

1. DATE - TIME GROUP 23 March 53 24/0412Z	2. LOCATION Pasadena, Texas
3. SOURCE Varied	10. CONCLUSION BALLOON
4. NUMBER OF OBJECTS One - Four	Object meets the description of a Radiosonde Weather Balloon.
5. LENGTH OF OBSERVATION 30 Minutes	11. BRIEF SUMMARY AND ANALYSIS At 0412 a blip appeared on radar scope for a period of approx 25 sec. At 0415 object was sighted visually appearing to be a reddish colored light circling around (5 times) Pasadena then disappearing to the NNE.
6. TYPE OF OBSERVATION Radar Ground-Visual - Ground	
7. COURSE Circling	
8. PHOTOS ☐ Yes ☒ No	
9. PHYSICAL EVIDENCE ☐ Yes ☒ No	

(CLASSIFICATION)

UNCLASSIFIED / 5

COUNTRY USA	REPORT NO.	(LEAVE BLANK)
AIR INTELLIGENCE INFORMATION REPORT		
SUBJECT FLYOBRRPT		
AREA REPORTED ON Pasadena, Texas	FROM (Agency) 747th AC & W Sq	
DATE OF REPORT 31st March 1953	DATE OF INFORMATION 23 March 1953	EVALUATION C-1
PREPARED BY (Officer) CHESTER L CURVEY; Captain, USAF	SOURCE See Item 1 thru 7	
REFERENCES (Control number, directive, previous report, etc., as applicable) CAAF Reg 200-5, AFL 200-5		
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.)		

Report of FLYOBRRPT as seen by the following named persons;

- | | |
|----------------------------|----------------------------------|
| 1. T/Sgt Patrick D Liggett |) Radar Scope Presentation |
| 2. A/lc C A Graves |) Visual Sighting |
| 3. A/lc C W Olden |) " " |
| 4. A/3c Leonard Duresea Jr |) " " |
| 5. Mrs [REDACTED] |) " " |
| 6. Mrs [REDACTED] |) " " |
| 7. 2nd Lt Robert K Smith |) Shooting of Stars with Sextant |

The following weather prevailed for 23rd March 1953.

AP around our station for 50 miles also extending to 100 miles in a northeastern and southwestern direction.

Ground clutter around station didnot permit continuous tracking.

Aircraft at this station: The director on duty notified Ellington AFB, Texas, but was informed no Aircraft or Pilots were available to become Airborne for Identification purpose.

There was no Aircraft at the time of observation

Chester L. Curvey
CHESTER L CURVEY
Captain, USAF
Direction Center Chief

16 INCLS

Statement's of T/Sgt Liggett
A/lc Graves
A/lc Olden
Mrs [REDACTED]
Mrs [REDACTED]
2nd Lt Smith

WAC NO 468 (Weather)
WAC NO 468 (Flyobrpt)
Photo (Weather day)

DISTRIBUTION BY ORIGINATOR

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT, 50 U. S. C.—
ND 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.

(CLASSIFICATION)

UNCLASSIFIED

Incl I

UNCLASSIFIED

AF FORM 112—PART II
APPROVED 1 JUNE 1948

AIR INTELLIGENCE INFORMATION REPORT

FROM (Agency)	REPORT NO.	PAGE	OF	PAGES
747th AC & W Sq		2	7	

At 0355 Z, Lt R K Smith called Base Operations and reported seeing a flying object over Pasadena, Texas. (See inclosures for Lt R K Smith's statement). Base Operations passed Lt Smith's information to the 747th AC & W Sq. T/Sgt Liggett, A/lc Graves, and A/lc Olden of the 747th AC & W Sq observed the object reported and made the following statement.

"We immediately Radar scanned the area and could not locate the object electronically. We went out side and sighted the object in a sector believed to be over Pasadena, Texas. The object showed a steady reddish light, which was not observed to change in color. The object was on a heading of approximately 355° to 040° degrees from this base ranging from 12 to 35 miles. The object made five circles over Pasadena, then went off in a NNW direction. The object was sighted visually at 0415 Z, 24th March 1953. At 0412 Z the object was sighted on the radar screen at this station. It was present for about 25 seconds which did not provide time to take a picture of the blip. At 0435 Z, 24 March 1953, this station notified 745th AC & W Sq that the object was headed in their direction."

Release of weather balloons at approximately the time of the sighting from Ellington AFB, Texas.

One weather balloon was released from Ellington AFB, Texas at 0815 Z, 23 March 1953, Climbed at a rate of a 1000 ft per min and rose to approximately 52,000 ft. At 0845 Z the second balloon was released and climbed at the rate of 1000 ft per min.

This is the track of the two Weather balloons

From surface to 5,000 ft track was SW due to NE wind at 10 Knots.
From 5,000 to 10,000 ft track was NW due to SW wind at 40 Knots.
From 10,000 ft to 18,000 ft track was NW due to SE wind at 50 Knots
From 18000 ft to 23,000 ft track was NW due to SE wind at 80 Knots.

Weather balloons released after dark carry a 6 volt battery, which powers a small white light. This cannot be seen with the naked eye above approximately 12,000 feet. A picture inclosed which shows a weather balloon shortly after release. There are no facilities at this station to take photographs after dark.

Visual observation of weather balloons ascensions has disclosed that the suspended radiosonde oscilates considerably in rough air. Since the radiosonde is lighted at night it is considered possible that this oscilation might be misconstrued as the orbited movement of an unknown aerial object.

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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.

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AIR INTELLIGENCE INFORMATION REPORT

FROM (Agency)	REPORT NO.	PAGE	3	OF	7	PAGES
747th AC & W Sq						

The statement of T/Sgt. Patrick D. Liggett, AF 17096050, AC & W Supervisor, at this station, is as follows:

On the night of March 23, 1953 at approximately 0410Z, I observed a strange object which was over Pasadena, Texas at the time of the sighting it was a constant light moving in a large circle over the city. The object seemed to be the same dull red color at all time's and didnot change. The estimated speed was 300 to 350 knots at 45,000ft. The object seemed to move left and then to the right. We at this station picked-up object on our scope, the object was on on the scope for three (3) sweeps at 6 RPM. with the antenna tilt at 20° it was about the same size as any blip at that range, The object was heading north at 12 miles.

Patrick D. Liggett
PATRICK D. LIGGETT
T/SGT USAF
AF. 170960050.
AC & W Supervisor.

Statement of Leonard Duresea, A/3c, Air Police Section, 747th AC & W Squadron.

