AF FORM 112
APPROVED 1 JUNE [illegible]

[redacted]
(CLASSIFICATION)

2

COUNTRY	REPORT NO.	(LEAVE BLANK)
U S A	IR - 1 - 53	AF4 81 980

AIR INTELLIGENCE INFORMATION REPORT

SUBJECT

Unidentified Flying Object

AREA REPORTED ON	FROM (*Agency*)
Four (4) Miles North Eau Gallie, Florida	6541 Missile Test Wing, Intelligence (MTFPW)

DATE OF REPORT	DATE OF INFORMATION	EVALUATION
9 January 1953	5 January 1953	C-2

PREPARED BY (*Officer*)	SOURCE
Captain Allen K. Debnam, Wing Intelligence Off.	Civilian Employee (Base Photo Lab) PAFB

REFERENCES (*Control number, directive, previous report, etc., as applicable*)

SUMMARY: (*Enter concise summary of report. Give significance in final one-sentence paragraph. List inclosures at lower left. Begin text of report on AF Form 112—Part II.*)

1. This is a report on a sighting by [redacted] civilian employee of Patrick Air Force Base Photo Lab. [redacted] is believed to be a reliable person.

2. Four (4) miles north of Eau Gallie, Florida the east side of US #1, 4 Jan. 53 at approximately 1845 hours [redacted] sighted an object that resembled the designed "Davis Air Craft Wing". There was not any fuselage (as a B 49 Flying Wing might have appeared). The object was 500 feet or less in altitude flying very fast 500 Miles per hour or more. [redacted] saw the object for 2 or 3 seconds. It approached from a North Northwest direction in a slight turn and departed in a South Southwest direction. There was not any sound. The light from the Neon signs on the "Westchester Motor Court" illuminated the lower surface of the object. [redacted] saw at least four (4) and not more than ten (10) blue lights on lower surface as shown in his drawing which is inclosed. The Weather on the evening of 4 January 1953 was cold, clear and little or no wind. [redacted] was within 250 to 350 feet of the spot where the object appeared to be passing over. No one saw this object to the best of my knowledge but [redacted]

COMMENTS:

Subject is cleared up to and including SECRET.

Subject worked with the FBI in Puerto Rico. Had dealings with a Mr. Shlanker, then director of the FBI, and Mr. Alan Gillies. Subject knew the latter over two years.

Subject does not drink.

Allen K. Debnam

ALLEN K. DEBNAM
Captain, USAF
Wing Intelligence Officer

3 INCLS.
1 copy of [redacted] Personal Statement

1 copy Orlando Sectional Aeronautical Chart with Plottings

1 ~~Plottings and~~ Sketch of Object

USAF MEMO 7/31/74
W. Lewis 9/13/74
AKG
FBI review Oct 11, 1978

DISTRIBUTION BY ORIGINATOR

NOTE: THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT, 50 U. S. C.—31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. IT MAY NOT BE REPRODUCED IN WHOLE OR IN PART, BY OTHER THAN UNITED STATES AIR FORCE AGENCIES, EXCEPT BY PERMISSION OF THE DIRECTOR OF INTELLIGENCE, USAF.

[redacted]
(CLASSIFICATION)

16—55569-2 U. S. GOVERNMENT PRINTING OFFICE

Declassification Authority: NND 57565

MTFPW Subject: The Testimony of [redacted] Regarding Unidentified Citing

QUESTION: Where was the location of your point of observation?

ANSWER: I was at that time on my own property which I was clearing for a house to be built. This property is located on the south side of Otter Creek on Otter Point. Otter Point is almost four miles north of Eau Gallie, Florida. This property is on US Highway 1, east side and west bank of the Indian River.

QUESTION: What was the distance, direction, and altitude of the craft?

ANSWER: I had walked to my car and was facing approximately south. I glanced to the right and upward. This unidentified object came into my line of view over my right shoulder. It appeared to be lower than 500 feet, and the bottom outline was reflected in the neon lights of the Westchester Motor Court which lies directly west of the position described, about 250 to 350 feet away. I estimated the speed to be 500 miles an hour or excess.

QUESTION: What was the condition of the evening?

ANSWER: This was the evening of 4 January 1953. The atmospheric condition was exceptionally clear. It was quite cold, the temperature being about 50° F. There was little or no wind; in fact, it was calm.

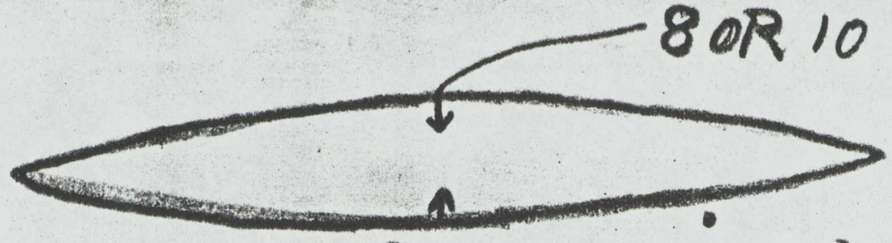
QUESTION: Would you please state what background and knowledge you have with regard to aircraft.

ANSWER: I have, over the past six years, done a great deal of travel by airplane. In fact, while living in Puerto Rico it was my main mode of transportation. I have flown at the rate of 20,000 to 30,000 miles a year. Too, I have been on Patrick over one and one-half years during which time I have observed the movement of aircraft to and from the Base. I have also been at Eglin Air Force Base where I observed B-36's daily. I do not fly any type of aircraft myself.

"I certify that to the best of my knowledge, the above is true and correct."

[redacted]

Declassification Authority: NND 57565





Encl # 3 of 4 81

[redacted]

ce Back.

Declassification Authority: NND 57565

HEADQUARTERS
6541ST MISSILE TEST WING
PATRICK AIR FORCE BASE
FLORIDA

MTFPW 9 January 1953

SUBJECT: The Testimony of [redacted] Regarding Unidentified Citing:

QUESTION: [redacted] would you please briefly describe the object with regard to its shape, size, and color.

ANSWER: The object was diamond in shape, elongated from wing tip to wing tip, similar to a B-29 and no larger than a B-36. As to thickness, I would judge it from eight to eleven feet in thickness at its thickest point, tapering out to the wing tips as a conventional aircraft. The color was non-descriptive gray with no metallic sheen. There was underneath the Wing more than four but no more than ten blue, non-flickering lights. The lights glowed rather softly. There were no vapor trails. There was no sound.

QUESTION: What sort of maneuvers was this craft performing?

ANSWER: The craft came in at approximately twenty degrees to my right from directly overhead. I sighted it and followed the line of flight for approximately two to three seconds. It came in from a northwesterly direction on a long, shallow bank. At the time I saw it, it seemed to reach the apex of the bank and turn in a southwesterly direction. My line of sight was immediately cut off by the trees.

QUESTION: At approximately what time was this?

ANSWER: 1845 hours.

QUESTION: Was your place of observation "visually good"?

ANSWER: Yes.

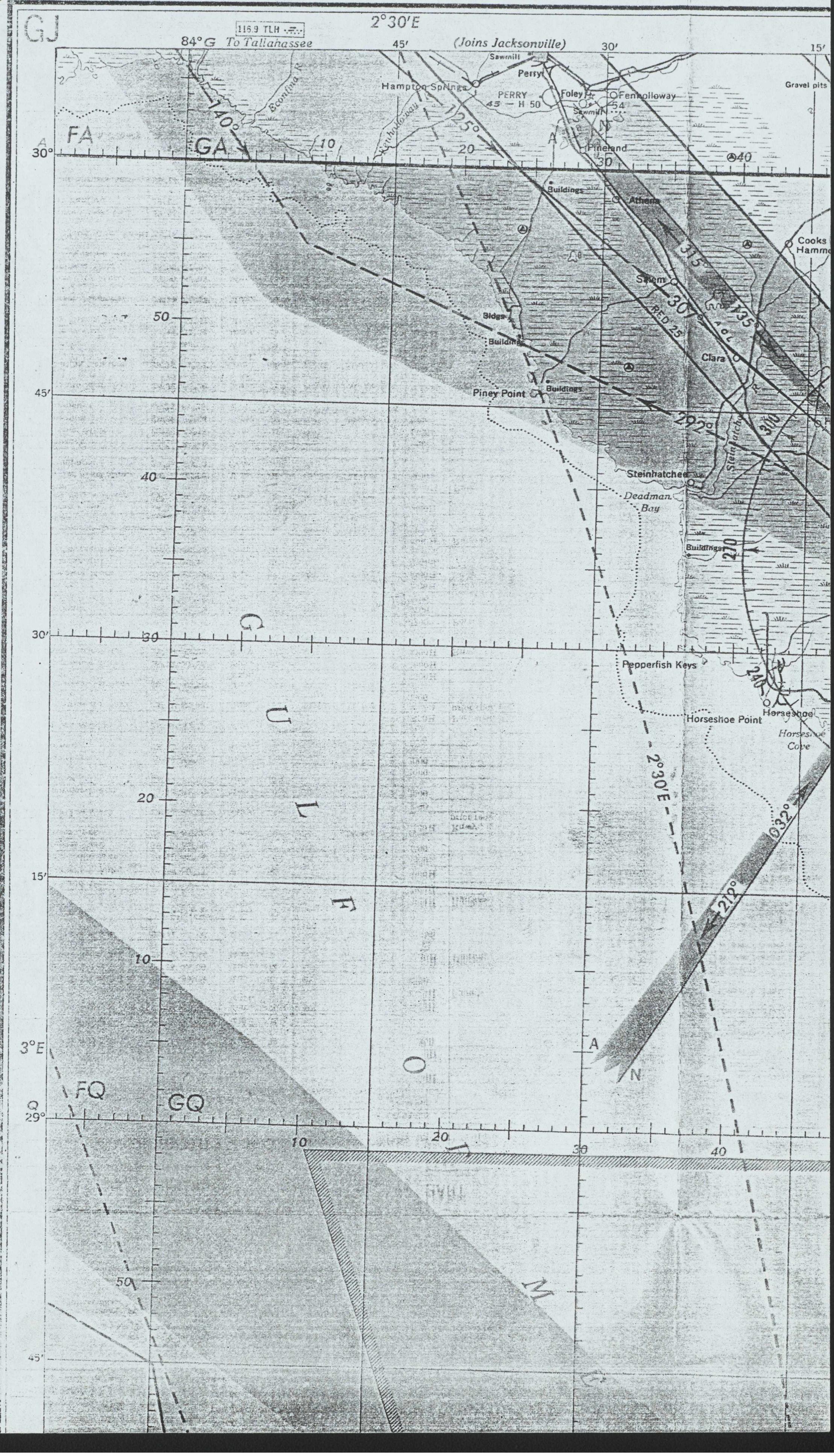
QUESTION: Were you on earth surface and was the surface stationary?

ANSWER: Yes.

