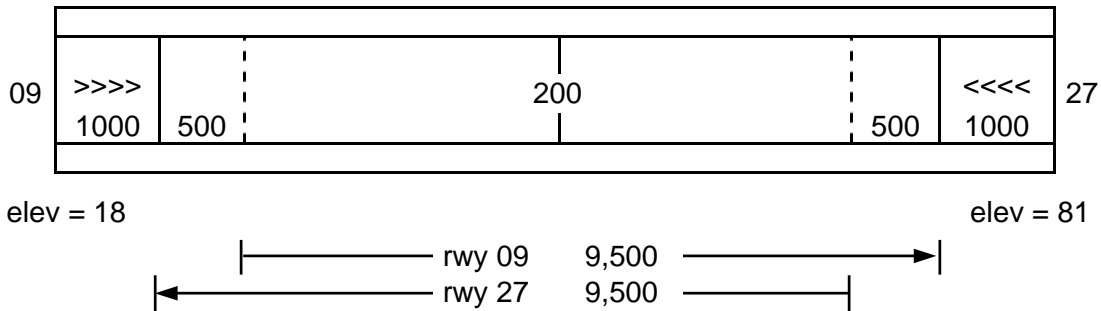
AIRPORT DIAGRAM

WGS DATUM

HALIFAX, NS, CANADA

HALIFAX INTL (CYHZ)

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TACAN: YJT-78x (Pri) YDF-80x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: clear S: 95k W: 92k

MLS: none
PAPI: none
Ball Bar: none
UHF: none (UHF available only through Gander Center)

NOTE
 Both over/underruns are unusable

STEPHENVILLE
YJT

STEPHENVILLE
YJT

STEPHENVILLE
YJT

STEPHENVILLE
YJT

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STEPHENVILLE AIRPORT DIAGRAM

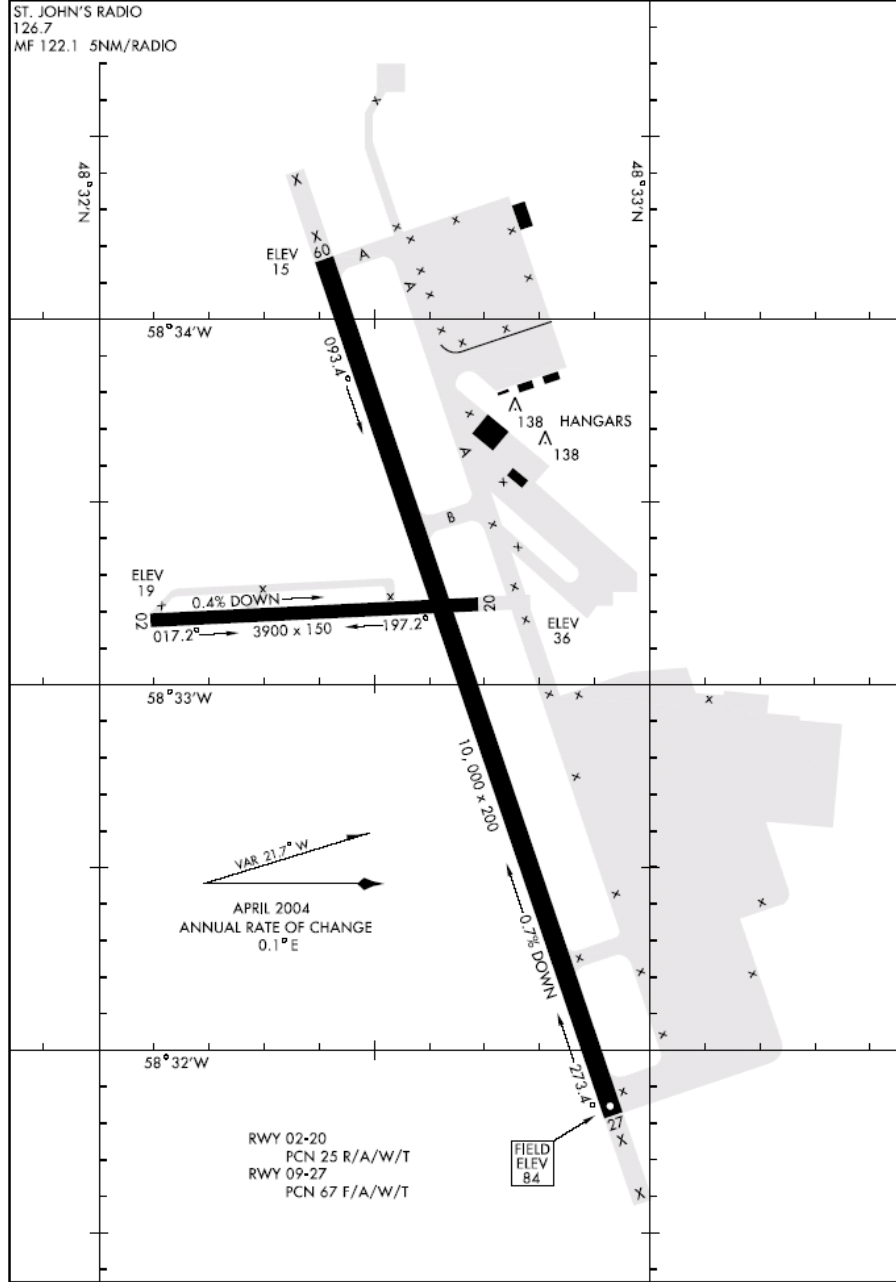
04106

AIRPORT DIAGRAM

[USAF] AFD-1130 (TC)

STEPHENVILLE (CYJT)

STEPHENVILLE, NF, CANADA



AIRPORT DIAGRAM

WGS DATUM

STEPHENVILLE, NF, CANADA

STEPHENVILLE (CYJT)