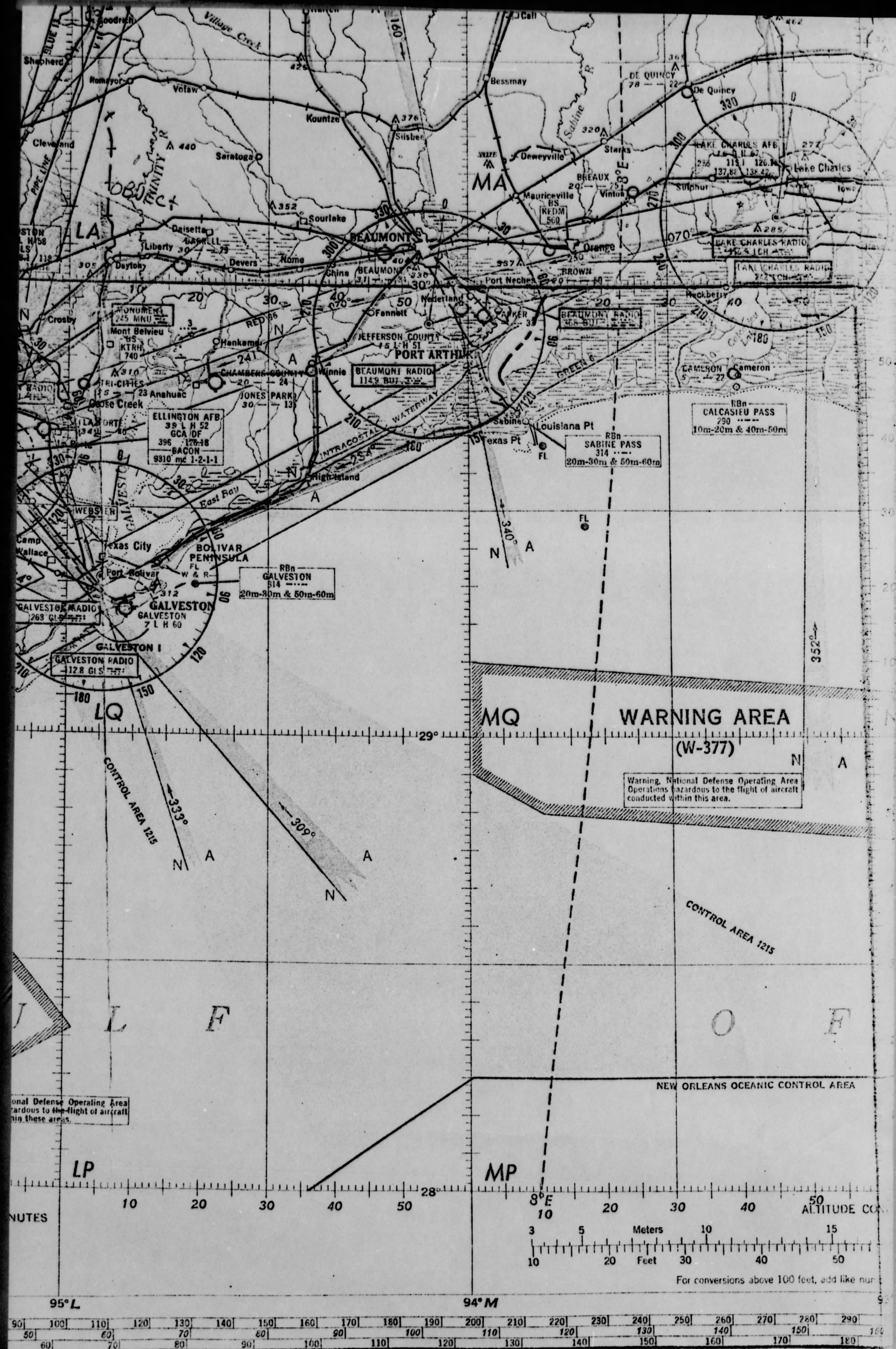
On the 23 March 1953 between the hours of 2030 and 2200 while on duty at the Gate House, I noticed in the sky Northwest of the site, an object oval in shape that gave off light the color of a star. I could not identify the object, but it resembled somewhat a happening that occurred approximately five nights before; however on the first night the object possessed more characteristics. The object traveled at an unstable rate of speed and the light flashed on and off. It seemed to stop at scattered intervals and it could not be traced after entering a path of light given off by a search light.

The happenings that occurred on the first night I could not a-credit to any source. The happenings that occurred on the 23 March I supposed to be the result of the weather station behind the site.

Leonard Duresea Jr.
LEONARD DURESEA JR
A/3c ; AF-18 419 404
Air Policeman

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DOD DIR 5200.10

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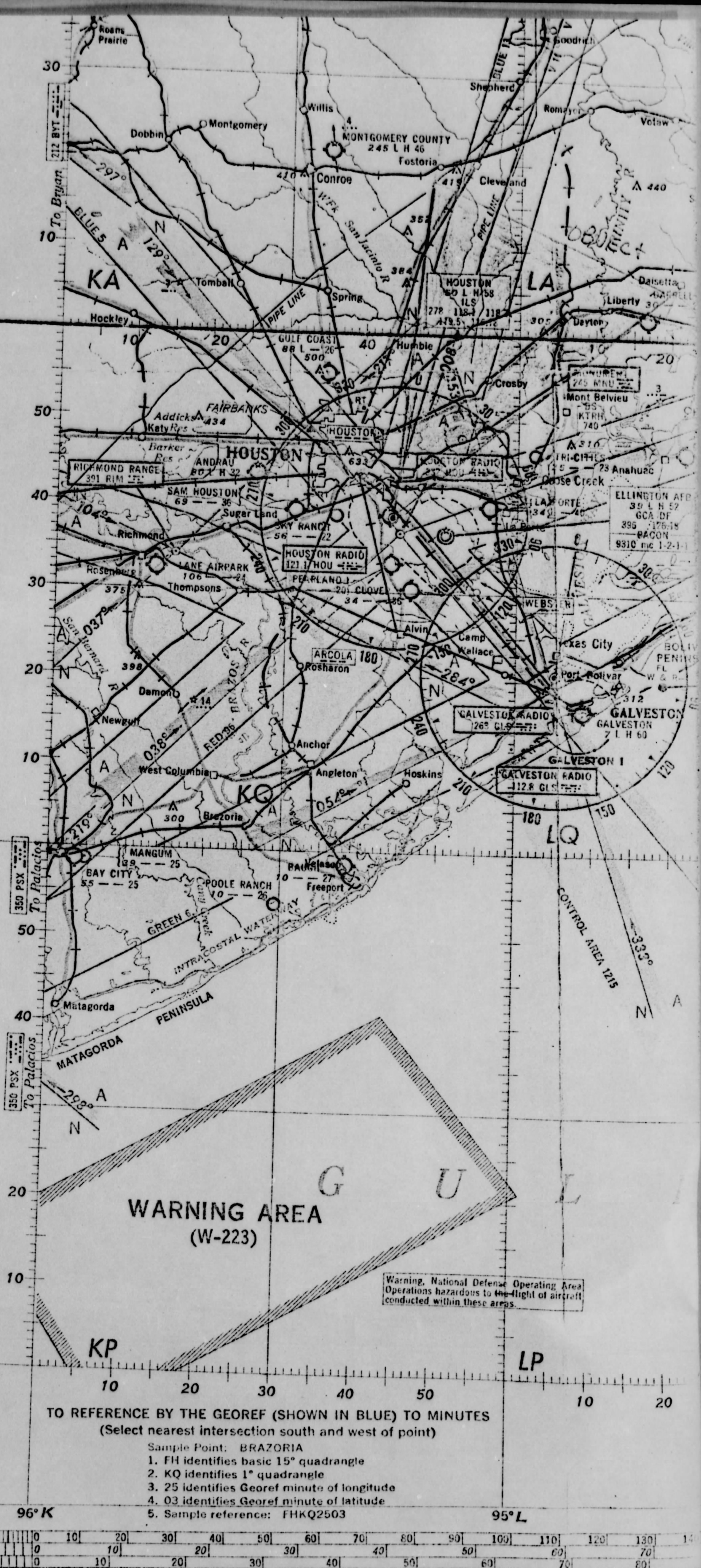


FJ
A
30°

Q
29°

P
28°
(Joins 469)

Area Object was sighted in



(468)

PRICE 25 CENTS

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.

INCL 3-1062

AERONAUTICAL CHART SUPPLY

To insure that the airman has the latest information available, U. S. World Aeronautical Charts are revised at six-month periods and the Alaskan World Aeronautical Charts are revised at twelve-month periods. The time of the next scheduled printing is shown on the face of the chart below the date of the aeronautical information.

Chart users are advised to check the list Dates of Latest Prints on display with authorized agents.

CIVIL CHART SUPPLY

Authorized agents for the sale of aeronautical charts have been appointed at certain airports and principal cities throughout the United States. The charts may also be obtained from the Director, U. S. Coast and Geodetic Survey, Washington 25, D. C.

MILITARY CHART SUPPLY

(Ref: AF Reg. 67-3)

1. Aeronautical charts, maps and publications distributed by the USAF Aeronautical Chart and Information Service are indexed or listed in the current edition of the USAF "Catalog of Aeronautical Charts and Related Publications."

2. Requisitioning.

a. Outside Continental United States:

- (1) USAF activities are to submit requisitions thru the supply channels designated by the Theater Commander for maintenance and distribution of aeronautical charts and maps.
- (2) Theater supply facilities are to submit requisitions for replenishment of stocks of aeronautical charts and maps thru channels to USAF Aeronautical Chart and Information Service, Washington 25, D.C.

b. Within Continental United States: Requisitions from USAF activities within Continental United States are to be submitted to Commanding Officer, Aeronautical Chart Plant, Attn: Distribution Division, 2nd and Arsenal Sts., St. Louis 18, Mo. Except when emanating from an Air Force, Wing, or Command Headquarters, requisitions are to bear the signature or approval by indorsement of the Base or Station Operations Officer. Quantities of charts and maps requested are to be such as to assure the maintenance of a 30-day supply at all times but not to exceed a 60-day supply.

3. Requirements for Special Purpose Maps and Charts.

a. Maps and charts for special purposes, specific missions, and also those maps and charts published by other government agencies, which are not listed in the principal types of aeronautical charts in the current edition of the USAF "Catalog of Aeronautical Charts and Related Publications," should be requisitioned from USAF Aeronautical Chart and Information Service, Washington 25, D.C. Charts will be furnished, if available, when sufficiently identified in requisitions as to name or number, scale, projection and publisher.

b. Information regarding cloth reproduction of certain selected aeronautical charts and maps may be obtained, on request, from: USAF Aeronautical Chart and Information Service, Washington 25, D. C.