Incl #1 Rf 481980

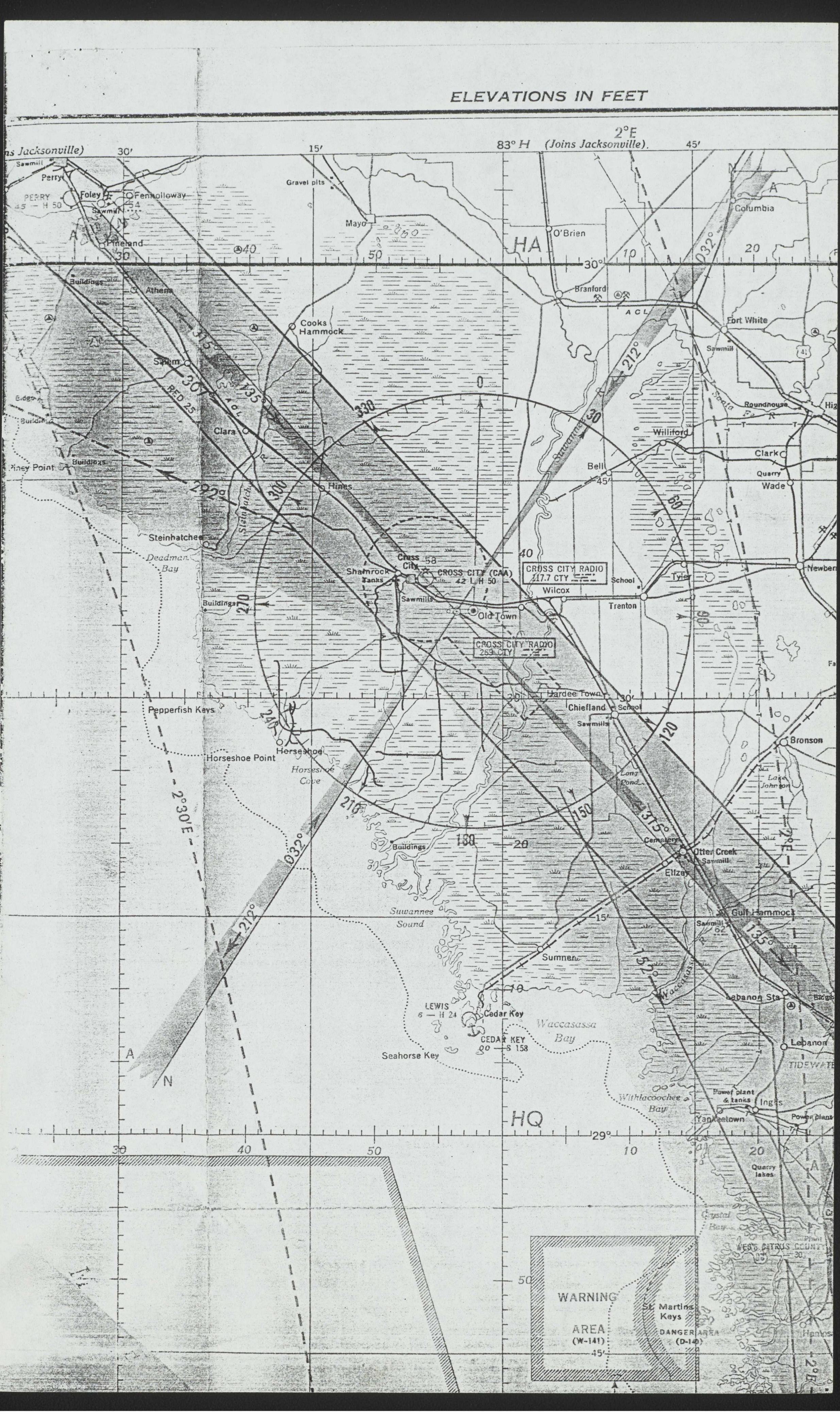
Declassification Authority: NND 57565

ORLANDO (0-8)