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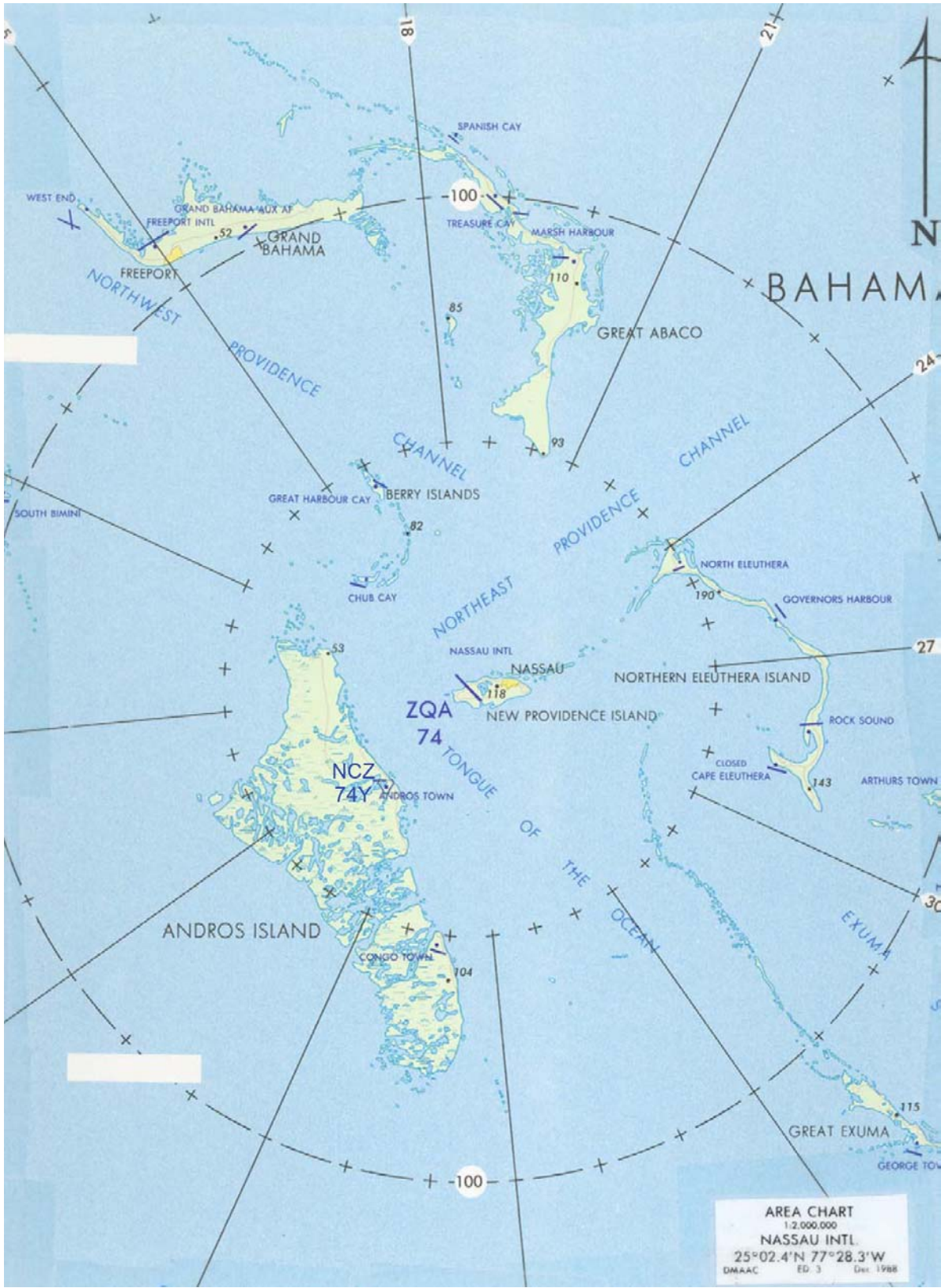
NASSAU
YNN

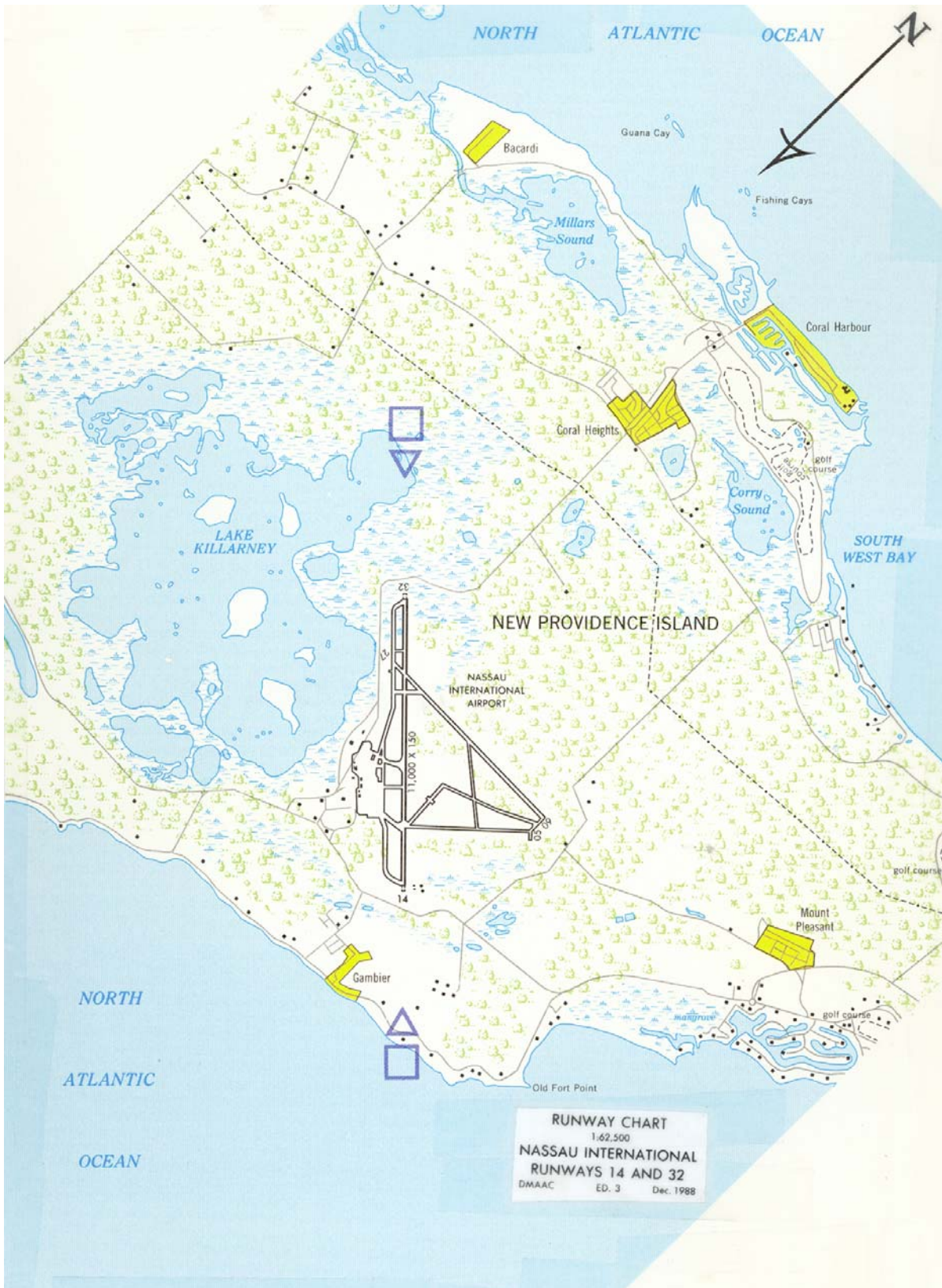
NASSAU
YNN

NASSAU
YNN

NASSAU
YNN

NASSAU
YNN



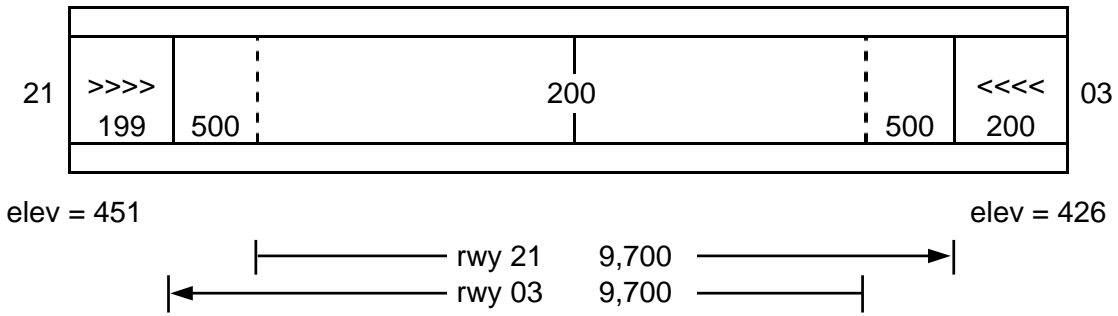


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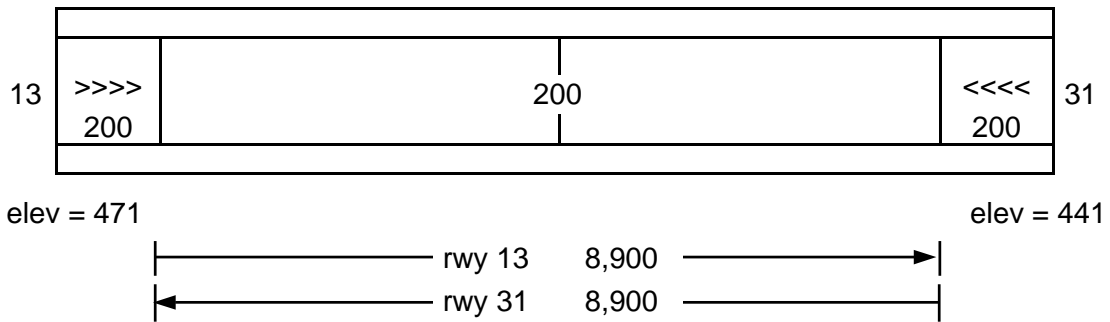
NASSAU RWY YNN 14