4. Obsolete Charts.

Aeronautical charts rendered obsolete-for-air by a new edition, when not practicable to correct for conformity with new edition, are to be salvaged if feasible, or else destroyed. Disposition by salvage or destruction is to be made in accordance with provisions of AFR 205-1. New editions of charts available are announced in the USAF Aeronautical Chart and Information Service Bulletin published semimonthly.

CORRECTION INSTRUCTIONS

1. The Coast and Geodetic Survey is making every effort to furnish the user with accurate charts. The user will materially assist in this effort by marking corrections of aeronautical information, drainage, relief and cultural features (roads, canals, power lines, etc.) on the face of the chart, on an overlay of the area, or under "Remarks" below. In reporting elevation corrections, state method used by observer in making the determination.

- a. Mark correction on face of chart or under "Remarks" below.
- b. Fold chart along regular fold lines, but with back out.
- c. Make an extra fold along dotted line and staple at points so marked.
- d. Fill in the return address and drop the chart in any U.S. mail box. Postage is not required.

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OFFICIAL BUSINESS
PERMIT NO. 1009

*Indicates that charts in the charts will be

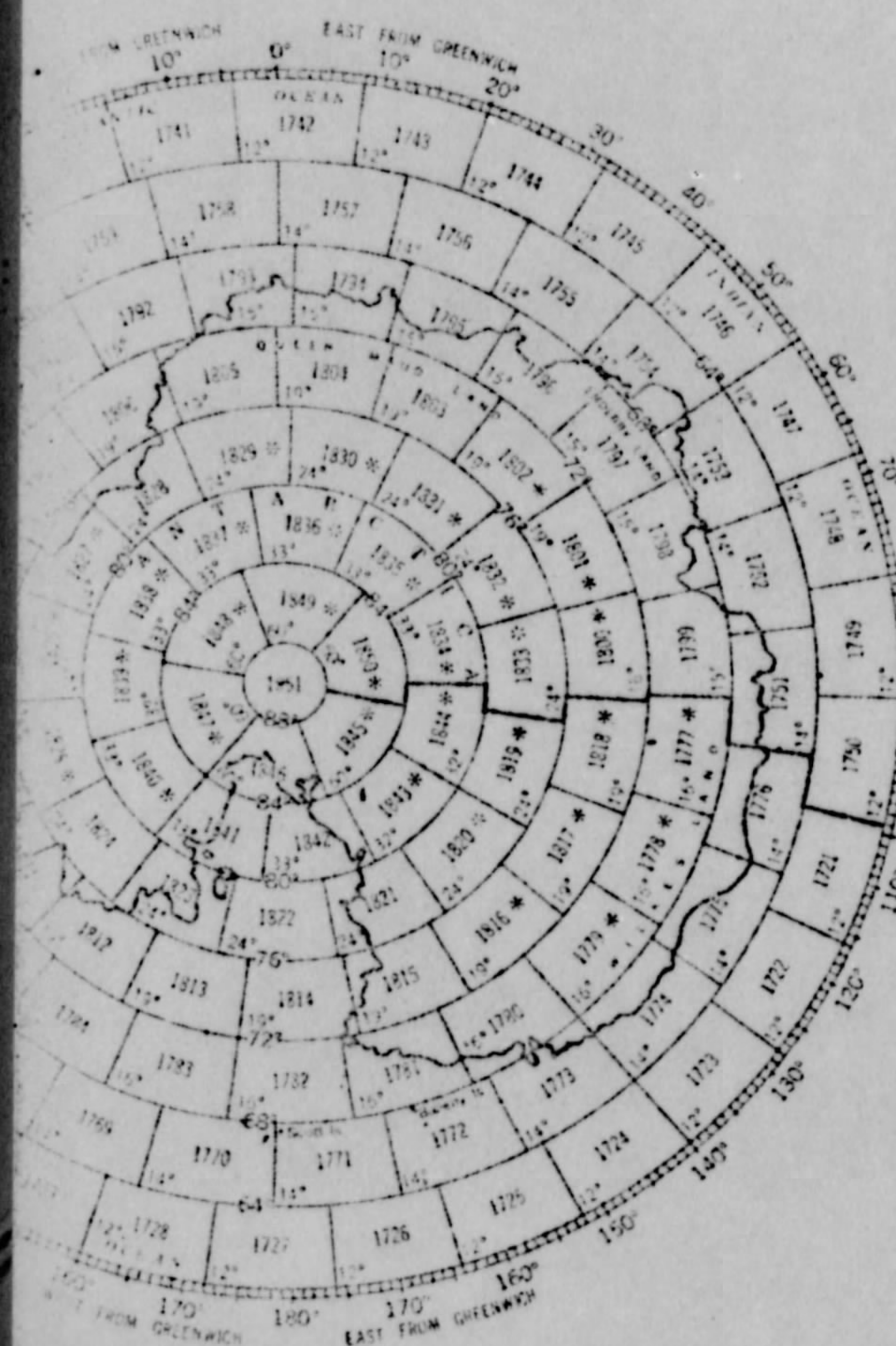
ALAN



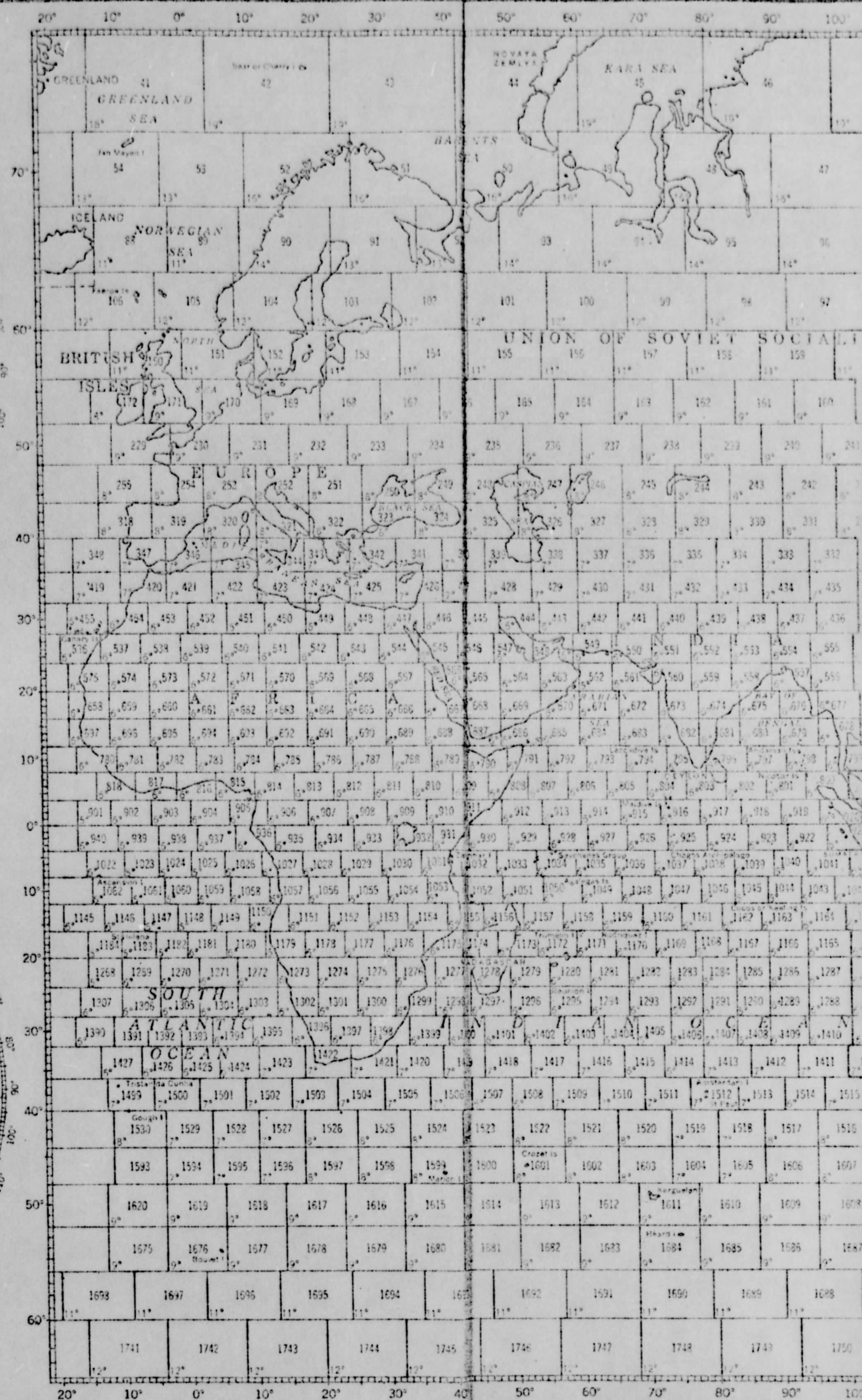
NORTH POLAR AREA



NORTH POLAR AREA



There is not sufficient information available to compile a chart at a scale of 1:1,000,000. Requisitions for these charts should be made with the appropriate Universal Water Chart.