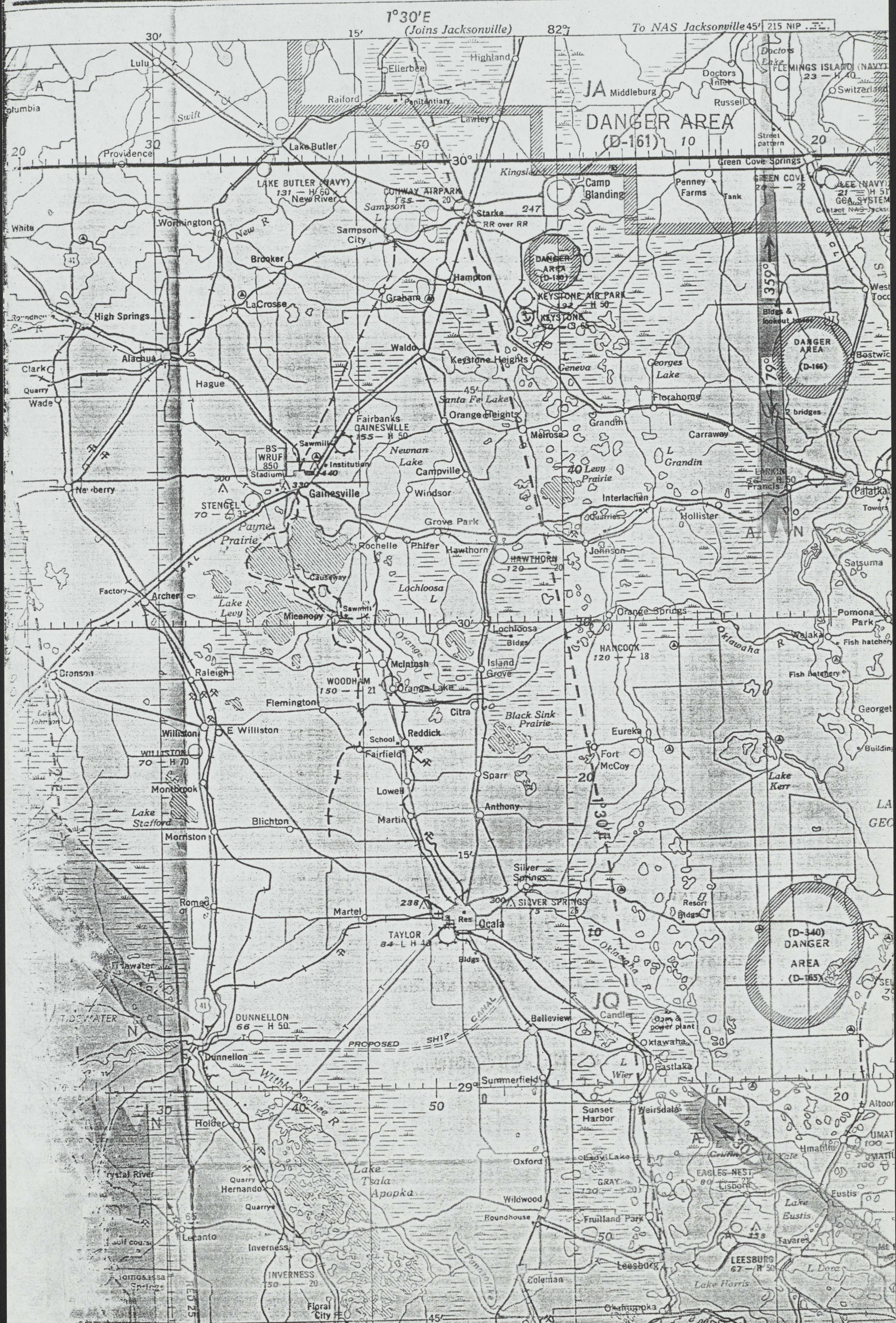


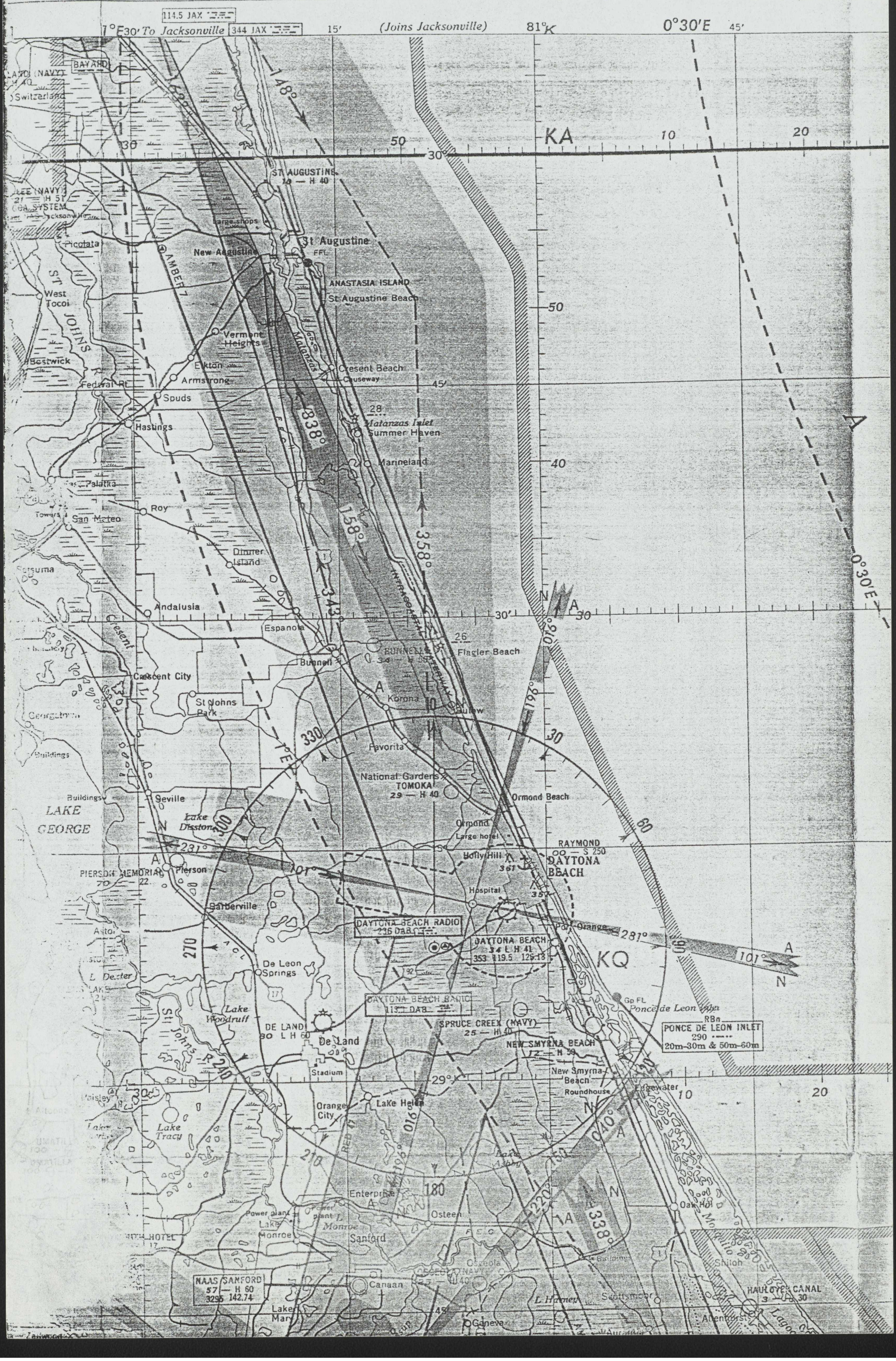
Declassification Authority: NND 57565

ELEVATIONS IN FEET



Declassification Authority: NND 57565

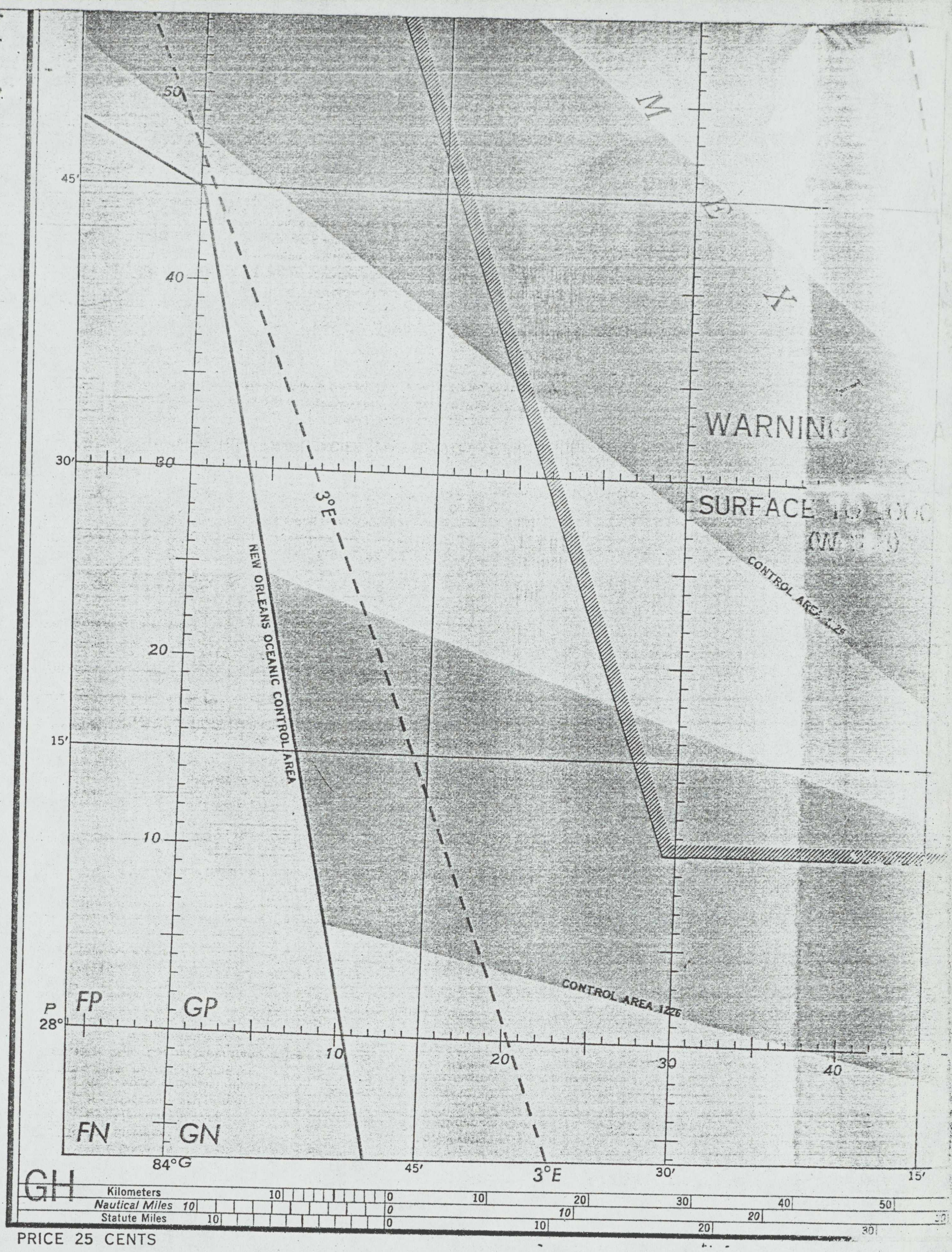

1°30'E
(Joins Jacksonville)
82°
To NAS Jacksonville
215 NIP
Doctors Lake
FLEMINGS ISLAND (NAVY)
23 — H 40
Doctors Inlet
Middleburg
Russel
Switzerland
DANGER AREA
(D-161)
Street pattern
Green Cove Springs
Penney Farms
Camp Blanding
Tank
GREEN COVE
20 — — 22
LEE (NAVY)
21 — H 51
GCA SYSTEM
Contact NAS Jackso
Lulu
Highland
Ellerbee
Raiford
Penitentiary
Lawtey
Swift
Lake Butler
Providence
LAKE BUTLER (NAVY)
131 — H 60
New River
CONWAY AIRPARK
155 — — 20
Sampson L
Starke
247
RR over RR
Worthington
New R
Sampson City
White
Brooker
Hampton
Graham
LaCrosse
High Springs
DANGER AREA (D-150)
KEYSTONE AIR PARK
192 — H 50
KEYSTONE
50 — CH 65
359°
Bldgs & lookout tower
DANGER AREA (D-166)
79°
2 bridges
Alachua
Clark
Quarry
Hague
Wade
Waldo
Keystone Heights
L Geneva
Georges Lake
Florahome
Santa Fe Lake
Orange Heights
Fairbanks
GAINESVILLE
155 — H 50
Sawmill
BS
WRUF
850
Stadium
Institution
Newnan Lake
Campville
Melrose
Grandin
Carraway
L Grandin
40 Levy Prairie
Newberry
Gainesville
Windsor
STENGEL
70 — 35
Interlachen
Quarries
Hollister
LARKIN
50 — H 50
Francis
Palatka
Towers
Grove Park
Payne Prairie
Rochelle
Phifer
Hawthorn
HAWTHORN
120 — 20
Johnson
Satsuma
Causeway
Factory
Archer
Lake Levy
Micanopy
Sawmill
Lochloosa L
Orange Springs
Pomona Park
Lochloosa
Bldgs
HANCOCK
120 — 18
Klawaha R
Welaka
Fish hatchery
Island Grove
McIntosh
Orange
WOODHAM
150 — H 21
Orange Lake
Raleigh
Bronson
Fish hatchery
Flemington
Citra
Black Sink Prairie
Georget
Lake Johnson
Williston
E Williston
School
Reddick
Eureka
Building
WILLISTON
70 — H 70
Fairfield
Fort McCoy
Sparr
Lake Kerr
Montbrook
Lowell
Anthony
Martin
Lake Stafford
Blichton
Mornston
Silver Springs
Romeo
Martel
SILVER SPRINGS
300 — 25
Resort Bldgs
Ocala
Res
TAYLOR
84 — L H 18
Bldgs
(D-340)
DANGER
AREA
(D-165)
Oklawaha R
Tidewater
DUNNELLON
66 — H 50
CANAL
PROPOSED SHIP
Balleview
Candler
Dam & power plant
Oklawaha
Eastlake
L Wier
Dunnellon
Withlacoochee R
Summerfield
Sunset Harbor
Weirsdale
Holder
Oxford
Lake Tsala Apopka
Wildwood
Roundhouse
Fruitland Park
EAGLES NEST
80 — 25
Lisbon
Eustis
Lake Eustis
Crystal River
Quarry
Hernando
Quarry
Lecanto
Inverness
Golf course
Tomosassa Springs
INVERNESS
150 — — 20
Floral City
L Panasoffkee
Coleman
Leesburg
LEESBURG
67 — H 50
Tavares
L Dora
Lake Harris
Okahumpka
Sumterville
Zellwood
Umatilla
Lake Kale
Altoona
Declassification Authority: NND 57565


114.5 JAX
344 JAX
81°K
0°30'E
(Joins Jacksonville)
To Jacksonville
BAYARD
Switzerland
ST AUGUSTINE
St Augustine
ANASTASIA ISLAND
St Augustine Beach
New Augustine
Picolata
West Tocoi
Vermont Heights
Elkton
Armstrong
Federal Pt
Spuds
Hastings
Crescent Beach
Causeway
Matanzas Inlet
Summer Haven
Marineland
Palatka
Roy
San Mateo
Dinner Island
Satsuma
Andalusia
Espanola
Bunnell
Flagler Beach
Crescent City
St Johns Park
Korona
Gulow
Favorita
National Gardens
TOMOKA
29 — H 40
Ormond Beach
Ormond
Large hotel
Holly Hill
RAYMOND
00 — S 250
DAYTONA BEACH
Hospital
Seville
Lake Dias ton
Pierson
Barberville
DAYTONA BEACH RADIO
236 DAB
DAYTONA BEACH
34 L H 41
353 119.5 126.18
Port Orange
De Leon Springs
Lake Woodruff
DE LAND
80 L H 60
De Land
Stadium
SPRUCE CREEK (NAVY)
25 — H 40
NEW SMYRNA BEACH
12 — H 50
New Smyrna Beach
Roundhouse
Edgewater
Ponce de Leon Inlet
PONCE DE LEON INLET
290
20m-30m & 50m-60m
Orange City
Lake Helen
Lake Tracy
Enterprise
Osteen
Power plant
Lake Monroe
Sanford
NAAS SANFORD
57 — H 60
3295 142.74
Canaan
Osceola
Geneva
L Harney
Scottsmoor
Shiloh
HAULOVER CANAL
Allenhurst
Lagoon
LAKE GEORGE
PIERSON MEMORIAL
70 — 22
L Dexter
Lake Disston
Lake Tracy
Lake Monroe
Lake Harney
Indian River
Mosquito Lagoon
Ponce de Leon Inlet
Oak Hill
Shiloh
Scottsmoor
Allenhurst
Edgewater
New Smyrna Beach
Ormond Beach
Daytona Beach
Port Orange
Flagler Beach
Bunnell
Crescent City
Palatka
Roy
Seville
Sanford
Osteen
Enterprise
Lake Helen
Orange City
De Land
De Leon Springs
Andalusia
Dinner Island
Vermont Heights
Elkton
Armstrong
Federal Pt
Spuds
Hastings
Picolata
New Augustine
West Tocoi
Bostwick
St Johns Park
Korona
Gulow
Favorita
Espanola
Summer Haven
Marineland
Crescent Beach
Causeway
Matanzas Inlet
St Augustine Beach
ANASTASIA ISLAND
St Augustine
ST AUGUSTINE
19 — H 40
large shops
LEE (NAVY)
21 — H 51
GCA SYSTEM
Jacksonville
Switzerland
BAYARD
LAKE (NAVY)
HAQ
Buildings
Georgetown
Satsuma
Towers
Barberville
Astor
Orange
Pierson

ORLANDO (0-8)

Lambert Conformal Conic Projection Standard Parallels 33° and 45° Scale 1:500,000

Declassification Authority: NND 57565



PRICE 25 CENTS

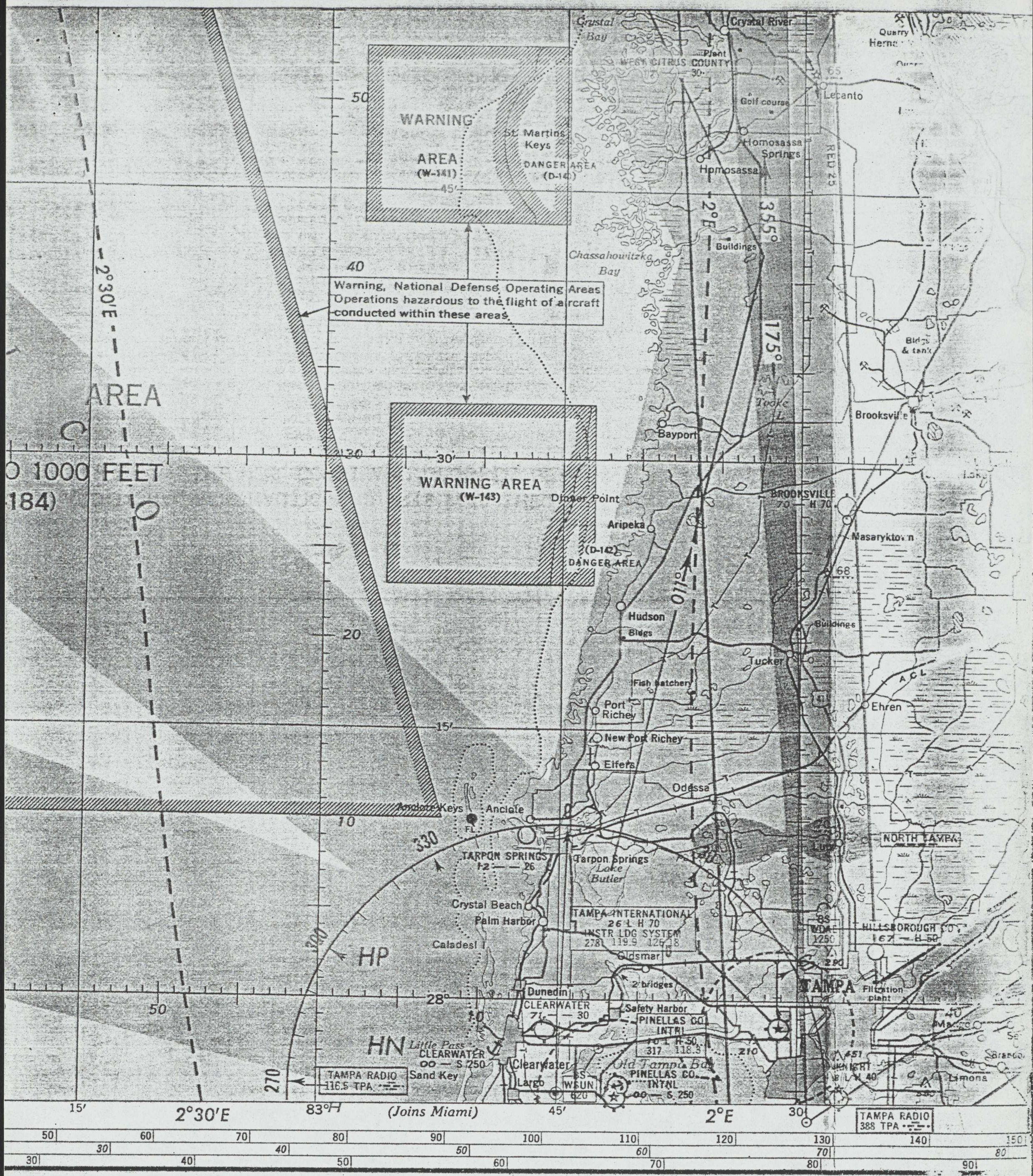
ORLANDO (O-8)

COMPILED AND PRINTED AT WASHINGTON, D. C.
BY THE U. S. COAST AND GEODETIC SURVEY
UNDER AUTHORITY OF THE SECRETARY OF COMMERCE

Principal Sources: U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Air Force, U.S. Dept. of Agriculture, Civil Aeronautics Administration, and the U.S. Coast and Geodetic Survey.