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GANDER
YQX



GANDER
YQX

TACAN: YQX-74x (Pri) IQX-32x (Sec-DME)
I/F above: N: clear E: clear N: clear E: clear
 S: clear W: 141k S: clear W: clear

MLS: none
PAPI: none
Ball Bar: none
UHF: yes

GANDER
YQX

NOTE
 All over/underruns are unusable

GANDER
YQX

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YQX

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YQX

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GANDER AIRPORT DIAGRAM

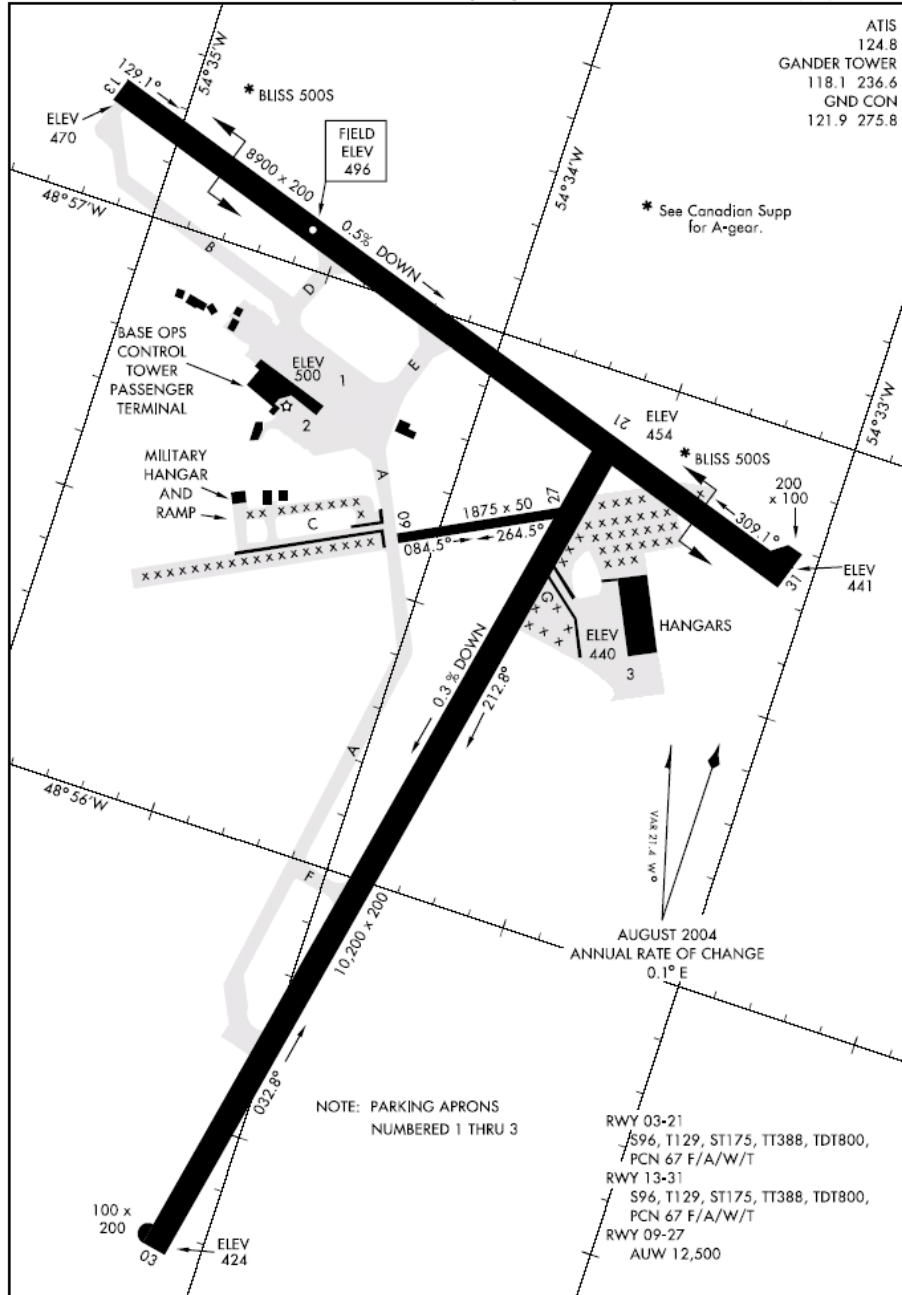
04218

AIRPORT DIAGRAM

AFD-1133 [USAF]

GANDER INTL (CYQX)

GANDER, NF, CANADA



ATIS
124.8
GANDER TOWER
118.1 236.6
GND CON
121.9 275.8

* See Canadian Supp
for A-gear.

AUGUST 2004
ANNUAL RATE OF CHANGE
0.1° E

NOTE: PARKING APRONS
NUMBERED 1 THRU 3

RWY 03-21
S96, T129, ST175, TT388, TDT800,
PCN 67 F/A/W/T
RWY 13-31
S96, T129, ST175, TT388, TDT800,
PCN 67 F/A/W/T
RWY 09-27
AUW 12,500

AIRPORT DIAGRAM

WGS DATUM

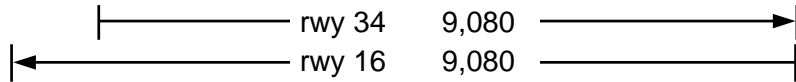
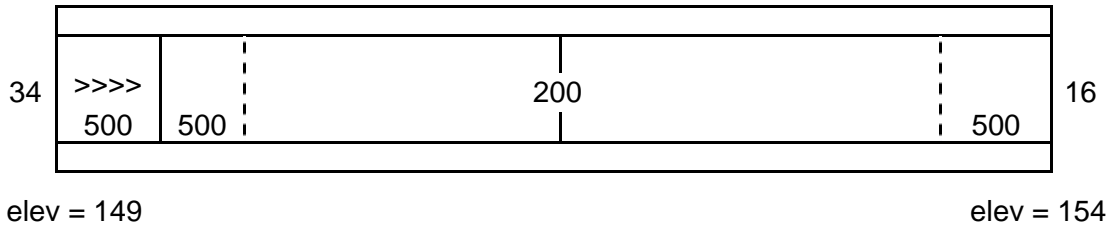
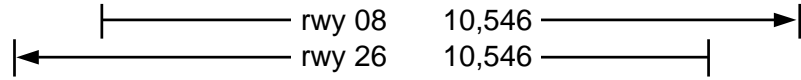
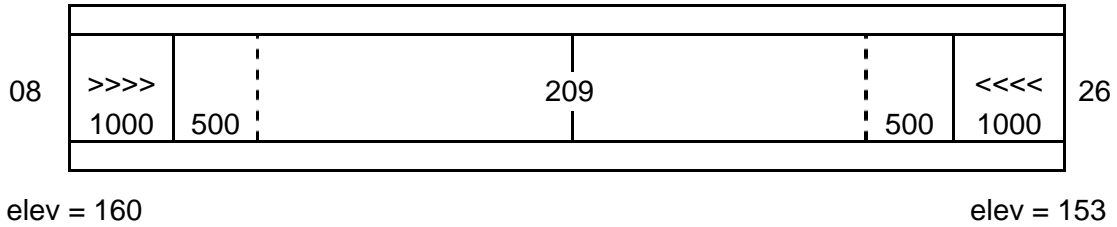
GANDER, NF, CANADA
GANDER INTL (CYQX)