WORLD AER

AERONAUTICAL SYMBOLS

AERODROMES

Next with facilities

WATER



Civil



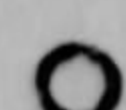
Joint Civil and Military



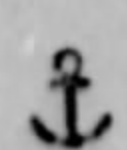
Military

Aerodromes with emergency or no facilities

LAND



Landing Area



Sheltered Anchorage

WATER

All radio facility data as lower frequencies, Methods of indicating specific voice and CW call

Radio Range (With voice)

Radio Range (Without voice)

Nondirectional Radiobeacon (With voice)

Nondirectional Radiobeacon (Without voice)

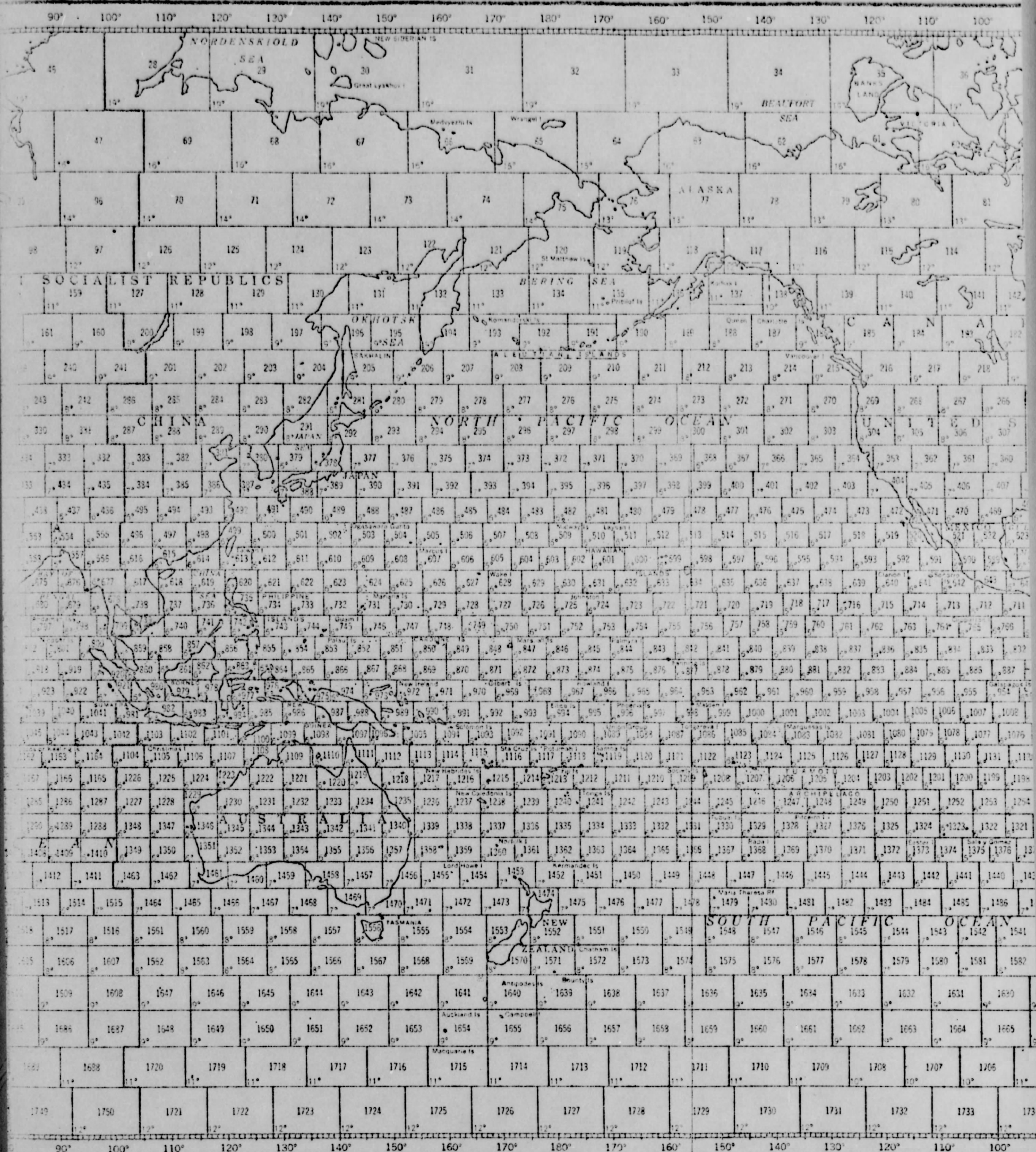
AERODROME DATA AND LANDING FACILITIES INFORMATION

LAND

WATER

Elevation in feet

Elevation in feet



AERONAUTICAL CHART INDEX

Scale of Series 1:1,000,000

Charts published ☐

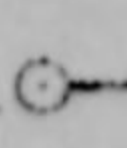
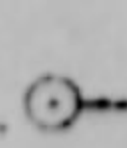
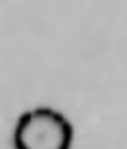
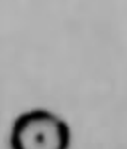
Charts not published ☐

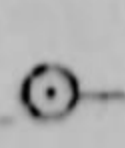
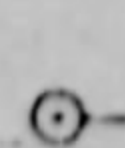
AERONAUTICAL SYMBOLS

Radio facility data are printed in blue with the exception of certain LF/MF facilities such as tower frequencies, radio ranges and associated airways, which are printed in magenta.