BASE: Edition of July 1949 Revised June 1951

Declassification Authority: NND 57565



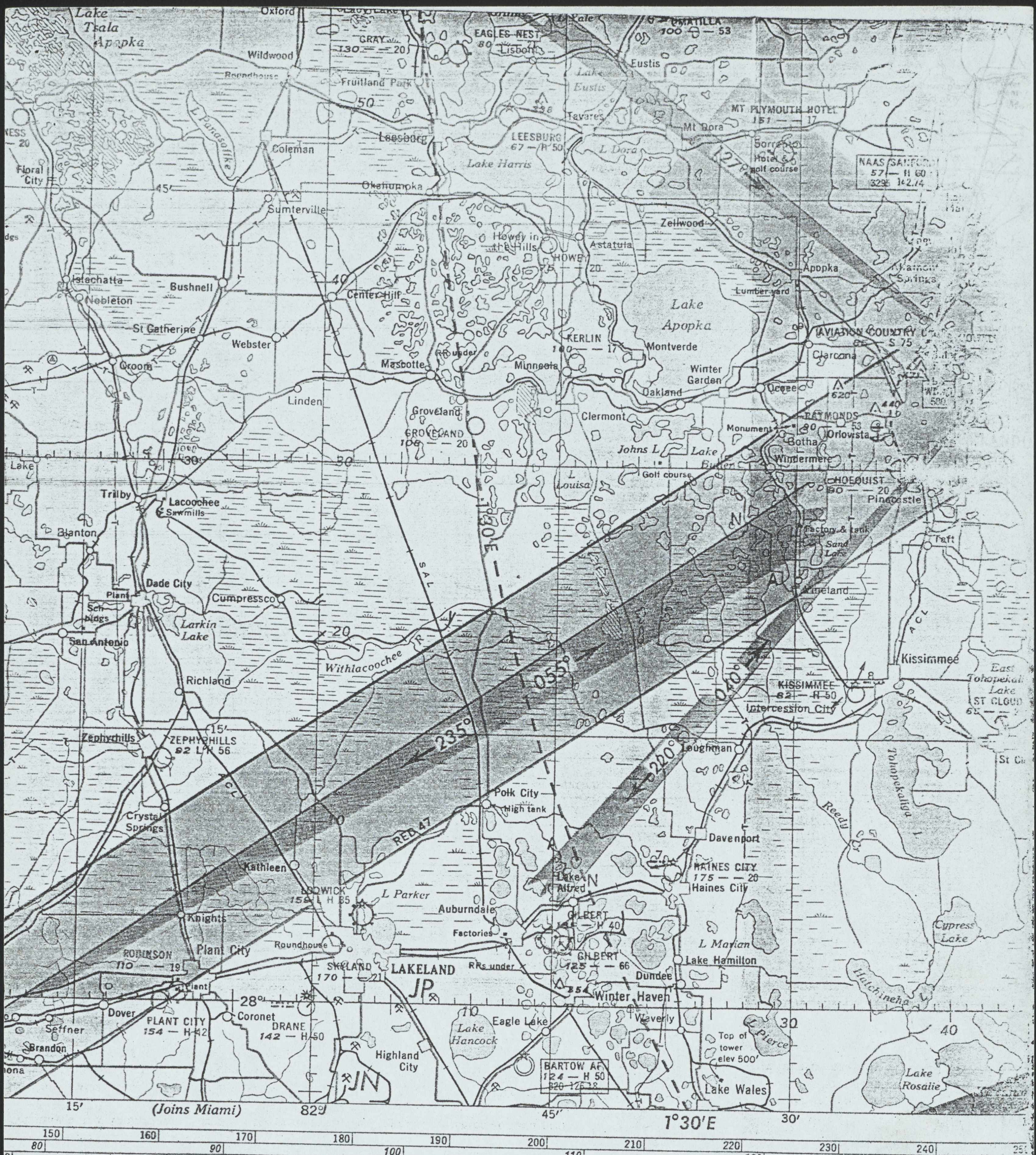
NOTE: It is requested that users of this chart indicate corrections and additions which come to their attention and notify "THE DIRECTOR, U. S. COAST AND GEODETIC SURVEY, WASHINGTON 25, D. C."

TO REFERENCE BY THE GEOREF (SHOWN IN BLUE) TO MINUTES
(Select nearest intersection south and west of point)

Sample Point: HUDSON

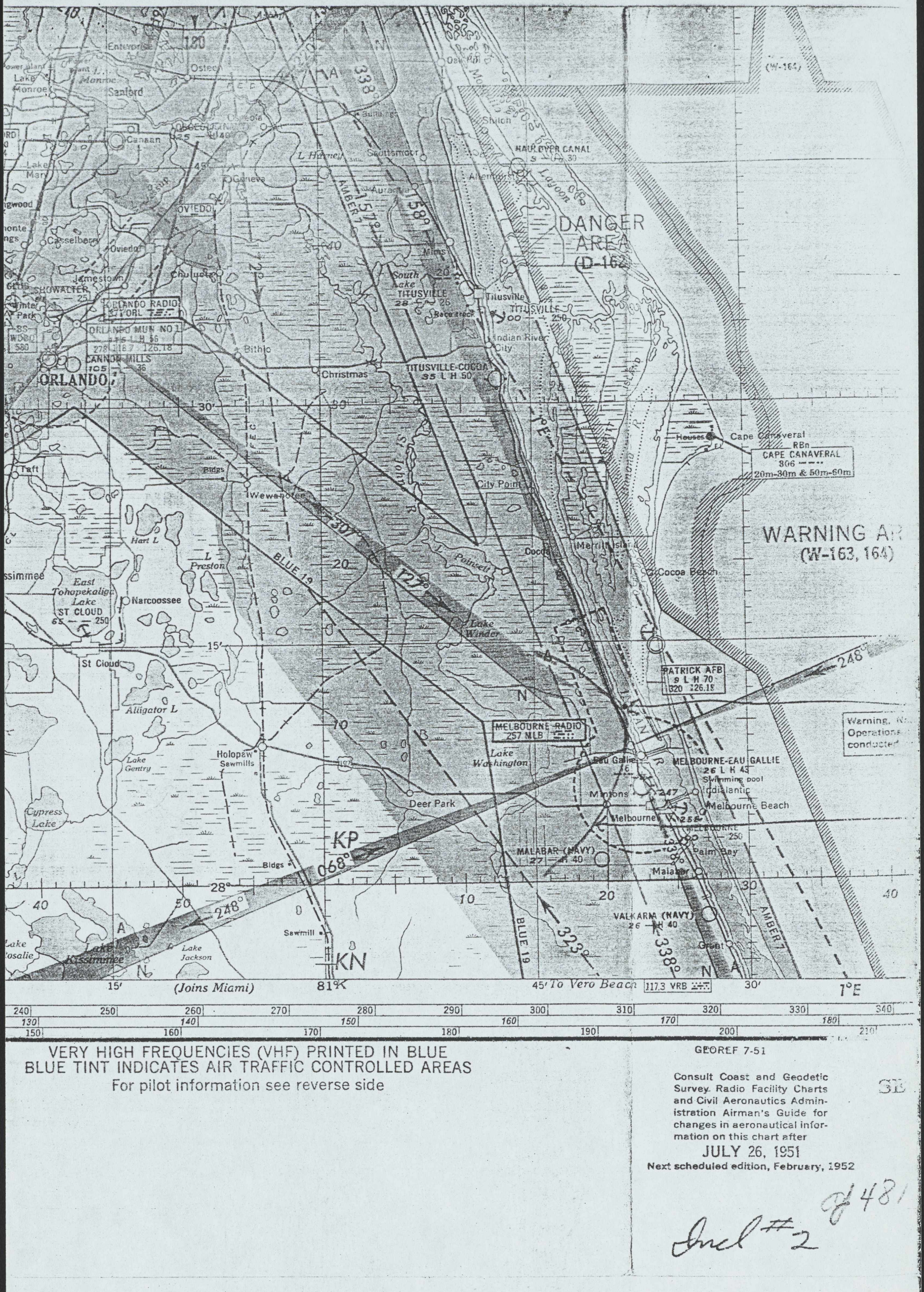
1. GH identifies basic 15° quadrangle
2. HP identifies 1° quadrangle
3. 18 identifies Georef minute of longitude
4. 21 identifies Georef minute of latitude
5. Sample reference: GHHP1821

Declassification Authority: NND 57565



VERY HI
BLUE TINT

Declassification Authority: NND 57565



VERY HIGH FREQUENCIES (VHF) PRINTED IN BLUE
BLUE TINT INDICATES AIR TRAFFIC CONTROLLED AREAS
For pilot information see reverse side

GEOREF 7-51

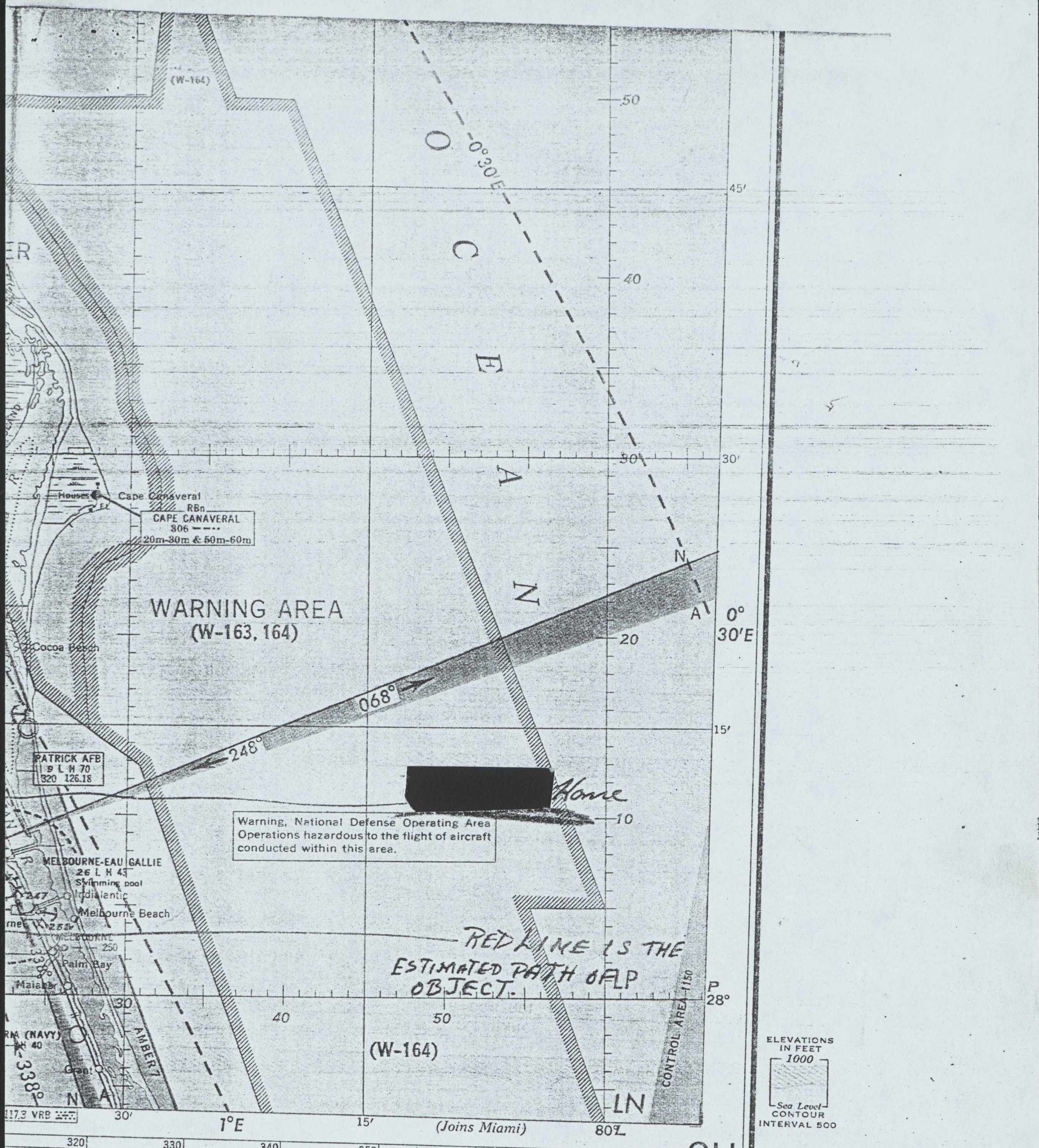
Consult Coast and Geodetic Survey Radio Facility Charts and Civil Aeronautics Administration Airman's Guide for changes in aeronautical information on this chart after