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GANDER RWYS YQX 03 AND YQX 21



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TACAN: UYR-40x (Pri) YYR-120x (Sec-DME)
I/F above: N: 148k E: clear N: clear E: clear
 S: clear W: 116k S: 97k W: 117k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes

NOTE
 All over/underruns are unusable

GOOSE BAY
YYR

GOOSE BAY
YYR

GOOSE BAY
YYR

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GOOSE BAY AIRPORT DIAGRAM

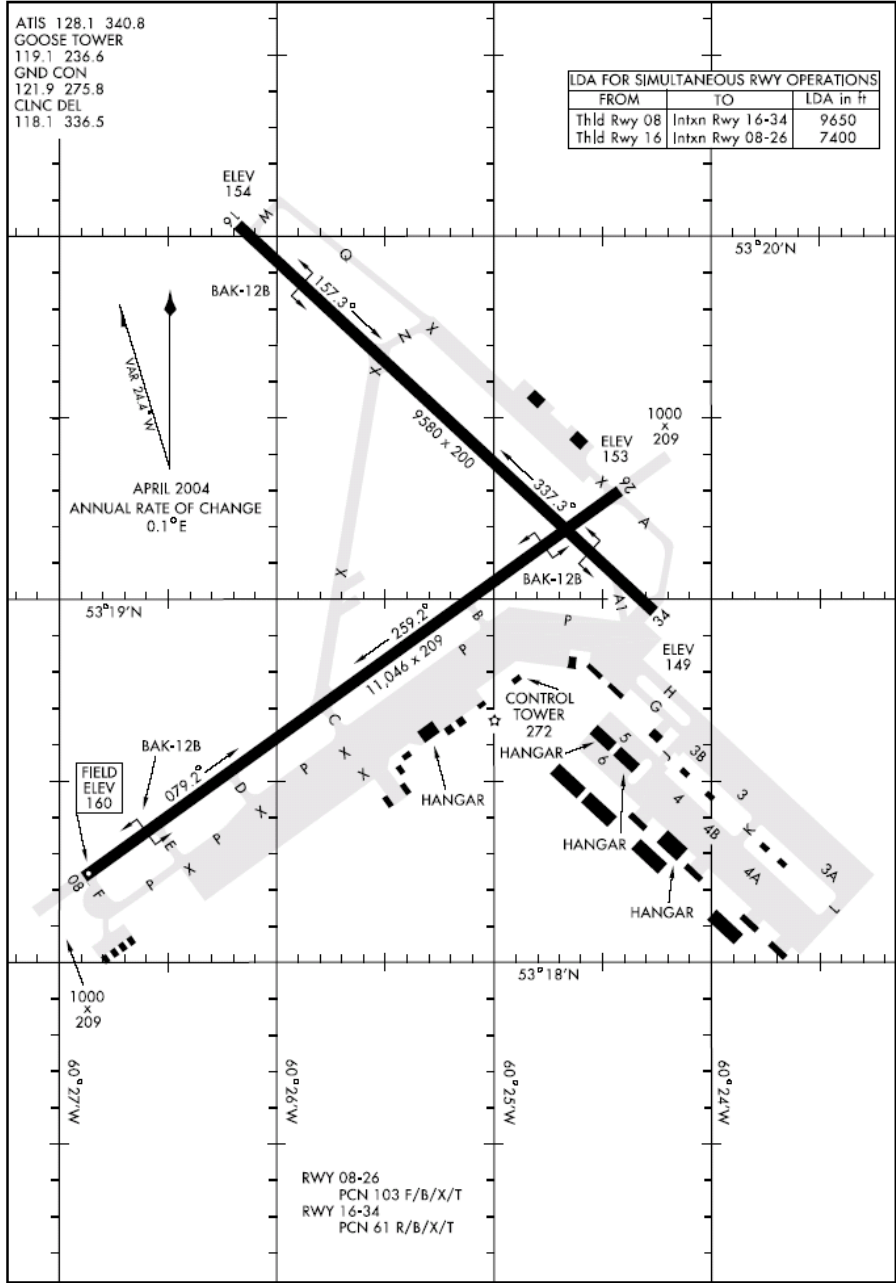
04106

AIRPORT DIAGRAM

[USAF] AFD-1137 [DND]

GOOSE BAY (CYR)

GOOSE BAY, NL, CANADA



AIRPORT DIAGRAM

WGS DATUM

GOOSE BAY, NL, CANADA

GOOSE BAY (CYR)

RWY 08-26
PCN 103 F/B/X/T
RWY 16-34
PCN 61 R/B/X/T

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GOOSE BAY RWYS YR 08 AND YR 26
View 1



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GOOSE BAY RWYS YR 08 AND YR 26
View 2

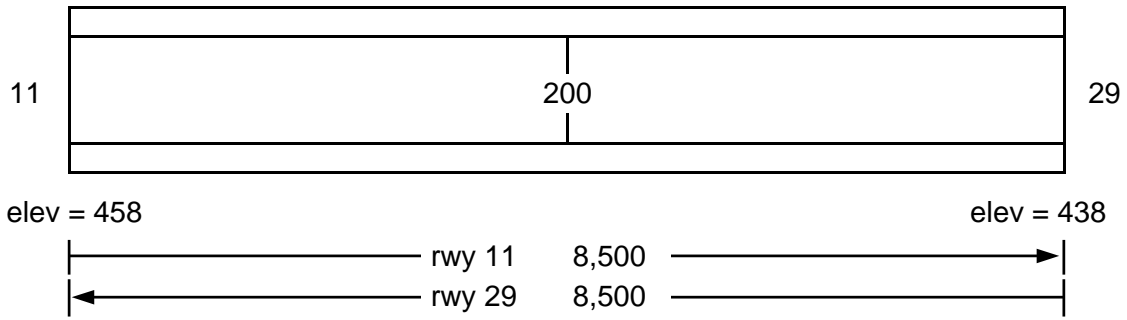


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St. John's International, Newfoundland, Canada