Voice and CW calls are shown below

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

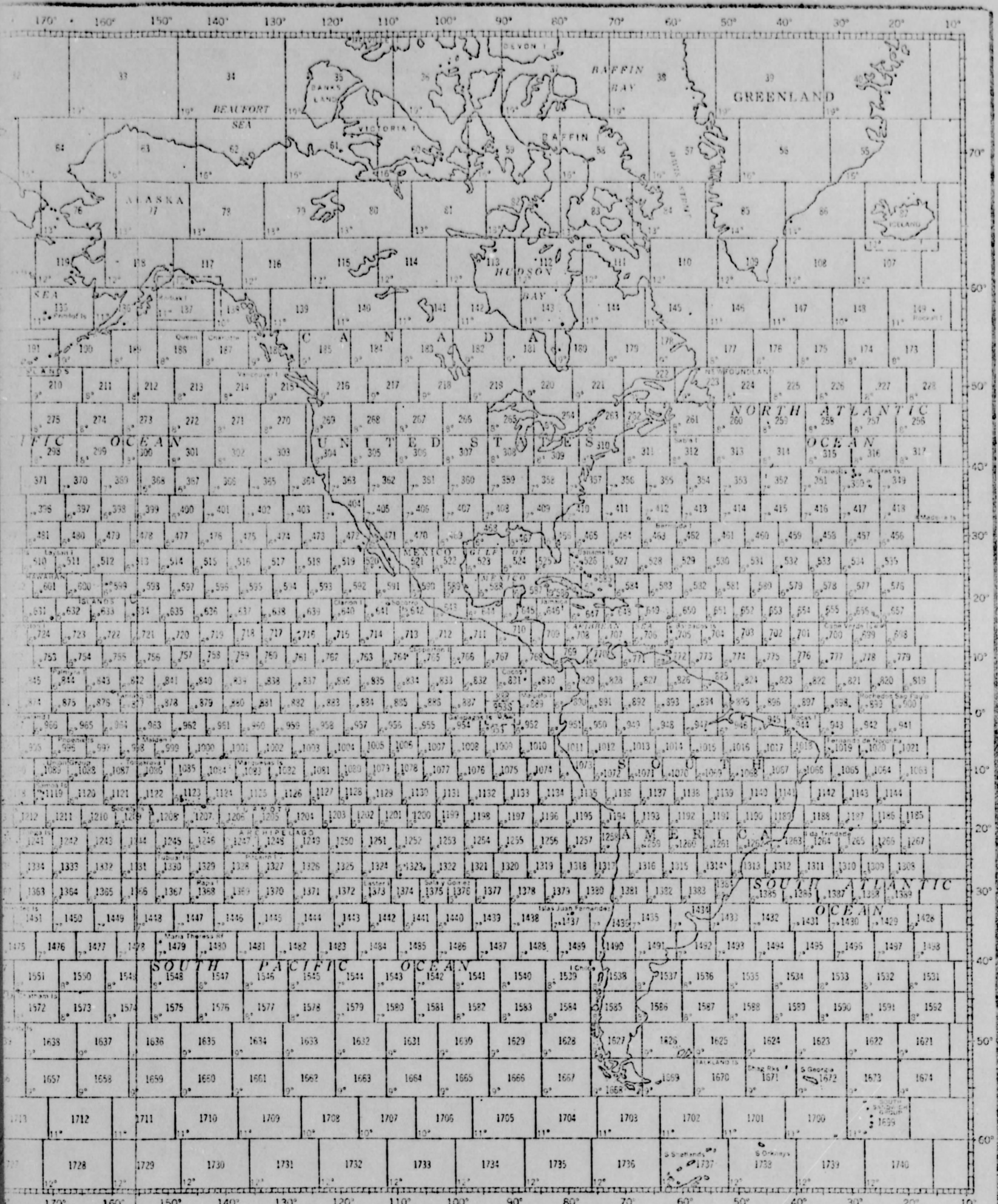
			
BALTIMORE RADIO 257 BAL	EGLIN RANGE 209 VPS	DOUGLAS RADIO 251 DOW	DIXIE 388 DXE
Radio Communication Station (With voice)	Radio Communication Station (Without voice)	Radio-Broadcasting Station	Radar Beacon (Racon)

			
CS GOWEN RADIO 4470	CS KAZAN 5200 CKX	BS CFRB 1019	RACON 3256 2-1-2
Radio Communication Station (With voice)	Radio Communication Station (Without voice)	Radio-Broadcasting Station	Radar Beacon (Racon)

TOPOGRAPHIC

CITIES AND TOWNS

- Metropolitan Areas **NEW YORK**
- Large Cities **RICHMOND**
- Cities **ARLINGTON**
- Small Cities **Frederick**
- Large Towns **Chesapeake**
- Towns & Villages **St. Michaels**



UNIVERSAL WATER CHARTS
Universal Water Charts (Scale 1:1,000,000; size 29 x 22 inches) covering 4° of lat. have been published for use in place of the World Aeronautical Charts in water areas. The user must insert the appropriate long. values for the particular area desired. Water tint is printed within the normal geographical limits and the chart is designed for use in both north and south latitudes.
NOTE: Requisition these charts by name and latitude interval.
Example: WAC-225 would be **WATER-45/52**

TOPOGRAPHICAL SYMBOLS

CITIES AND TOWNS

- Metropolitan Areas **NEW YORK**
- Large Cities **RICHMOND**
- Cities **ARLINGTON**
- Small Cities **Freehold**
- Large Towns **Corville**
- Towns & Villages **Arcola**

HIGHWAYS AND ROADS

- Dual Lane and Super Highways
- Primary Roads
- Secondary Roads
- Trails
- U. S. Road Markers
- National, State or Provincial Road Markers
- Road Names

RELIEF FEATURES

- b. Fold chart along regular fold lines, but with back out.
c. Make an extra fold along dotted line and staple at points so marked.
d. Fill in the return address and drop the chart in any U.S. mail box. Postage is not required.

Remarks:

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The Director
U.S. Coast and Geodetic Survey
Washington, 25, D.C.

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U. S. DANGER AREAS ON WORLD AERONAUTICAL CHART 468

NO.	NAME	ACTIVITY	USING AGENCY	ALTITUDE	TIME
W-92	New Orleans	Gunnery, Bombing, Rocket Firing	NAS New Orleans, La.	To 20,000	Unltd.
C-137	New Orleans	Acrobatics	NAS New Orleans, La.	4,000-20,000	0800-1630
D-158	Pearl River	Strafing, Rocket Firing, Glide and Dive Bombing	NAS New Orleans, La.	Unltd.	0800-1630
W-223	Matagorda Island	Aerial Gunnery	8th Air Force, Carswell AFB, Tex.	To 50,000	Days
D-229	Camp Polk	Field Artillery Firing	4th Army, Camp Polk, La.	To 50,000	Unltd.
D-230	Camp Polk	Field Artillery Firing	4th Army, Camp Polk, La.	To 50,000	Unltd.
W-377	Gulf of Mexico	Air-to-Air Gunnery by Jet Aircraft	Tactical Air Command	To 40,000	Days

Altitude given in feet. AR - Airspace Reservation (Prohibited) C - Caution D - Danger W - Warning 8-12-52

No person shall operate an aircraft within an Airspace Reservation or Danger Area unless permission for such operation has been issued by appropriate authority.

Aircraft are not restricted from flying through Caution Areas, however, extreme caution should be exercised by pilots flying through such areas.

*Indicates
charts in
charts w

BARGE
900
Airports
CCA
278

Rotating

Rotating

Rotating

Flashing

f - Fixed
Fl - Flash

Obstructed
(Number
above)

Group of

Prominent

Mooring

Isogonic

Restrict

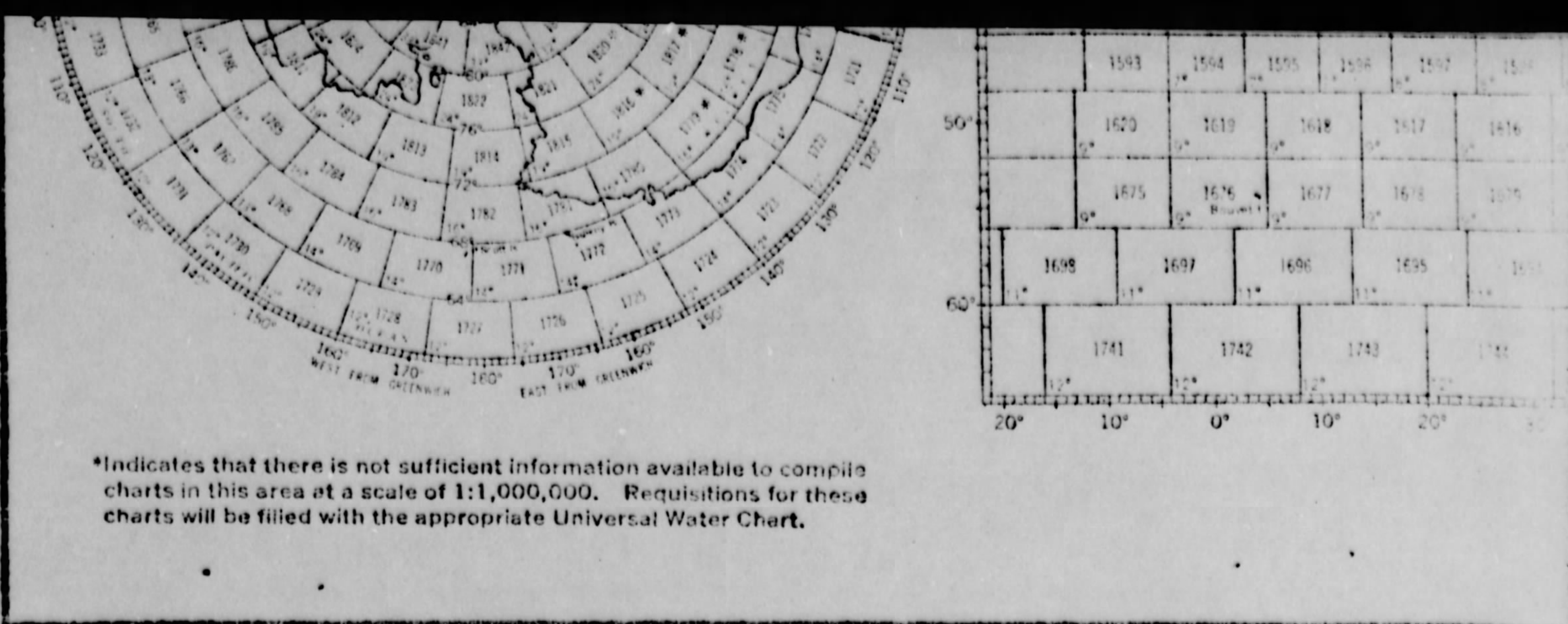


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AERONAUTICAL SYMBOLS

AERODROMES

Aerodromes with facilities

LAND



WATER



Civil

Joint Civil and Military

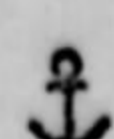
Military

Aerodromes with emergency or no facilities

LAND



WATER



Landing Area

Sheltered Anchorage

AERODROME DATA AND LANDING FACILITIES INFORMATION

LAND

WATER

BARGERSVILLE
908 L H 41
Airport of entry
GCA SYSTEM
278 126.18

908 Elevation in feet
L Minimum lighting
H Hard surfaced runway
41 Length of longest runway
in hundreds of feet

00 Elevation in feet
L Minimum lighting
S Normal sheltered take-off area
62 Length of longest runway
in hundreds of feet

NAS ANACOSTIA
00 L S 62
2870

The facility code character is replaced by a dash if specific information is not available or if the facility itself is not available.