JULY 26, 1951

Next scheduled edition, February, 1952

Encl #2 B 481

Declassification Authority: NND 57565



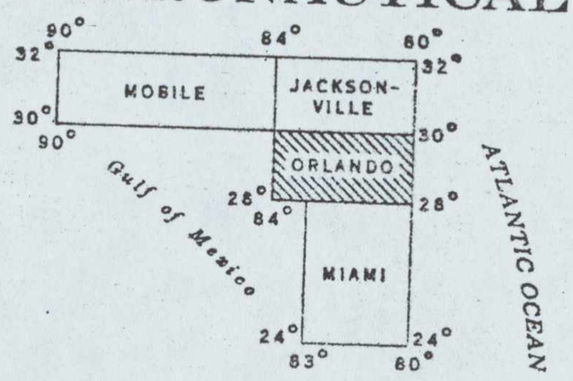
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JULY 26, 1951

Next scheduled edition, February, 1952

ORLANDO (O-8)

SECTIONAL AERONAUTICAL CHART



U.S. AIR FORCE EDITION

Declassification Authority: NND 57565

AF FORM 112
APPROVED 1 JUNE 1[illegible]

~~Restricted~~
(CLASSIFICATION)

2

COUNTRY	REPORT NO.	(LEAVE BLANK)
U S A	IR - 1 - 53	AF4 81 980

AIR INTELLIGENCE INFORMATION REPORT

SUBJECT

Unidentified Flying Object

AREA REPORTED ON	FROM (*Agency*)
Four (4) Miles North Eau Gallie, Florida	6541 Missile Test Wing, Intelligence (MTFPW)

DATE OF REPORT	DATE OF INFORMATION	EVALUATION
9 January 1953	5 January 1953	C-2

PREPARED BY (*Officer*)	SOURCE
Captain Allen K. Debnam, Wing Intelligence Off.	Civilian Employee (Base Photo Lab) PAFB

REFERENCES (*Control number, directive, previous report, etc., as applicable*)

SUMMARY: (*Enter concise summary of report. Give significance in final one-sentence paragraph. List inclosures at lower left. Begin text of report on AF Form 112—Part II.*)

1. This is a report on a sighting by Mr. V. L. Black civilian employee of Patrick Air Force Base Photo Lab. Mr. Black is believed to be a reliable person.

2. Four (4) miles north of Eau Gallie, Florida the east side of US #1, 4 Jan. 53 at approximately 1845 hours Mr. Black sighted an object that resembled the designed "Davis Air Craft Wing". There was not any fuselage (as a B 49 Flying Wing might have appeared). The object was 500 feet or less in altitude flying very fast 500 Miles per hour or more. Mr. Black saw the object for 2 or 3 seconds. It approached from a North Northwest direction in a slight turn and departed in a South Southwest direction. There was not any sound. The light from the Neon signs on the "Westchester Motor Court" illuminated the lower surface of the object. Mr. Black saw at least four (4) and not more than ten (10) blue lights on lower surface as shown in his drawing which is inclosed. The Weather on the evening of 4 January 1953 was cold, clear and little or no wind. Mr. Black was within 250 to 350 feet of the spot where the object appeared to be passing over. No one saw this object to the best of my knowledge but Mr. Black.

COMMENTS:

Subject is cleared up to and including SECRET.

Subject worked with the FBI in Puerto Rico. Had dealings with a Mr. Shlanker, then director of the FBI, and Mr. Alan Gillies. Subject knew the latter over two years.

Subject does not drink.

1R
1ea (3 incl)

Allen K. Debnam "6"

ALLEN K. DEBNAM
Captain, USAF
Wing Intelligence Officer

3 INCLS.
1 copy of Mr. Black's Personal Statement

1 copy Orlando Sectional Aeronautical Chart with Plottings

1 ~~Plottings and~~ Sketch of Object

DISTRIBUTION BY ORIGINATOR

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
USAF MEMO 7/31/78
By W. Lewis Date 9/13/78
AKG
FBI review Oct 11, 1978

NOTE: THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT, 50 U. S. C.—31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. IT MAY NOT BE REPRODUCED IN WHOLE OR IN PART, BY OTHER THAN UNITED STATES AIR FORCE AGENCIES, EXCEPT BY PERMISSION OF THE DIRECTOR OF INTELLIGENCE, USAF.

~~Restricted~~
(CLASSIFICATION)

16—55569-2 U. S. GOVERNMENT PRINTING OFFICE

Declassification Authority: NND 57565

Declassification Authority: NND 57565

(CLASSIFICATION)

AF FORM 112
APPROVED 1 JUNE

COUNTRY: U S A | REPORT NO.: IR - 1 - 53 | AFR 81 980

AIR INTELLIGENCE INFORMATION REPORT

SUBJECT: Unidentified Flying Objects

AREA REPORTED ON: Fort (4) Miles North Ben Gallie, Florida | FROM (Agency): 6543 Missile Test Wing, Intelligence (MATS)

DATE OF REPORT: 6 January 1953 | DATE OF INFORMATION: 5 January 1953 | EVALUATION: C-2

PREPARED BY (Officer): Captain Allen K. Debman, Wing Intelligence Off. | SOURCE: Civilian Employee (Base Photo Lab) PAMTB

REFERENCES (Central registry, directive, previous report, etc., as applicable):

SUMMARY: (Enter concise summary of report. Give significance in final one-sentence paragraph. List inclosures at lower left. Length not to exceed that of report on AF Form 112-Part II.)

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Subject does not drink.

ALLEN K. DEBMAN
Captain, USAF
Wing Intelligence Officer

2 Incls
1 Copy of Mr. Black's Personal Statement
1 copy Orlando Sectional Aeronautical Chart with Plottings
1 Photostat Sketch of Object

(CLASSIFICATION)

NOTE: THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18, U.S.C., SECTIONS 793 AND 794. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. IT MAY NOT BE REPRODUCED IN WHOLE OR IN PART, BY OTHER THAN UNITED STATES AIR FORCE AGENCIES, EXCEPT BY PERMISSION OF THE DIRECTOR OF INTELLIGENCE, USAF.

HEADQUARTERS
6541ST MISSILE TEST WING
PATRICK AIR FORCE BASE
FLORIDA

MTFPW 9 January 1953

SUBJECT: The Testimony of Mr. V. L. Black Regarding Unidentified Citing:

QUESTION: Mr. Black, would you please briefly describe the object with regard to its shape, size, and color.

ANSWER: The object was diamond in shape, elongated from wing tip to wing tip, similar to a B-29 and no larger than a B-36. As to thickness, I would judge it from eight to eleven feet in thickness at its thickest point, tapering out to the wing tips as a conventional aircraft. The color was non-descriptive gray with no metallic sheen. There was underneath the Wing more than four but no more than ten blue, non-flickering lights. The lights glowed rather softly. There were no vapor trails. There was no sound.

QUESTION: What sort of maneuvers was this craft performing?

ANSWER: The craft came in at approximately twenty degrees to my right from directly overhead. I sighted it and followed the line of flight for approximately two to three seconds. It came in from a northwesterly direction on a long, shallow bank. At the time I saw it, it seemed to reach the apex of the bank and turn in a southwesterly direction. My line of sight was immediately cut off by the trees.

QUESTION: At approximately what time was this?

ANSWER: 1845 hours.

QUESTION: Was your place of observation "visually good"?

ANSWER: Yes.

QUESTION: Were you on earth surface and was the surface stationary?

ANSWER: Yes.

Encl #1 Rf 4819800

Declassification Authority: NND 57565

MTFPW Subject: The Testimony of Mr. V. L. Black Regarding Unidentified Citing

QUESTION: Where was the location of your point of observation?

ANSWER: I was at that time on my own property which I was clearing for a house to be built. This property is located on the south side of Otter Creek on Otter Point. Otter Point is almost four miles north of Eau Gallie, Florida. This property is on US Highway 1, east side and west bank of the Indian River.

QUESTION: What was the distance, direction, and altitude of the craft?

ANSWER: I had walked to my car and was facing approximately south. I glanced to the right and upward. This unidentified object came into my line of view over my right shoulder. It appeared to be lower than 500 feet, and the bottom outline was reflected in the neon lights of the Westchester Motor Court which lies directly west of the position described, about 250 to 350 feet away. I estimated the speed to be 500 miles an hour or excess.

QUESTION: What was the condition of the evening?

ANSWER: This was the evening of 4 January 1953. The atmospheric condition was exceptionally clear. It was quite cold, the temperature being about 50° F. There was little or no wind; in fact, it was calm.

QUESTION: Would you please state what background and knowledge you have with regard to aircraft.

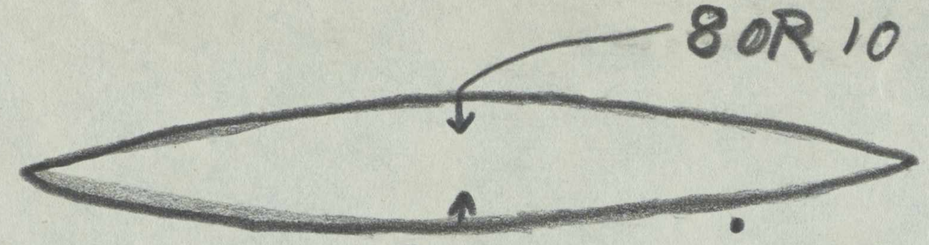
ANSWER: I have, over the past six years, done a great deal of travel by airplane. In fact, while living in Puerto Rico it was my main mode of transportation. I have flown at the rate of 20,000 to 30,000 miles a year. Too, I have been on Patrick over one and one-half years during which time I have observed the movement of aircraft to and from the Base. I have also been at Eglin Air Force Base where I observed B-36's daily. I do not fly any type of aircraft myself.

"I certify that to the best of my knowledge, the above is true and correct."