Table Identifier

YYT



TACAN: UYT-23x (Pri)
I/F above: N: clear E: clear
S: clear W: clear

YYT-82x (Sec-DME)
N: clear E: clear
S: clear W: 117k

MLS: none
PAPI: none
Ball Bar: none
UHF: yes

ST JOHNS
YYT

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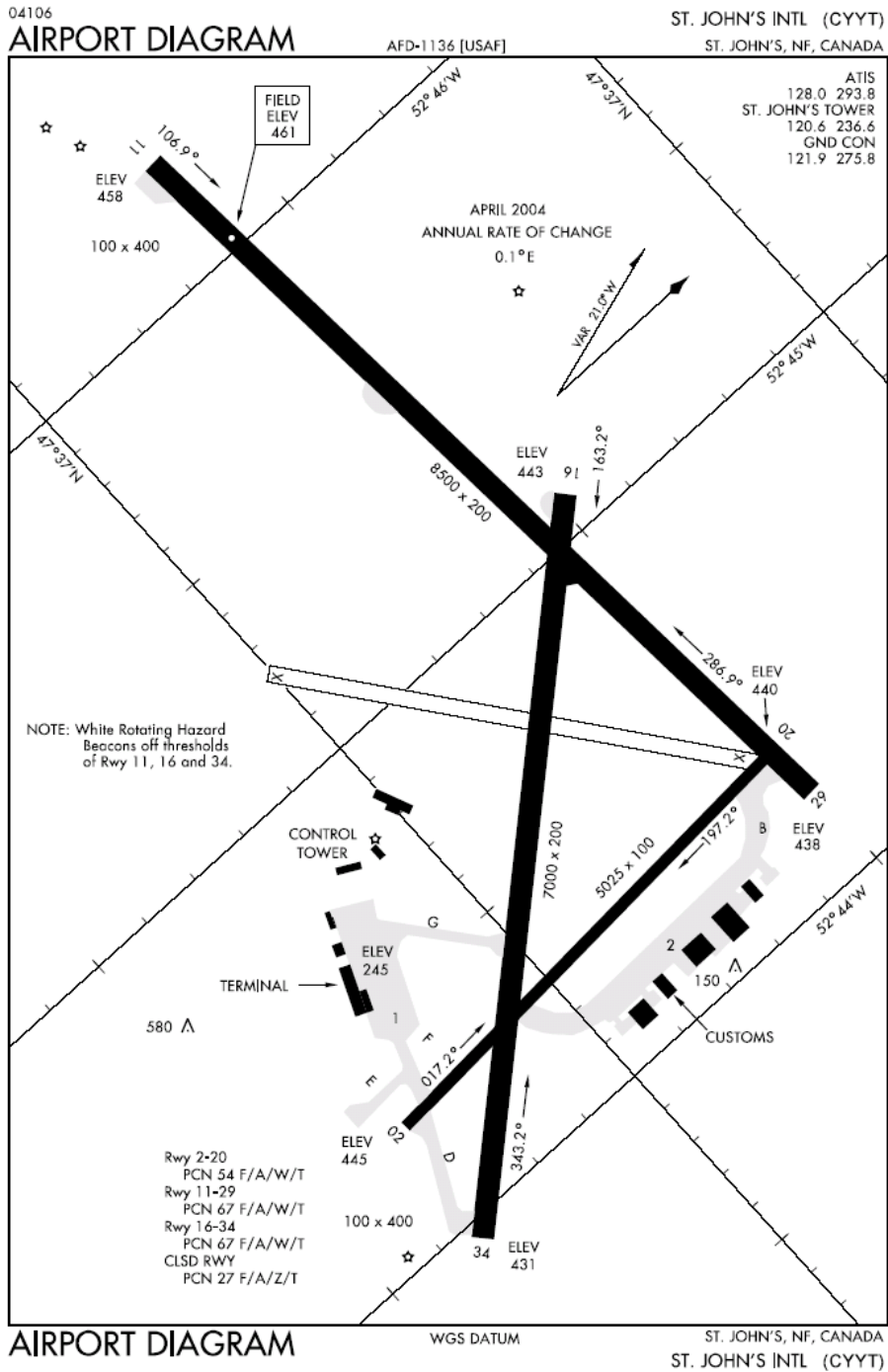
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ST. JOHN'S AIRPORT DIAGRAM

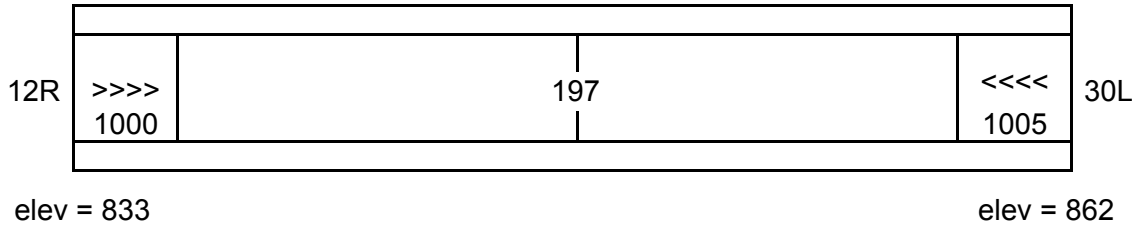


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ST. JOHN'S RWYS YYT 11 AND YYT 29



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TACAN: ZZA-64x (Pri) ZAR-77x (Sec-DME)
I/F above: N: clear E: clear N: << 80k E: << 80k
 S: clear W: clear S: << 80k W: << 80k

MLS: (30L-Sr)* ch 6
PAPI: 30L*
Ball Bar: 30L*
UHF: yes

RWY 30L

<u>WARNING</u>
Do not line up on 30R - it may be seen first in reduced visibility
PAPIs are offset 170 ft to right of centerline at standard distance to threshold
Dip in rwy approx 4000 ft from threshold shows up dark in night TAL but is illuminated
Rwy slopes down slightly. Rollout end approx 30 ft lower than approach end

NOTE

Prominent triangular field adjacent to and left of PAPIs. Apex points to rwy 30L

RWY 12R

<u>CAUTION</u>
Do not fly high on IGS to avoid VOR bldg on final
No visual landing aids