GCA SYSTEM - Ground Control Approach System. Other controlled approach systems by appropriate abbreviation.
278 126.18 2870 - Control tower transmitting frequencies

AIR NAVIGATION LIGHTS

Rotating Light ----- ★

Rotating Light (With flashing code lights) ----- ★

Rotating Light (With course lights and site number) ----- 12 ★

Flashing Light ----- FI ★

Flashing Light (With code) ----- FI

Lightship -----

Marine Light ----- Occ WR

F--Fixed

Qk FI--Quick Flashing

Occ--Occulting

Gp--Group

W--White

B--Blue

SEC--Sector

FI--Flashing

IQk FI--Interrupted Quick Flashing

Alt--Alternating

R--Red

G--Green

(U)--Unwatched

sec--Second

Marine lights are white unless colors are indicated; alternating lights are red and white unless otherwise indicated

MISCELLANEOUS

Obstruction ----- 1108

(Numerals in italics indicate elevation above sea level of obstruction top.)

Group Obstruction -----

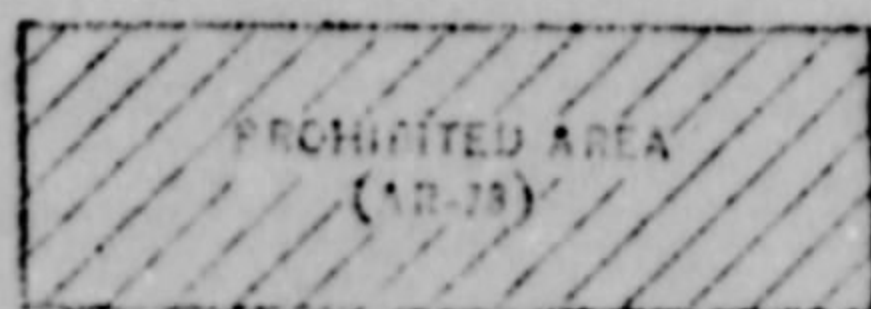
Prominent Transmission Line -----

Mooring Mast -----

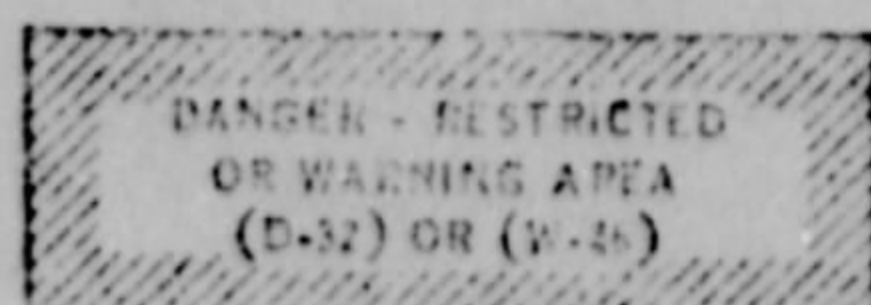
Isogonic Line ----- -4°E--

Values for 1950

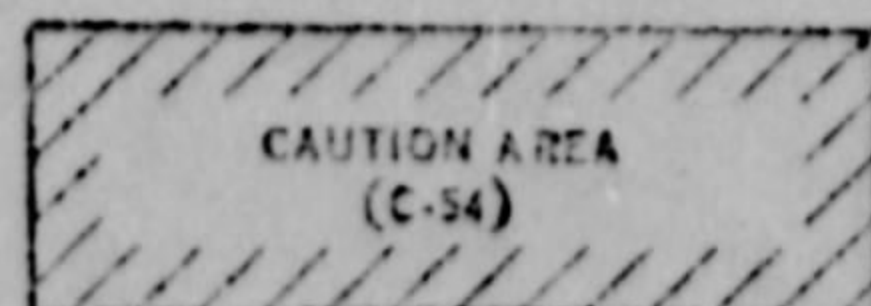
Restricted areas are numbered, and are indicated on the charts as follows:



Prohibited Area -- Flight of aircraft prohibited except by specific authority of using



Danger, Restricted or Warning Area -- Invisible hazards to air navigation



Caution Area -- Visible hazards to air navigation

Reporting Point (Compulsory) -----

Reporting Point (Non-compulsory) -----

Ocean Station Vessel (Normal position) -----

International Boundary -----
(Closed to passage of aircraft except through air corridor)

468

ALTITUDE	TIME
To 20,000	Unltd.
4,000-20,000	0800-1630
Unltd.	0800-1630
To 50,000	Days
To 50,000	Unltd.
To 50,000	Unltd.
To 40,000	Days

W - Warning 8-19-52

has been issued by

ing through such areas.

1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590
1677	1678	1679	1680	1681	1682	1683	1684	1685	1686	1687	1688	1689	1690	1691	1692	1693	1694	1695	1696	1697	1698	1699	1700	1701	1702	1703	1704	1705
1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668
1733	1734	1735	1736	1737	1738	1739	1740	1741	1742	1743	1744	1745	1746	1747	1748	1749	1750	1751	1752	1753	1754	1755	1756	1757	1758	1759	1760	1761
1792	1793	1794	1795	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816	1817	1818	1819	1820
1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858
1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
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1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
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2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713
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3843	3844	3845	3846	3847	3848	3849	3850	3851	3852	3853	3854	3855	3856	3857	3858	3859	3860	3861	3862	3863	3864	3865	3866	3867	3868	3869	3870	3871
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4148	4149	4150	4151	4152	4153	4154	4155	4156	4157	4158	4159	4160	4161	4162	4163	4164	4165	4166	4167	4168	4169	4170	4171	4172	4173	4174	4175	4176
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4286	4287	4288	4289	4290	4291	4292	4293	4294	4295	4296	4297	4298	4299	4300	4301	4302	4303	4304	4305	4306	4307	4308	4309	4310	4311	4312	4313	4314
4355	4356	4357	4358	4359	4360	4361	4362	4363	4364	4365	4366	4367	4368	4369	4370	4371	4372	4373	4374	4375								

WORLD AERONAUTICAL CHART INDEX

Scale of Series 1:1,000,000

AERONAUTICAL SYMBOLS

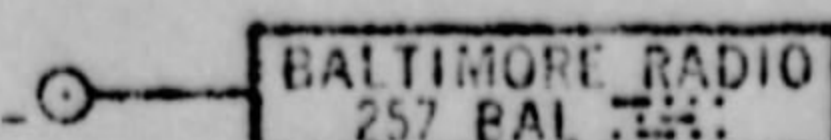
RADIO FACILITIES

All radio facility data are printed in blue with the exception of certain LF/MF facilities such as tower frequencies, radio ranges and associated airways, which are printed in magenta.

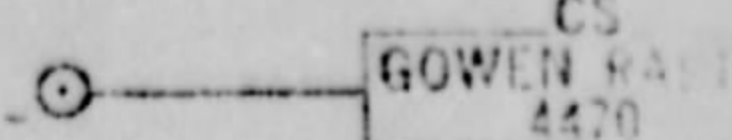
Methods of indicating specific voice and CW calls are shown below

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

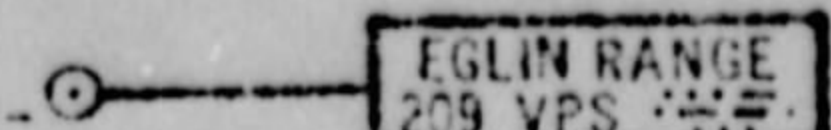
Radio Range.
(With voice)



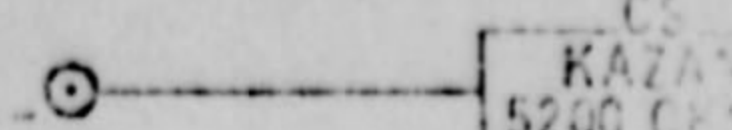
Radio Communication Station
(With voice)