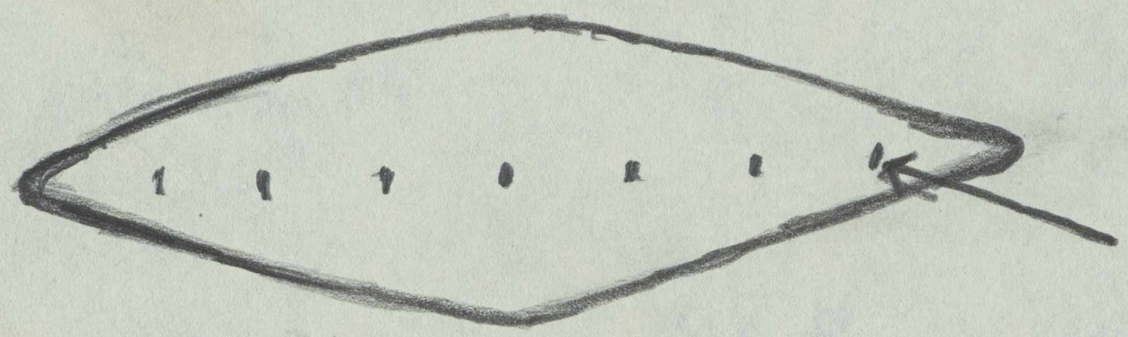
V. L. Black

V. L. BLACK

Declassification Authority: NND 57565



REAR VIEW



BOTTOM VIEW

encl #3 to 4814

U. Z. Black,
Photographic Film Editor
Photo Branch. Patrick Air Force Base.

Declassification Authority: NND 57565

ELEVATIONS IN FEET

ORLANDO (0-8)

Lambert Conformal Conic Projection Standard Parallels 33° and 45° Scale 1:500,000

WARNING AREA (W-158)

Warning, National Defense Operating Area
Operations hazardous to the flight of aircraft conducted within this area.

DANGER AREA (D-161)

WARNING AREA (W-184)
SURFACE TO 1000 FEET

WARNING AREA (W-141)

WARNING AREA (W-143)

Warning, National Defense Operating Areas
Operations hazardous to the flight of aircraft conducted within these areas.

DANGER AREA (D-162)

WARNING AREA (W-163, 164)

Warning, National Defense Operating Area
Operations hazardous to the flight of aircraft conducted within this area.

(W-164)

mr Black's Home

RED LINE IS THE ESTIMATED PATH OF OBJECT.

ELEVATIONS IN FEET 2000
Spot Elevation
CONTOUR INTERVAL 500

PRICE 25 CENTS

ORLANDO (0-8)

COMPILED AND PRINTED AT WASHINGTON, D. C.
BY THE U. S. COAST AND GEODETIC SURVEY
UNDER AUTHORITY OF THE SECRETARY OF COMMERCE

Principal Sources: U. S. Geological Survey, U. S. Army Corps of Engineers, U. S. Air Force, U. S. Dept. of Agriculture, Civil Aeronautics Administration, and the U. S. Coast and Geodetic Survey.

BASE: Edition of July 1949 Revised June 1951

NOTE: It is requested that users of this chart indicate corrections and additions which come to their attention and notify "THE DIRECTOR, U. S. COAST AND GEODETIC SURVEY, WASHINGTON 25, D. C."

TO REFERENCE BY THE GEOREF (SHOWN IN BLUE) TO MINUTES
(Select nearest intersection south and west of point)

Sample Point: HUDSON
1. GH identifies basic 15° quadrangle
2. HP identifies 1° quadrangle
3. 18 identifies Georef minute of longitude
4. 21 identifies Georef minute of latitude
5. Sample reference: GHHP1821

VERY HIGH FREQUENCIES (VHF) PRINTED IN BLUE
BLUE TINT INDICATES AIR TRAFFIC CONTROLLED AREAS
For pilot information see reverse side

GEOREF 7-51

Consult Coast and Geodetic Survey Radio Facility Charts and Civil Aeronautics Administration Airman's Guide for changes in aeronautical information on this chart after

JULY 26, 1951

Next scheduled edition, February, 1952

ORLANDO (0-8)
SECTIONAL AERONAUTICAL CHART

U.S. AIR FORCE EDITION

Declassification Authority: NND 57565

AERONAUTICAL SYMBOLS

AERODROMES

LANDPLANE	SEAPLANE		
○	⊕	Military base	Of major aeronautical importance
⊙	⊛	Civil	
⊙	⊛	Joint civil and military base	
○	⊕	Military	Offering services that include repairs for normal traffic and/or refueling
◇	◈	Civil	
◇	◈	Joint civil and military	
○	⚓	Landing area or anchorage	No public services available

AERODROME DATA

LANDPLANE		SEAPLANE	
18	Elevation in feet	00	Elevation in feet
L	Minimum lighting	L	Minimum lighting
H	Hard surfaced runway	S	Normally sheltered take-off area
46	Length of longest runway to nearest hundred feet	62	Length of longest runway to nearest hundred feet

HARMON FIELD 18 L H 46 Airport of entry G.C.A. SYSTEM 278 126.18

NAS ANACOSTIA 00 L S 62 2870

278 126.18 2870 **Control tower transmitting frequencies**

When information is lacking, the respective character will be replaced by a dash — VALLEY (750 L — 32

AIR NAVIGATION LIGHTS

Rotating light
Rotating light (With flashing code)
Rotating light (With course lights) 17
Flashing light
Flashing light (With code)
Marine light
Lightship

F-fixed Fl-flashing Occ-occulting Alt-alternating Gp-group R-red W-white G-green B-blue (J)-unsatched SEC-sector sec-second
Marine alternating lights are red and white unless otherwise indicated. Marine lights are white unless colors are stated.

RADIO FACILITIES

Use of the word "Radio" within the box indicates voice facilities

Radio range (Without voice) — WOODY RANGE 251 FWA 1275 kc
Marine radiobeacon (Without voice) — 285c EVERETT 274 ·— 10sec-20sec & 30sec-40sec
Radio broadcasting station — BS WOL 1260
Radiobeacon, nondirectional (homing) — BEDFORD RADIO 522 DBH 200

MISCELLANEOUS

Isogonic line or isogonal — 8°E (Values for 1950)
Mooring mast
Prominent transmission line
Obstruction 1180
(Numerals indicate elevation above sea level of top.)

Restricted areas are numbered, and are indicated on the charts as follows:
Prohibited area (AR-78)
Danger or warning area (D-32) (W-46)
Caution area (C-54)

Civil airway — Control zone — Blue tint indicates extent of all controlled areas

NEWTON (Reporting point)
A N 090° AURAL RANGE (Bearings are magnetic at the station) 270° N A
100 watts 5 watts
Fan Marker Beacons (75 mcs)
AVON FORNEY EASTON

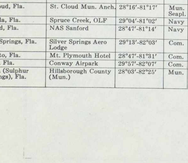
VERY HIGH FREQUENCIES (VHF) PRINTED IN BLUE

VHF MATAWAN RADIO W 109.1 MWA

VHF FOUR-COURSE VISUAL-AURAL RADIO RANGE

The Blue and Yellow Visual Sectors are indicated by a B and Y; the Aural Sectors by A and N
Letter preceding frequency in box indicates channel

VHF OMNI-DIRECTIONAL RADIO RANGE DESCRIPTION



Bearings are magnetic at the station
Radius of circle is 15 nautical miles.

The VHF omni-directional range provides visual track guidance along any selected radial from the station out to a distance of approximately 50 miles when flying at the minimum instrument altitude. These ranges operate in the frequencies between 112 and 118 megacycles and require a special omni range type receiver to make use of the navigational features. Also provided are simultaneous voice communication and 3-letter (coded) identification. In operation, the pilot selects a course by setting the pointer on a course or radial selector to the desired magnetic bearing and then flies that course by reference to a cross pointer instrument.

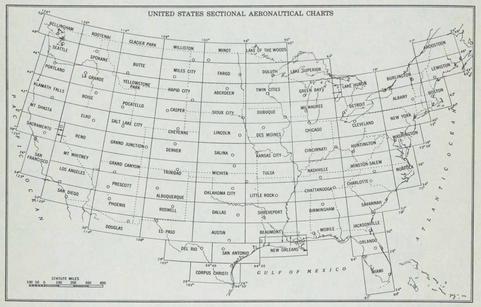
7/12/51

SECTIONAL CHARTS

The sectional aeronautical chart series provides complete coverage of the United States. An additional chart covers the Hawaiian Islands. These charts are designed primarily for piloting, which is also known as contact flying. They contain a maximum amount of cultural topographic features including important landmarks.

Sectional charts are revised at six-month periods to insure that the airman has the latest information available, and are sold through authorized agents located at airports and principal cities throughout the United States. They may also be obtained by writing to the Director, U. S. Coast and Geodetic Survey, Department of Commerce Building, Washington 25, D. C.

In the lower right-hand corner is printed the date of the chart. Below this the next scheduled printing is indicated. If the date of the chart is more than six months old, users are advised to check with the notices (Dates of Latest Prints) on file with authorized agents. Charts that carry older dates than those shown in large type on this list of dates are obsolete.



ADDITIONAL AERONAUTICAL CHARTS PUBLISHED AND PRINTED BY THE U. S. COAST AND GEODETIC SURVEY

Planning Charts	AP-9 and 3069a 3060d	1:5,000,000 1:3,000,000
Aircraft Position Charts	3071 North Atlantic 3073 Caribbean Sea	1:5,000,000 1:5,000,000
Route Charts	Show limited topographic information, selected aerodromes, and major radio data.	1:2,000,000
Direction Finding Charts	Six charts cover the United States	1:2,000,000
World Aeronautical Charts	Forty-three charts cover the United States	1:1,000,000
Flight Charts	Thirty-seven charts cover the principal air routes of the United States	1:1,000,000
Local Charts	Designed to provide additional landmark information and topographic detail for important air terminals.	1:250,000
Instrument Approach and Landing Charts	More than 475 charts designed for use in manuals with Radio Facility Charts	Approach 1:250,000 Landing 1:31,680
Instrument Landing System Charts	Similar to Instrument Approach and Landing charts but printed in black and halftone instead of color. Show very little detail.	Approach 1:250,000 Landing 1:75,000 1:90,000
Airport Obstruction Plans	Show runways and selected aerodrome information and objects in the vicinity that may be hazards to air traffic.	1:12,000
Radio Facility Charts	Sixty-five charts of the U. S. show all radio facilities, airways and other information necessary for instrument flying.	1:2,000,000

A catalog giving a complete list and description of the various series is available upon request.

4/11/51

LIGHT SIGNAL PROCEDURES FOR AIRPORT TRAFFIC CONTROL

The following procedures are used by airport traffic control towers in the control of aircraft not equipped with radio. These same procedures will be used to control aircraft equipped with radio if radio contact cannot be established.

(Note: It should be understood that pilots may proceed in a conventional manner if no signals are displayed)

Airport traffic control personnel use a directive traffic control signal which emits an intense narrow beam of a selected color (either red, white, or green) when controlling traffic by light signals. The normal range of the signal in good weather is ten miles in day time and fifteen miles at night and is readily discernible to the pilot of any aircraft that is visible to the controller.

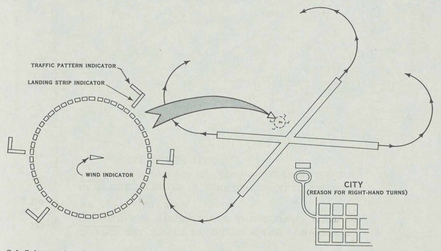
Although the traffic signal light offers the advantage that some control may be exercised over non-radio equipped aircraft, all pilots should be cognizant of the disadvantages which are:

1. The pilot may not be looking at the control tower at the time a signal is directed toward him.
2. The directions transmitted by a light signal are very limited since only approval or disapproval of a pilot's anticipated actions may be transmitted. No supplementary or explanatory information may be transmitted except by the use of the "General Warning Signal" which advises the pilot to be on the alert.

Signals from a portable traffic control light shall mean the following:

Color and Type of Signal	On the Ground	In Flight
STEADY GREEN	Cleared for take-off	Cleared to land
FLASHING GREEN	Cleared to taxi	Return for landing (to be followed by steady green at proper time)
STEADY RED	Stop	Give way to other aircraft and continue circling
FLASHING RED	Taxi clear of landing area (runway) in use	Airport unsafe-do not land
FLASHING WHITE	Return to starting point on airport	.....
ALTERNATING RED & GREEN	General Warning Signal - Exercise Extreme Caution.	