*Available only for ascent

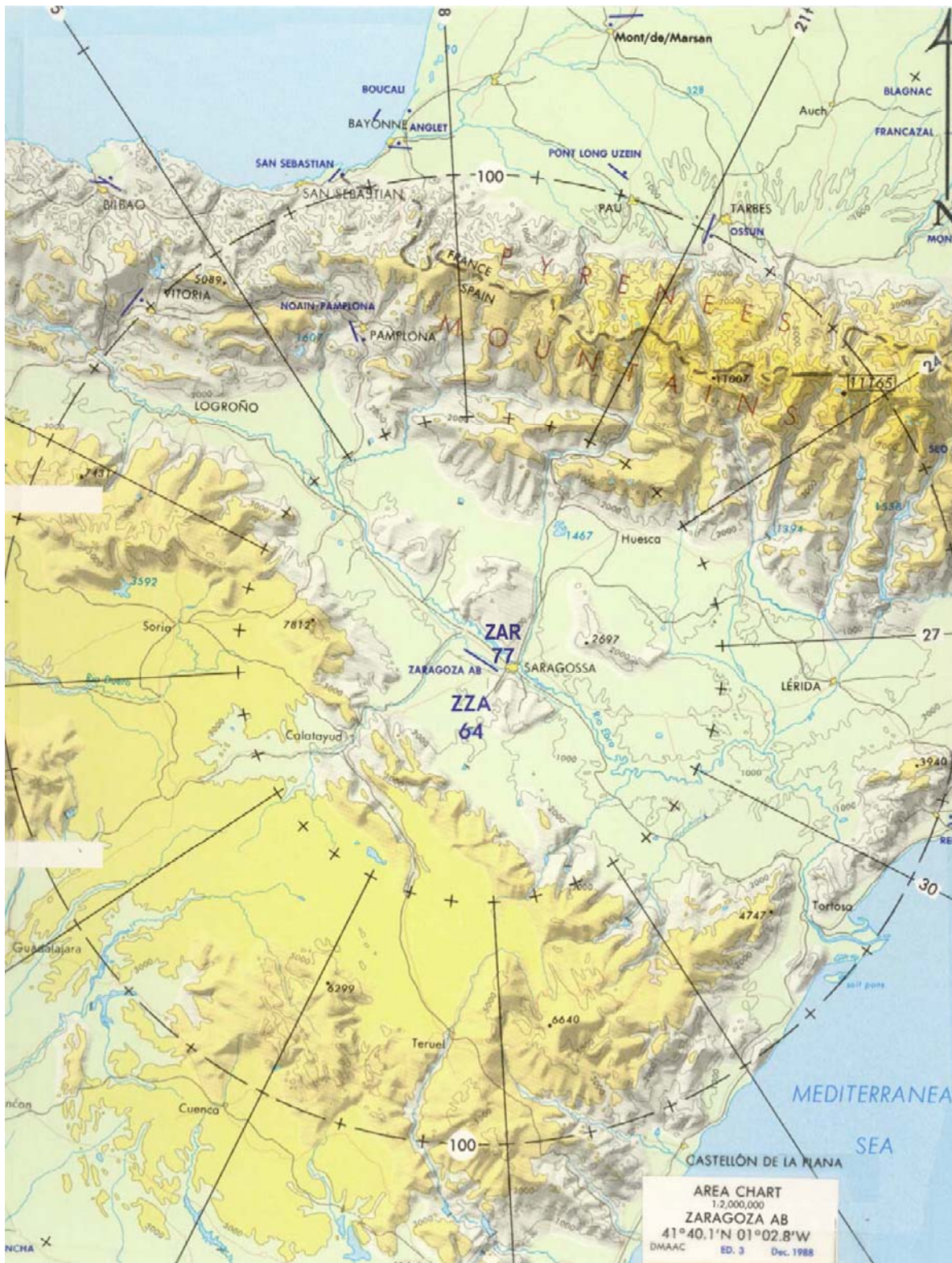
ZARAGOZA
ZZA

ZARAGOZA
ZZA

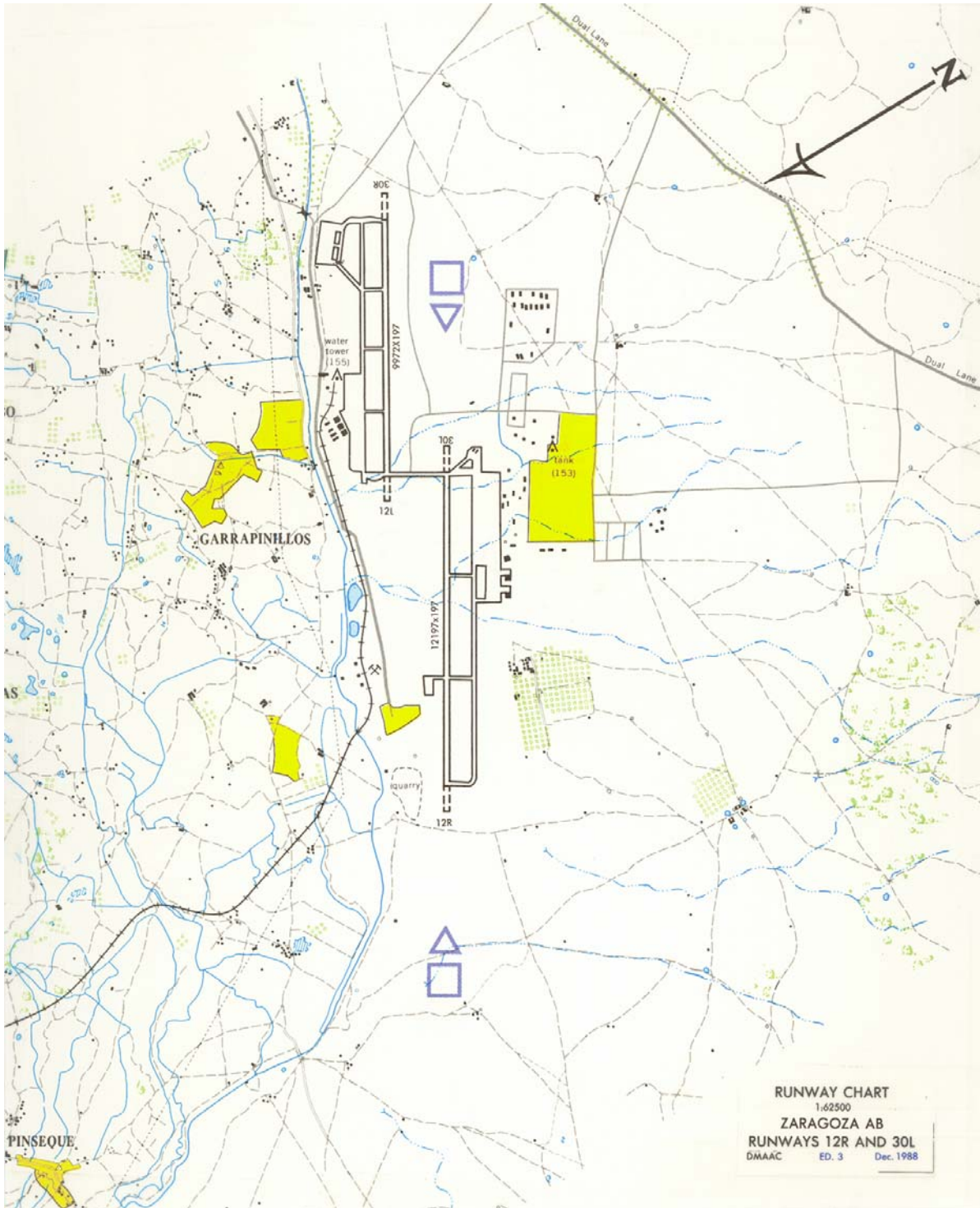
ZARAGOZA
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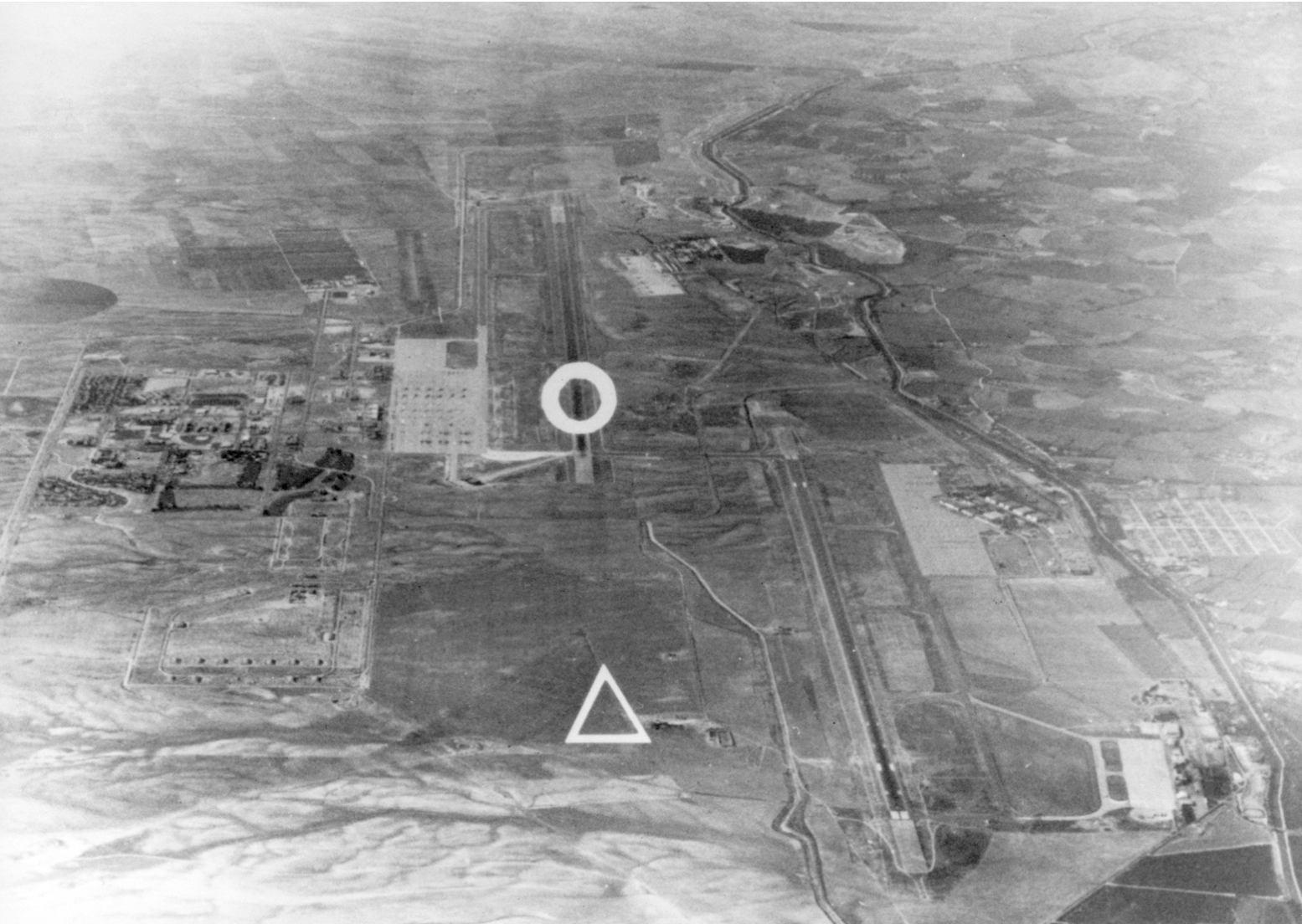
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ZARAGOZA RWY ZZA 12R