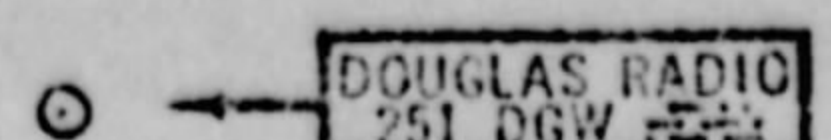
Radio Range
(Without voice)



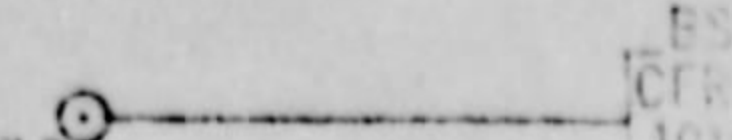
Radio Communication Station
(Without voice)



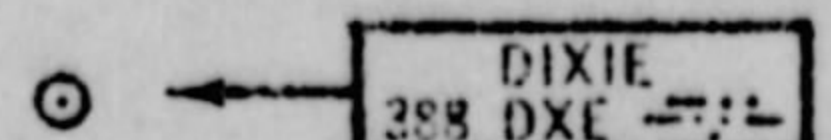
Nondirectional Radiobeacon (With voice)



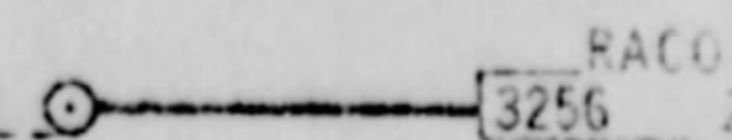
Radio Broadcasting Station



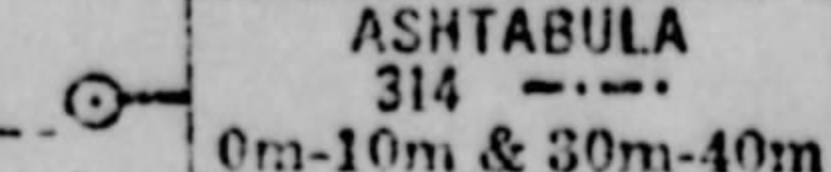
Nondirectional Radiobeacon (Without voice)



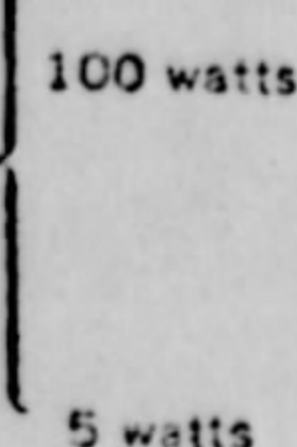
Radar Beacon (Racon).



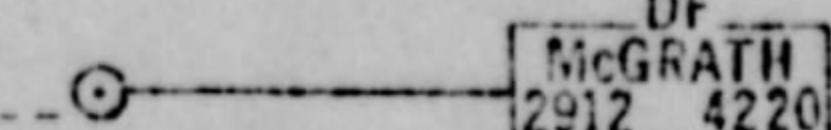
Marine Radiobeacon



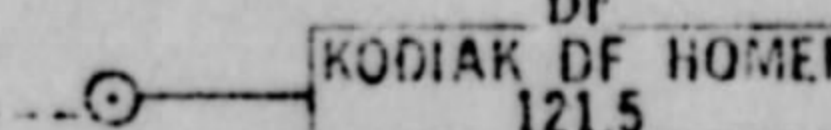
Radio Fan Marker Beacons-



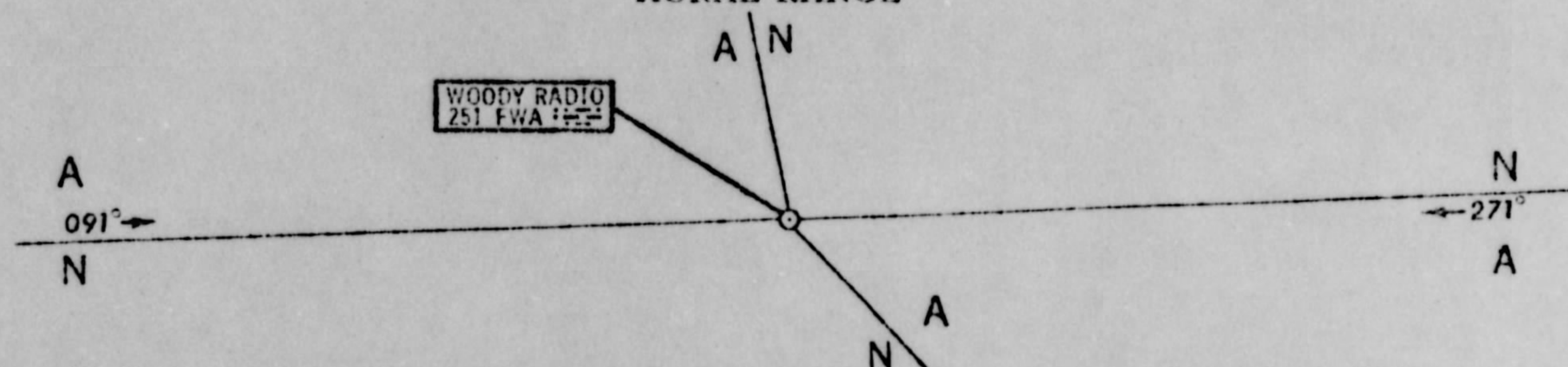
Radio Direction Finder (Without voice)



Radio Direction Finder (With voice)