TRAFFIC PATTERN INDICATED BY SEGMENTED CIRCLE



Safe flying requires that a pilot know the traffic pattern for the airport when landing or taking off. The segmented circle marker, illustrated above, furnishes the pilot this information. When traffic pattern indicators are used with the circle marker, they tell the pilot to make his turn in the direction in which the indicators point. If the traffic pattern indicators are not used, the pilot will know that the normal left-hand pattern must be followed. For additional information see TSO-N5, copies of which are available from Office of Aviation Information, A-258, C.A.A., Department of Commerce, Washington 25, D.C.

CRUISING ALTITUDES

CRUISING ALTITUDES WITHIN CONTROL AREAS AND ZONES--Aircraft at or more than 3000 feet above the surface within control areas and/or control zones must be flown at odd or even 1000-foot levels appropiate to the direction of flight. "Odd and even" indicators are shown on Coast and Geodetic Survey Radio Facility Charts.

The following rules will govern the altitude at which aircraft shall fly when making flights along civil airways:

Green and Red Airways

Eastbound flights. Aircraft making good a true course of from 0° (or 360°) to, but not including, 180° along a green or red civil airway shall fly at an ODD thousand-foot level above sea level (such as 3000, 5000, or 7000 feet).

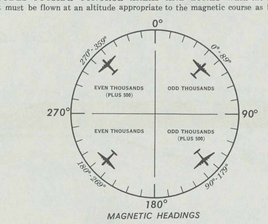
Westbound flights. Aircraft making good a true course of from 180° to, but not including, 360° (or 0°) along a green or red civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2000, 4000, or 6000 feet).

Amber and Blue Airways

Northbound flights. Aircraft making good a true course of from 270° to, but not including, 90° along an amber or blue civil airway shall fly at an ODD thousand-foot level above sea level (such as 3000, 5000, or 7000 feet).

Southbound flights. Aircraft making good a true course of from 90° to, but not including, 270° along an amber or blue civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2000, 4000, or 6000 feet).

CRUISING ALTITUDES OUTSIDE CONTROL AREAS AND ZONES--When the flight visibility is less than three miles, aircraft must be flown at an altitude appropriate to the magnetic course as illustrated below.



VISUAL FLIGHT PLANS

The Civil Air Regulations do not require that a VFR flight plan be filed for a VFR flight. However, the filing of such a flight plan is desirable, and the CAA urges that VFR flights be covered by flight plan whenever practicable as such filing materially assists in search and rescue operations if such action becomes necessary. Flight plans may be submitted to the nearest CAA airway communications station either in person or by telephone. Flight plans may be filed by radio if no other means are available but this practice should be avoided whenever possible to reduce congestion of radio channels.

If filing the flight plan, the pilot should state the name of the CAA communications station with which he will close his flight plan. If the destination is not served by a CAA communications station, or is in Canada or Mexico, the method by which the arrival report will be filed must be clearly understood by all concerned. VFR flight plans are transmitted via CAA communications facilities only to the CAA communications station with which the pilot has stated his arrival report or closing of flight plan will be filed. One hour after the estimated time of arrival, if no notice of arrival it received, queries are sent out over CAA communications systems to determine the location of the aircraft. If no information concerning the aircraft is obtained after an exhaustive communications inquiry, search and rescue operations are inaugurated. In as much as the government may be put to considerable expense in determining the location of aircraft when an arrival report is not filed, it is vitally necessary that all pilots make certain that notice of arrival is filed. If flight is terminated prior to reaching the point of intended destination specified in the flight plan, pilots should contact the nearest CAA communications station and the request that an arrival report be transmitted over CAA facilities to the CAA communications station with which the pilot stated the arrival report would be filed.

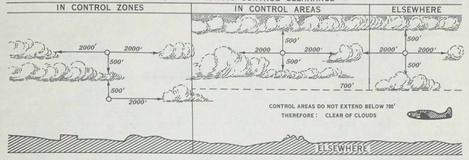
Pilots of aircraft operating on VFR flight plan who desire to make flight progress reports, should include in the report the phrase: "VFR FLIGHT PLAN FROM (blank) TO (blank)."

The flight plan shall contain the items listed under INSTRUMENT FLIGHT RULES - Flight Plan, except "Alternate Airport" and except that a visual flight rule flight plan should always specify "VFR" as a cruising altitude. The use of this term in lieu of an actual altitude indicates that the pilot intends to fly in accordance with Visual Flight Rules. Aircraft may be operated in accordance with VFR above a well defined cloud or other formation provided, climb to and descent from such "on top" flight can also be made in accordance with VFR.

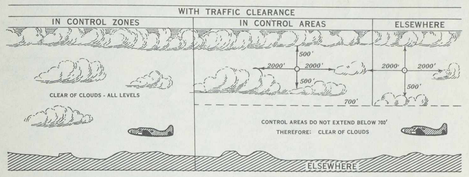
VISUAL FLIGHT

MINIMUM CEILINGS AND DISTANCES FROM CLOUDS

WITHOUT AIR TRAFFIC CONTROL CLEARANCE

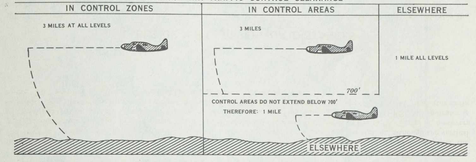


WITH TRAFFIC CLEARANCE

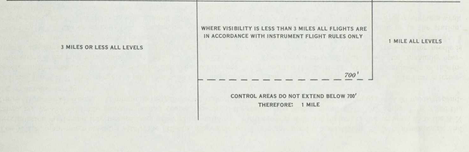


VISIBILITY MINIMUMS

WITHOUT AIR TRAFFIC CONTROL CLEARANCE



WITH TRAFFIC CLEARANCE



AERODROMES - ORLANDO SECTIONAL CHART

LOCATION	NAME	GEOGR. POSITION	TYPE	ELEV.	FACILITIES				REMARKS
					FUEL (OCTANE)	REPAIRS	RUNWAYS NO.	RUNWAYS LONGEST	LIGHTS	
Allenhurst, Fla.	Haulover Canal	29°45'-80°46'	Mun.	9			1	3000		Unattended
Astor Park (Sellers Lake), Fla.	Sellers Lake	29°06'-81°26'	Priv.	70			2	2350		
Brooksville, Fla.	Brooksville Mun.	28°28'-82°21'	Mun.	70	80		3	7003H		Livestock on field attended days
Bunnell, Fla.	Bunnell Mun.	29°28'-81°12'	Mun.	34			4	5003H		Livestock on field
Cedar Key, Fla.	Cedar Key	29°08'-83°03'	Com. Seapl.	00	80		All way	15800		Wooden dock, hand pump. Attnd. & fuel intermit.
Cedar Key, Fla.	Geo. T. Lewis (Mun.)	29°08'-83°03'	Mun.	6	80		1	2403H		Attnd. & fuel intermit.
Crom City, Fla.	CAA Site 58	29°38'-83°06'	Mun.	42	80		2	5003H	Boundary	
Crystal River, Fla.	West Citrus Co. (Mun.)	28°52'-82°34'	Mun.	7			1	3000		Unattended
Daytona Beach, Fla.	Daytona Beach	29°11'-81°03'	Mun.	34	80, 91, 100	Major	4	4140H	Runway	
Daytona Beach, Fla.	Raymond	29°14'-81°02'	Com. Seapl.	00			2	Unlim.		Ramp, float, docks N. of bridge. Inactive
De Land, Fla.	De Land Mun.	29°04'-81°13'	Mun.	80	80	Major	4	6004H	Runway on req.	
Dunnellon, Fla.	Dunnellon Mun.	29°03'-82°23'	Mun.	66			3	5000H		Cattle on fld., unattd.
Gainesville, Fla.	Gainesville Mun.	29°41'-82°16'	Mun.	155	80	Major	3	5003H		
Gainesville, Fla.	Stengal Field	29°37'-82°23'	Com.	70	80	Major	1	3500		Rough
Green Cove Springs, Fla.	Green Cove	29°59'-81°40'	Com.	20	80	Minor	1	2200		Soft, light acft. only
Green Cove Springs, Fla.	OLF Lee Field	29°58'-81°39'	Navy	21			4	5130H	Rwy., flood prior req.	Oil, bus. only contact NAS Jacksonv'lle
Groveland, Fla.	Groveland Mun.	28°32'-81°50'	Mun.	108	80		2	2000		Unattended
Haines City, Fla.	Haines City	28°07'-81°39'	Mun.	175			2	2000		CAA Site 7 on field Unattended
Hawthorn, Fla.	Hawthorn	29°34'-82°04'	Priv.	120			2	2000		
Howey In The Hills, Fla.	Howey	28°42'-81°46'	Priv.	75			2	2000		
Inverness, Fla.	Inverness Mun.	28°49'-82°19'	Mun.	50			1	2000		Unattd., rough, sandy
Keystone Heights, Fla.	Keystone Air Park	29°51'-82°03'	Mun.	192	80, 91	Major	3	5000H	Port strip lts., prior req.	Livestock on field,
Keystone Heights, Fla.	Keystone Seaplane Base	29°50'-82°03'	Mun. Seapl.	160	80, 91	Major	4	6500		Dock & dolly. Circle arpt. for acrg.
Kissimmee, Fla.	Kissimmee Mun.	28°17'-81°26'	Mun.	82			3	5000H		CAA Site 8 on field
Lake Butler, Fla.	Lake Butler OLF	29°59'-82°22'	Navy	131			4	6003H		Closed, not maintd.
Lakeland, Fla.	Lodwick	28°04'-81°57'	Mun.	159	80, 91	Major	4	3500H	Rwy., bndy.	Rwy. lgts. prior req. fo 2400 & then unavailable
Lakeland, Fla.	Skyland	28°03'-81°56'	Com.	170	80	Major	3	2100	Port. strip lights	Lights local oper. only
Leesburg, Fla.	Eagles Nest	28°53'-81°52'	Com.	80			1	2100		
Leesburg, Fla.	Gray's	28°53'-81°54'	Com.	130			2	2000		Caution
Leesburg, Fla.	Leesburg Mun.	28°49'-81°48'	Mun.	67	80	Major	2	5003H	Bndy., prior req.	
Malabar, Fla.	Malabar OLF	28°01'-80°40'	Navy	27			4	4006H		Closed, not maintd.
Melbourne, Fla.	Melbourne Arch.	28°01'-80°35'	Com. Seapl.	00			1	Unlim.		Limited svrg. at Airport
Melbourne, Fla.	Melbourne-Eau Gallie Mun.	28°06'-80°38'	Mun.	26	80, 91	Major	4	4300H	Runway	Lights 16-34 rnwy.
Minneola, Fla.	Kerlin Field	28°36'-81°44'	Priv.	100			3	2400		Unattended
New Smyrna Beach, Fla.	New Smyrna Beach Mun.	29°03'-80°57'	Mun.	12	80, 91	Major	4	5000H		Attd. 24 hrs.
Orala, Fla.	Taylor Field Mun.	29°10'-82°09'	Mun.	84	80, 91	Major	3	4000H	Rwy., bndy.	Attd. days
Orange Lake, Fla.	Woodhams	29°26'-82°13'	Com.	150	80		1	2100		Attd. days except Sundays
Orange Springs, Fla.	Hancock	29°29'-81°56'	Priv.	120			1	1820		Emergency only
Orlando, Fla.	Cannon Mills	28°32'-81°18'	Com.	105	80		4	3600		Irreg. attended.
Orlando, Fla.	Hocquist	28°30'-81°24'	Com.	90	80	Major	2	2000		
Orlando, Fla.	Raymonds	28°32'-81°25'	Civil Seapl.				All way	5280		Inactive
Orlando, Fla.	Orlando Mun. No. 1	28°32'-81°20'	Mun. & AF	115	80, 91	Major	6	5563H	Runway	*Fld. lts. on req. North E-W rnwy. clsd.
Orlando (Winter Park), Fla.	Aviation Country Club	28°36'-81°22'	Com. Seapl.	85	80, 91	Major	All way	7920		Ramp, dock
Ormond, Fla.	Tomoka	29°18'-81°07'	Mun.	29			4	4000H		Closed, not maintd.
Osceola, Fla.	Osceola OLF	28°47'-81°04'	Navy	25			4	4006H		Closed, not maintd.
Palatka, Fla.	Kay Larkin Mun.	29°39'-81°41'	Mun.	56	80, 91, 100		4	5013H		
Pierson, Fla.	Pierson Memorial (Mun)	29°14'-81°27'	Mun.	70			1	2200		Occasional operation
Plant City, Fla.	Plant City Mun.	28°00'-82°09'	Mun.	154			1	4200H		
Plant City, Fla.	Robinson Field	28°00'-82°08'	Com.	110	80	Major	2	1930		
St. Augustine, Fla.	St. Augustine Mun.	29°57'-81°20'	Mun.	10	80, 91		4	4001H		Attd. daily except Monday
St. Cloud, Fla.	St. Cloud Mun. Arch.	28°16'-81°17'	Mun. Seapl.	65			All way	Unlim.		
Sampala, Fla.	Spruce Creek, OLF	29°04'-81°02'	Navy	25			4	4006H		Closed, not maintd.
Sanford, Fla.	NAS Sanford	28°47'-81°14'	Navy	57	A-4-BJ	Minor	4	6006H	Temp. rnwy.	Fld. lgts. 30 min. notice
Silver Springs, Fla.	Silver Springs Aero Lodge	29°13'-82°03'	Com.	75	80		1	2640		
Sorrento, Fla.	Mt. Plymouth Hotel	28°47'-81°31'	Com.	151	80		1	1700		
Starke, Fla.	Conway Airpark	29°57'-82°07'	Com.	165	80		2	2000		
Tampa (Sulphur Spring), Fla.	Hillsborough County (Mun.)	28°03'-82°25'	Mun.	67			3	5006H		Legally closed to all acft, until further notice