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ZARAGOZA RWY ZZA 30L
View 1

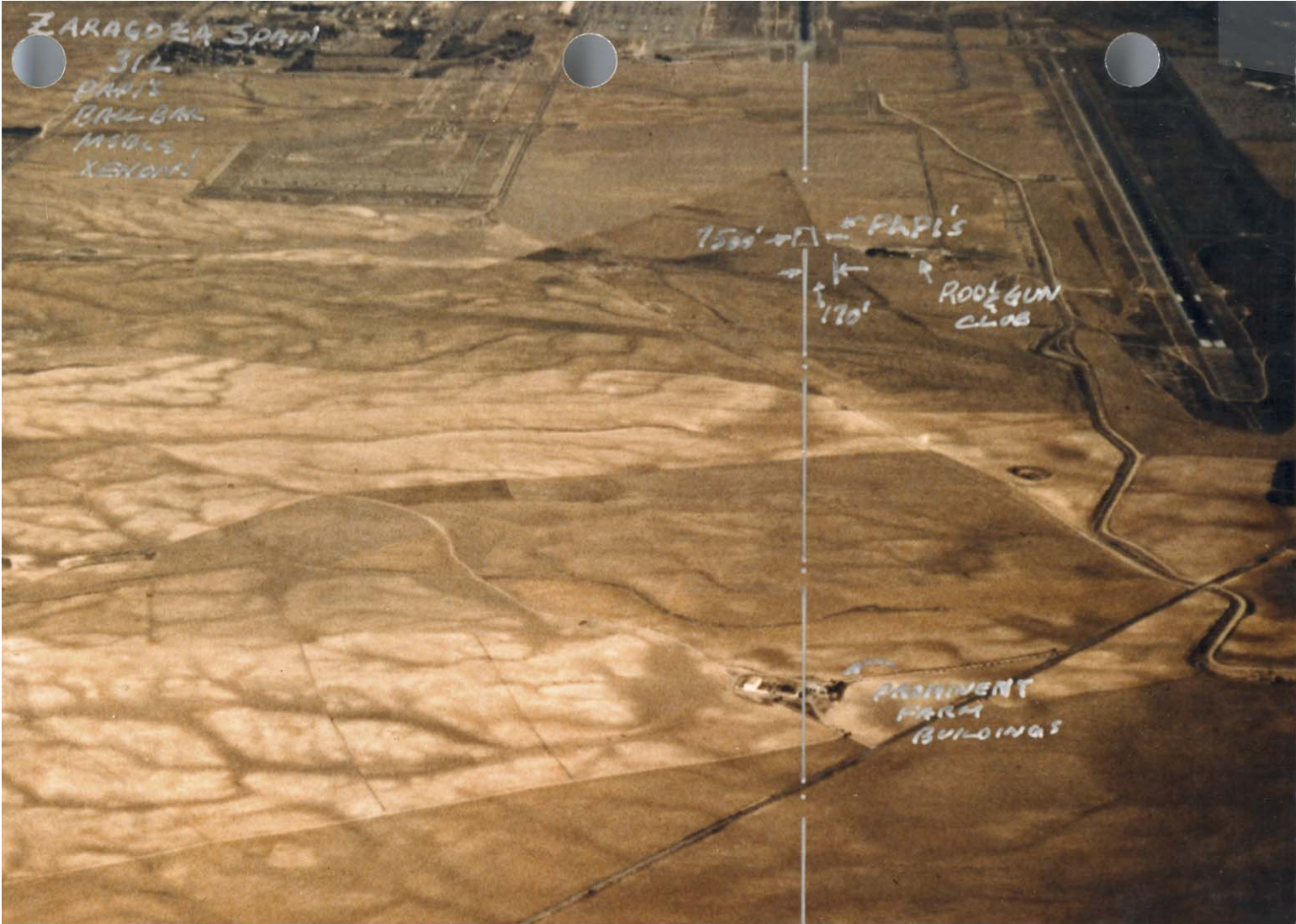


ZZA-C

EDITION 1-6/89
MAPS/ALL/GEN G

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ZARAGOZA RWY ZZA 30L
View 2



ZZA-E

EDITION 1-6/89
MAPS/ALL/GEN G

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POSTLANDING PROCEDURES
FOR EMERGENCY AIRFIELD
LANDING

POST ELS
PROCEDURES

POST ELS
PROCEDURES

POST ELS
PROCEDURES

POST ELS
PROCEDURES

POST ELS
PROCEDURES

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1. OVERSEAS AUGMENTED LANDING SITES

Augmented Landing Sites are those with landing aids and NASA personnel in place during missions. These include prime and backup TAL sites.

- a. GOM or convoy ops rep will advise the crew on UHF 259.7. Be prepared to evacuate to a distance of 1250 ft. The crew is expected to open the hatch.
- b. The Commander will turn over responsibility for the orbiter to the GOM.
- c. The flight crew will brief the GOM on orbiter status.
- d. Approximately 90 minutes after landing, an MRT teleconference will be held to report the condition of the orbiter. Arrangements will then be made for the crew to speak with their families.
- e. All media requests for the crew will be coordinated through FCOD.
- f. The DOD will be responsible for initial treatment and transport of injured crewmembers. Uninjured crewmembers may be transported to Rota, Spain to wait for the arrival of the JSC crew return aircraft. The local FCOD rep may go with the flight crew.
- g. The JSC crew return aircraft will arrive approximately 16 hr after landing to transport the crew to Houston. The FCOD representative will carry flight crew passports.
- h. Personnel on the crew return aircraft will include, but are not limited to:
 - JSC FCOD Director and/or his representative(s)
 - JSC Flight Surgeon
 - JSC PAO representative
 - KSC security representative
- i. The KSC GOM may advise the commander that the flight crew or TALCOM can approach the orbiter. The flight crew may then enter the orbiter and retrieve clean clothes and other needed articles. The flight crew should also retrieve return-to-Houston items at this time.
- j. NASA personnel should aid the flight crew in retrieving early return items to be transported with the flight crew.
- k. The flight crew will brief the Rapid Response Team and Mishap Investigation Team via telecon from either the landing site or evacuation site.
- l. After the crew departs, the GOM assumes responsibility for the orbiter. The side hatch will be closed as soon as possible.
- m. For further information, see the Emergency Landing Site guidelines.

2. BASES WITH U.S. MILITARY PRESENCE AND NO NASA PERSONNEL

These guidelines are only deltas to instructions for Emergency Landing Sites. Please refer to them for full instructions.