7-25-51

AERODROMES - ORLANDO SECTIONAL CHART

LOCATION	NAME	GEOGR. POSITION	TYPE	ELEV.	FACILITIES				REMARKS
					FUEL (OCTANE)	REPAIRS	RUNWAYS NO.	RUNWAYS LONGEST	LIGHTS	
Tarpon Springs, Fla.	Tarpon Springs Mun.	28°09'-82°47'	Mun.	12			2	2550		
Titusville, Fla.	Titusville Mun.	28°37'-80°49'	Mun.	28	80	Minor	2	2600	Bndy. prior req.	Irreg. attended
Titusville, Fla.	Titusville Arch.	28°36'-80°48'	Com. Seapl.	00	80		1	Unlim.		2 ramps
Titusville (Cocoa), Fla.	Titusville-Cocoa Mun.	28°31'-80°47'	Mun.	35	80	Major	4	5000H	Rnwy. on req.	Repairs on 2 hrs. notice. Cattle on fld.
Umatilla, Fla.	Umatilla Arch.	28°55'-81°39'	Priv. Seapl.	100			1	5280		Dock, emerg. only
Umatilla, Fla.	Umatilla Mun.	28°56'-81°39'	Mun.	100			1	2300		Unattd., use strip only
Williston, Fla.	Williston Mun.	29°22'-82°28'	Mun.	70			2	7000H		Unattended
Winter Haven, Fla.	Gilbert Field (Mun.)	28°04'-81°45'	Mun.	135	80	Major	2	4000H		
Winter Haven, Fla.	Gilbert (Mun.)	28°05'-81°44'	Mun. Seapl.	125	80	Minor	All way	6600		
Winter Park (Orlando), Fla.	Showalter Airpark	28°36'-81°19'	Com.	91	80, 91	Major	2	2500	B 2 bndy. & flood.	
Zephyrhills, Fla.	Zephyrhills Mun.	28°13'-82°09'	Mun.	92	80	Major	2	5550H	Port. bndy. for local oper.	

Fuel octane ratings listed by number are those available to civil aircraft, unless otherwise noted.
Military fuel is listed by letter code indicating octane ratings as follows: A-4-: 115/145, A: 100/130, B: 91/98, C: 73 or 80, J: JP-1, 3.

The above listing does not include Air Force aerodromes.
*Joint civil and military operation; Air Force facilities at these fields are not listed.

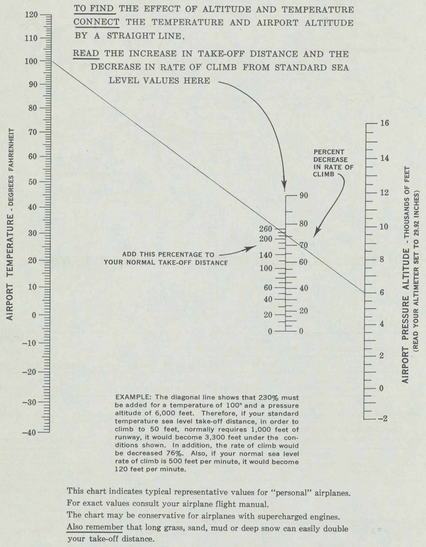
Consult the latest Airman's Guide for changes in data subsequent to date of chart.

7-25-51

THE KOCH CHART FOR ALTITUDE AND TEMPERATURE EFFECTS

TO FIND THE EFFECT OF ALTITUDE AND TEMPERATURE CONNECT THE TEMPERATURE AND AIRPORT ALTITUDE BY A STRAIGHT LINE.

READ THE INCREASE IN TAKE-OFF DISTANCE AND THE DECREASE IN RATE OF CLIMB FROM STANDARD SEA LEVEL VALUES HERE



EXAMPLE: The diagonal line shows that 230% must be added for a temperature of 100° and a pressure altitude of 6,000 feet. Therefore, if your standard temperature sea level take-off distance, in order to climb to 50 feet, normally requires 1,000 feet of runway, it would become 3,300 feet under the conditions shown. In addition, the rate of climb would be decreased 76%. Also, if your normal sea level rate of climb is 500 feet per minute, it would become 120 feet per minute.

This chart indicates typical representative values for "personal" airplanes. For exact values consult your airplane flight manual.

The chart may be conservative for airplanes with supercharged engines.

Also remember that long grass, sand, mud or deep snow can easily double your take-off distance.

LOSS OF AIRCRAFT PERFORMANCE DURING HOT WEATHER

Thin Air Reduces Lift. You get thin air at high altitudes and in hot weather. The hotter the temperature, the thinner the air.

Do you realize that Kansas City Airport with an elevation of 744 feet above sea level can have an effective elevation identical to Stapleton Field, Denver, at 5325 feet above sea level, under conditions of extreme heat and low pressure?

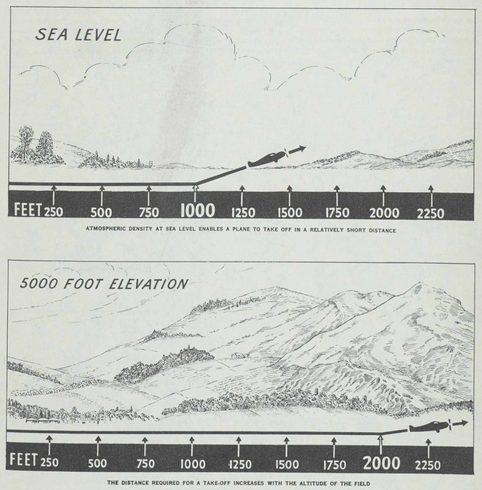
Do you realize that Brees Airport at Laramie, Wyoming, at 7273 feet above sea level, can be above the safe operational altitude of your aircraft during hot weather?

Note: The effective elevation of Brees Airport at 86°F, for example, is 10,250 feet-Caution!

The rarified air at higher altitudes lowers the efficiency of engine and propeller, and lessens a plane's rate of climb. A typical light plane has a maximum rate of climb at sea level of 420 feet per minute, whereas its maximum rate of climb at 5,000 feet altitude is only 225 feet per minute.

This plane might be able to clear a 400 foot hill or factory stack located a few miles from a sea level airport, but if the pilot tried it at 5,000 feet, he would smack right into the middle of the obstruction.

Remember: Any increase in operating altitude (due to elevation or high temperature) greatly increases take-off and landing roll.



V.H.F. OMNI-RANGE (VOR)

The V.H.F. omni-range operates within the 112-118 megacycle band. In this band it is relatively free from atmospheric and precipitation static and interference from other radio stations. Furthermore, it is not limited to four courses as is the A-N range, but provides definite guidance on any course, to or from the station, the pilot may select. That is why it is called the Omni (Directional) Range. At minimum instrument altitudes the VOR gives reliable indications up to about 50 miles, depending on enroute terrain.

In flying the V.H.F. omni-range, the pilot uses three basic instruments. The first is the Flight Path Deviation Indicator (cross-pointer instrument), the same type used for the visual-aural range (VAR) and the ILS localizer. The vertical needle of this instrument tells the pilot whether he is right or left of the desired course. The second is an Omni-bearing Selector, manually operated by the rotation of a small knob, by which the pilot selects the course he desires to fly. When the cross-pointer needle is centered, the omni-bearing selector indicates the magnetic bearing of the aircraft either to or from the station. The third is a "TO-FROM" indicator which shows whether the omni-bearing indicated by the Omni-bearing Selector is from or to the station. Furthermore, the "TO-FROM" needle can tell a flier when his aircraft is too far from the VOR or is otherwise receiving a weak signal. In this case the needle points to a red sector instead of TO or FROM.

In operation, the pilot selects a course by adjusting the omni-bearing selector to the desired magnetic bearing, and then maintains it by keeping the cross-pointer needle centered. If the aircraft is correctly aligned with the TO-FROM indications, when the needle swings to the right, for example, it indicates that the course selected lies to the right.

For example, an aircraft is due south of a VOR station. If its pilot desires to fly to the station, he sets the omni-bearing selector to indicate 0°. The "TO-FROM" indicator will then point to the word "TO". As the aircraft passes over the station the "TO-FROM" indicator will point to the word "FROM". If a turn of 180° is made north of the station, although the vertical cross-pointer needle will again become centered, the "TO-FROM" indicator will still point to "FROM". The pilot, however, will now find that he must fly "Away from the needle" to stay on course. This shows him that the "TO-FROM" indicator is incorrect. So, the pilot now rotates his omni-bearing selector to 180°. After he has done this, the "TO-FROM" indicator shifts to the "TO" position, and flying "Toward the needle" will keep him on course.

TABLE OF V.H.F. RECEPTION DISTANCES

With the increasing use of VHF and UHF frequencies for communication and navigation it appears desirable to publicize the reception distances for these frequencies. They, therefore, are tabulated below:

Feet Above Ground Station*	Reception Distance**-Statute Miles
500	30
1,000	45
3,000	80
5,000	100
10,000	140
15,000	175
20,000	200

*No physical obstruction intervening.
**Based on zero elevation of the facility.

If you are using a VHF transmitter, remember that its effective range increases with your altitude. Don't attempt to contact a station unless you are within "line of sight"

U.S. WEATHER BROADCASTS AND TRANSMISSIONS

All continuously operated CAA radio range and radio beacon stations having voice facilities on the range or radio beacon frequencies broadcast weather reports and airway information at 15 and 45 minutes past each hour. The 15-minutes past-the-hour broadcast is an "airway" broadcast consisting of weather reports from important terminals located on airway (s) within approximately 400 miles of the station. The 45-minutes-past-the-hour broadcast is an "area" broadcast consisting of weather reports from locations within the flight information area of the station.

The broadcast consists of the local weather report and the latest available surface reports from other locations. Reports more than one hour old are not broadcast. Local winds aloft are broadcast 4 times after the broadcasts at 6:15 and 12:15 A.M., and P.M., E.S.T. The velocities of winds aloft are broadcast in knots - not miles.

At selected stations the Weather Bureau provides a local terminal forecast covering the next two hours. This forecast is broadcast, when available, immediately following the local weather report.

Pilots enroute are requested to avoid, if possible, calling airway communications stations at or about 15 and 45 minutes past the hour (which are the scheduled broadcast times) to request weather information, as such calls may delay starting of scheduled broadcasts and cause inconvenience to other persons who are dependent on the broadcasts for weather reports.

4/19/50

Declassification Authority: NND 57565