- a. Evacuate the orbiter and turn it over to the U.S. senior military official who will be responsible for the orbiter until arrival of the Rapid Response Team. The Commander will designate a crewmember to assist the DOD senior official in safing and safeguarding the orbiter until crew departure.
- b. The flight crew will be escorted to a facility to contact MCC. There will be a teleconference approximately 90 minutes after landing.
- c. The flight crew will be escorted to appropriate facilities to await arrival of the Crew Recovery Team. Meals should be available.
- d. The U.S. military will assume responsibility for treatment of injured flight crewmembers.
- e. All media requests for the crew will be coordinated through FCOD.
- f. DOD has trained the emergency and rescue forces providing them with a functional knowledge of contingency response force procedures and orbiter hazards and precautions.
- g. The JSC crew return aircraft will be dispatched to pick up the flight crew. Estimated arrival time is 16 hr.

3. EMERGENCY LANDING SITES

The following are guidelines for landings at sites without NASA augmentation or U.S. military presence.

- a. MCC should have communications with the tower. If not, contact the tower on UHF guard 243.0. Nonmilitary sites may have only VHF capability; contact on PRC-112 on VHF guard 121.5 after landing.
- b. Evacuate to a distance of 1250 ft (with visor down and locked, and emergency oxygen bottle activated). Beware of toxic fumes and burning tires. Notify the tower that only firefighting personnel should approach the orbiter.
- c. A DOD MEDEVAC aircraft and medical team will be dispatched to the landing site as soon as possible. The crew return aircraft may be first to arrive.
- d. The Commander will retain responsibility for the flight crew and orbiter until relieved by competent NASA, DOD, or State Department officials.
- e. The Commander will meet with local airfield officials and give them prepared onboard orbiter emergency guidelines (see U.S. EMBASSY, p. 4-7). The commander will briefly advise them on vehicle hazards and safety requirements and inform them that towing should not be attempted. A U.S. embassy representative will arrive at the airfield as soon as possible to assist local officials.
- f. The Commander will arrange with local officials to provide 24-hr security for the flight crew and orbiter. If a U.S. facility is nearby, these security forces would include at least one U.S. Government representative. The controlled access area should be a 1250-ft radius around the orbiter with a single entry point. The Commander will designate a crewmember to remain with the orbiter until a U.S. Government representative arrives.
- g. The Commander should designate a crewmember to maintain a log. The Commander should note local landing time and any pertinent observations of the orbiter and sequence of events leading up to the landing.
- h. The flight crew will establish communications with MCC CAPCOM as soon as possible. Phone numbers are listed on page 4-9.
- i. All media requests for the crew will be coordinated through FCOD.
- j. If there is a local U.S. facility, the flight crew may be escorted there to await transportation to the nearest U.S. military base.
- k. The Rapid Response Team will arrive in ~ 25 hr depending upon location and mission phase. On-orbit response may take longer. Personnel will include, but are not limited to:

KSC Rapid Response Team Commander
KSC GOM/Vehicle Manager
KSC Tow Team
KSC Logistics Team
JSC FCOD representative
Mishap Investigation Team
Payload representative
DDMS representative
KSC Security Team

- l. The JSC crew return aircraft will be deployed to pick up the flight crew at their evacuation location. Estimated time of arrival is landing plus 16 hr. Flight crew passports will be carried onboard by the FCOD representative.
- m. The flight crew will brief the Rapid Response Team and Mishap Investigation Team via telecon as reqd from the landing site and evacuation site, as needed.
- n. The flight crew shall brief an FCOD or Rapid Response Team representative on locations of early return items to be removed from the orbiter for return to JSC if they are unable to retrieve them before evacuation.

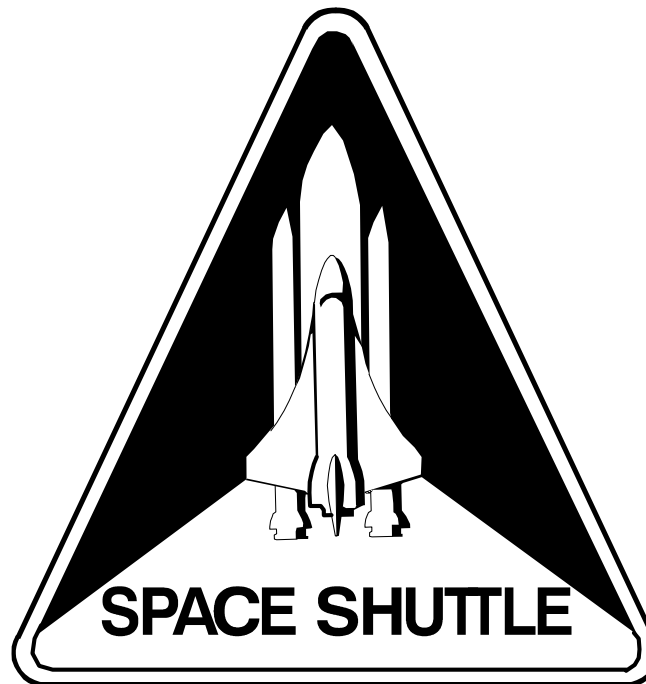
4. GUIDELINES FOR U.S. EMBASSY AND LOCAL AIRFIELD OFFICIALS

- a. When medical attention is required for the flight crew, a U.S. Government representative should remain in contact with the injured crewmember(s), if possible. NASA will arrange with DOD to evacuate both injured and uninjured personnel to the nearest U.S. military base.
- b. The flight crew will be retrieved by the JSC crew return aircraft from their evacuation location.
- c. Due to the nature of hazards present, no one should approach within 1250 ft (400 m) of the orbiter. The vehicle is considered hazardous until declared safe by appropriate safety personnel.
- d. Contact the MCC, NASA, JSC, Houston, Texas, USA. Phone numbers are listed on page 4-9. Dispatch a U.S. Government representative, if available, to the landing site.
- e. Provide interpreters if needed and available.
- f. Provide escorts, transportation, lodging, and meals as necessary for the flight crew until they are evacuated.
- g. The NASA Rapid Response Team will arrive in approximately 25 hr, depending upon landing location. Personnel will include NASA management, orbiter tow team, security, Mishap Investigation Team, DOD and an Astronaut Office representative.
- h. The flight crew will not meet with media representatives. A flight crew statement will be released from JSC PAO.
- i. Contract a photographer to be escorted to safe areas to take photos of the orbiter, any debris, and anything else that appears out of the ordinary (e.g., fire, smoke, fumes). The exposed film will be purchased by NASA and should not be developed.
- j. If any damage occurs to the orbiter, debris should be left in its place with documentary photographs and location descriptions taken. To preclude injury or disturbance of the scene, debris should not be handled. Avoid debris having a fishy/ammonia, pungent/sweetish, or ammonia-like smell. Seek immediate medical attention for irritation to the nose, throat, or eyes, or coughing and difficulty breathing. The area should be secured to a 1250-ft radius to prevent sightseers from disturbing the scene or picking anything up.
- k. Record any pertinent observations with time indices.
- l. Arrange to have witnesses contacted. Obtain their names, addresses, and telephone numbers.
- m. The orbiter should not be towed without Mishap Investigation Team approval. The orbiter cannot be safely moved without special equipment, therefore towing is discouraged. Contact NASA KSC for further information if the airfield officials insist.

- n. The flight crew commander is responsible for the orbiter and flight crew. It will be necessary for him or her to stay in contact with NASA Mission Control Center in Houston, Texas. Please assist the commander in any way possible.

SENSITIVE
INFORMATION

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**FLIGHT MAPS
AND CHARTS**

**STS
ALL**