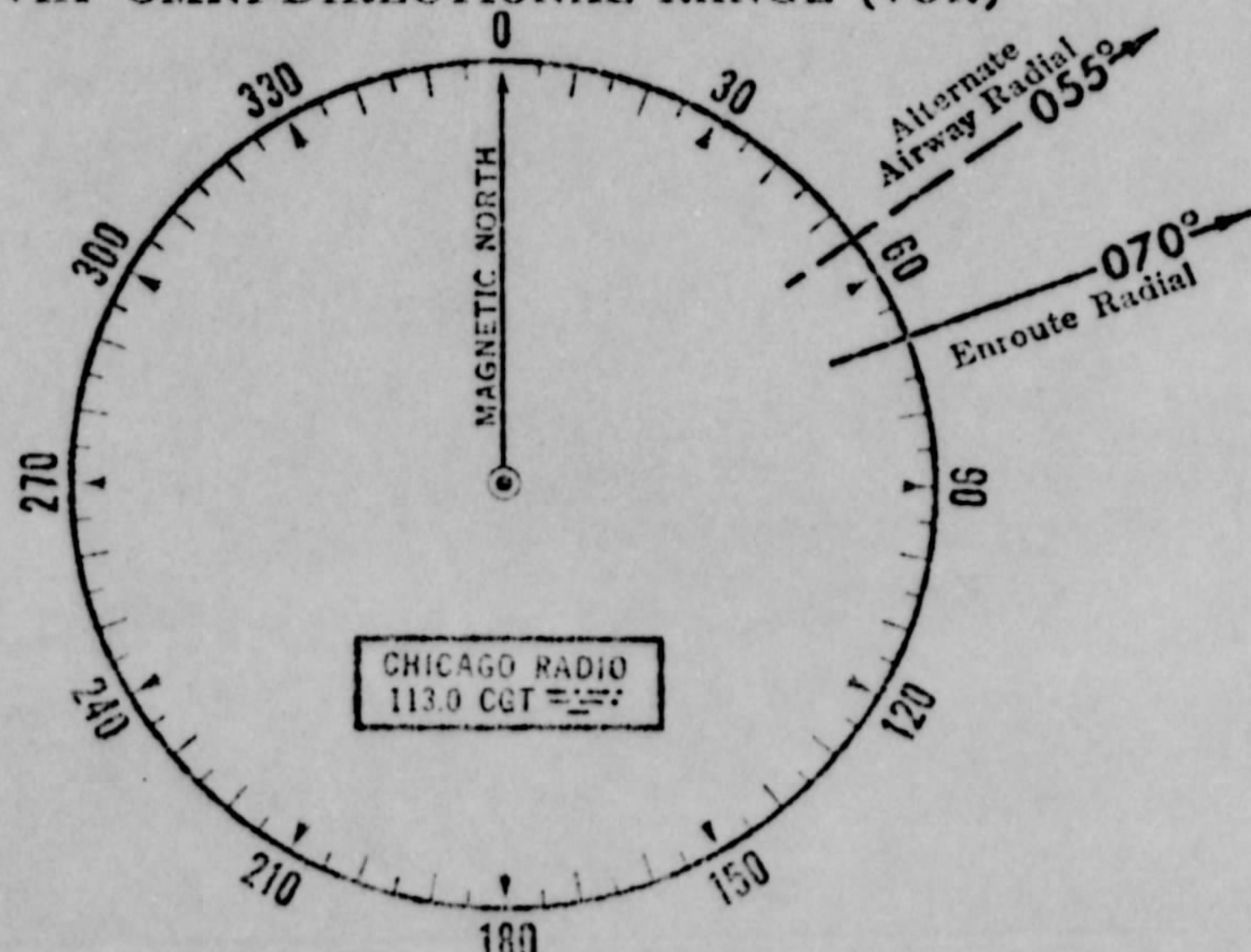


AURAL RANGE



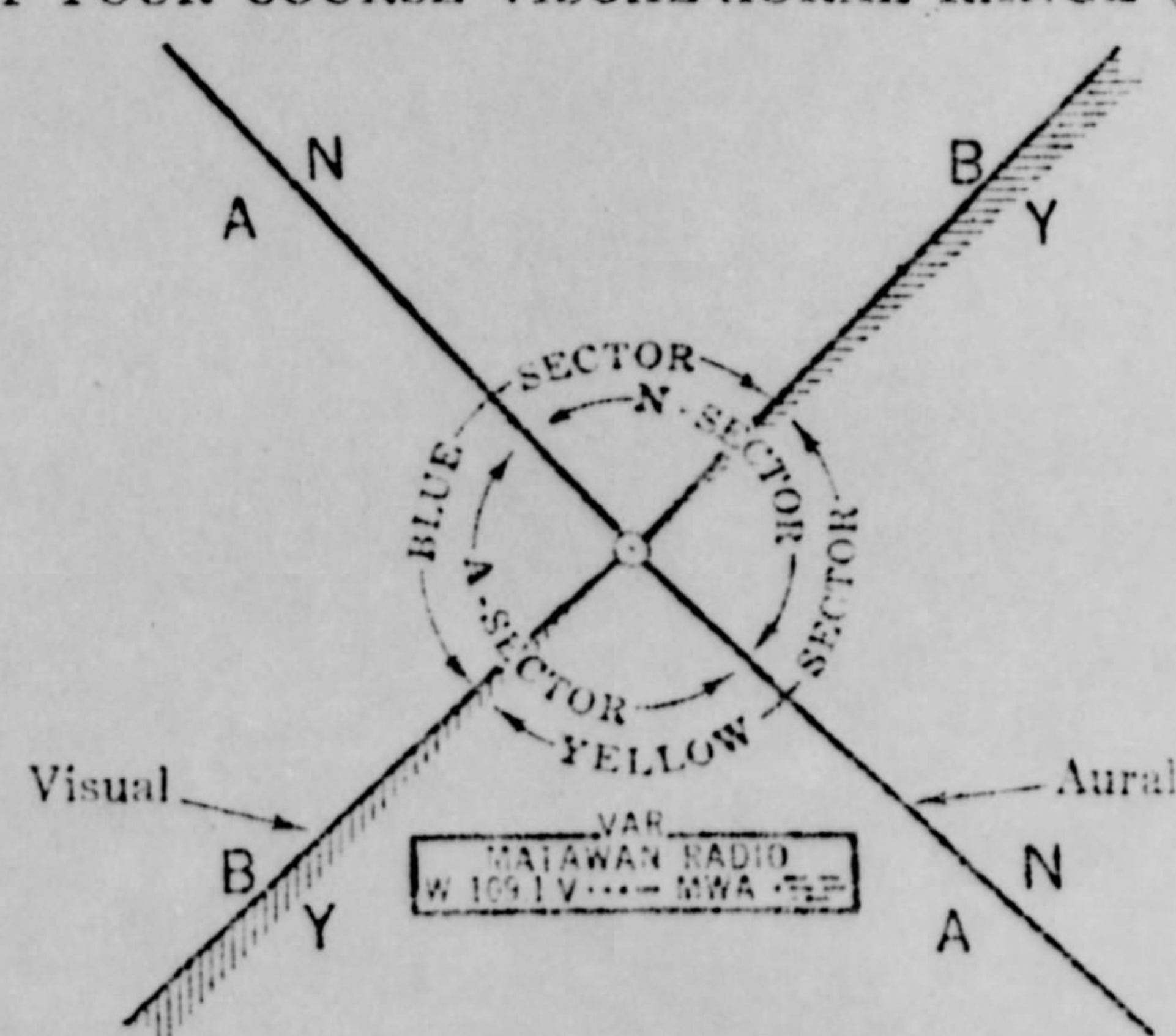
The heavy line indicates the "N" quadrant. The bearings shown are magnetic and the magnetic variation at the position of the ground station is used for computing them.

VHF OMNI-DIRECTIONAL RANGE (VOR)



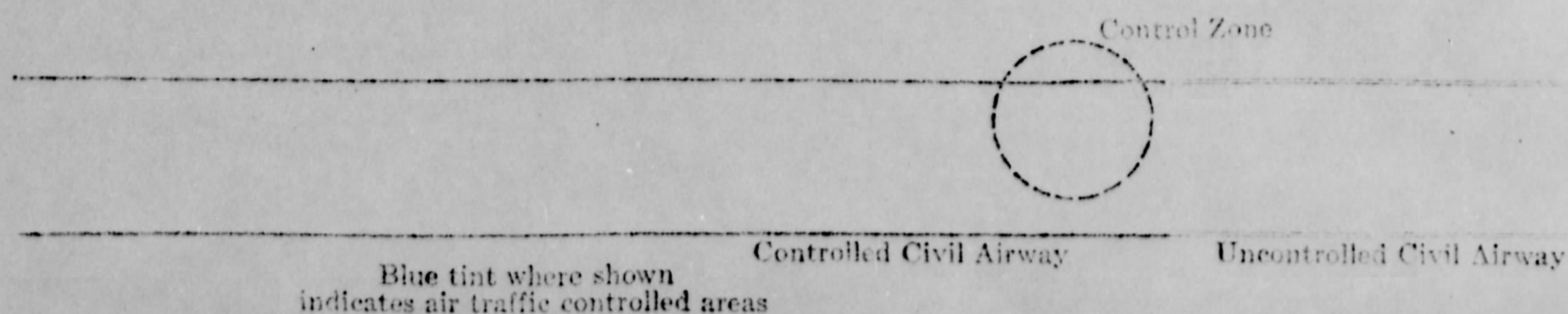
Bearings are magnetic from the station.
Radius of circle is 15 nautical miles.

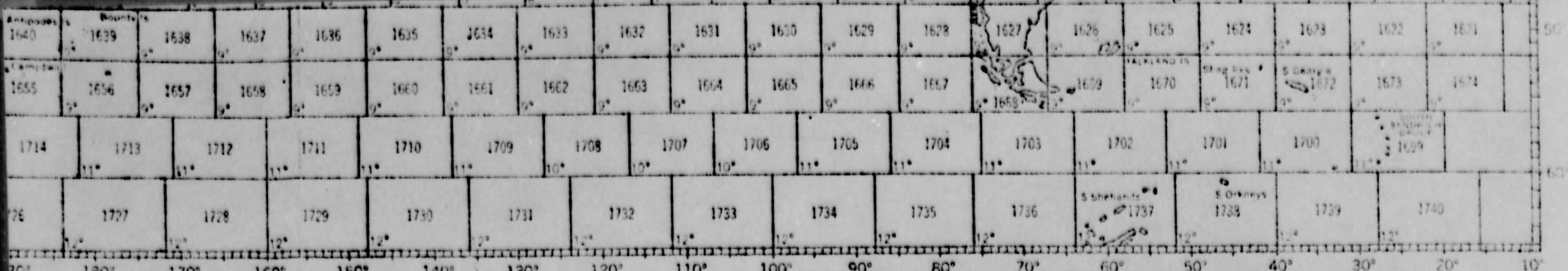
VHF FOUR COURSE VISUAL-AURAL RANGE (VAF)



Letter preceding frequency in box indicates channel identification.

AIR TRAFFIC CONTROL





DEX

Charts published ☐
Charts not published ☐

UNIVERSAL WATER CHARTS
Universal Water Charts (Scale 1:1,000,000; size 29 x 22 inches) covering 4° of lat. have been published for use in place of the World Aeronautical Charts in water areas. The user must insert the appropriate long. values for the particular area desired. Water tint is printed within the normal geographical limits and the chart is designed for use in both north and south latitudes.
NOTE: Requisition these charts by name and latitude interval.
Example: WAC-225 would be **WATER-48/52**

TOPOGRAPHICAL SYMBOLS

CITIES AND TOWNS

- Metropolitan Areas **NEW YORK**
- Large Cities **RICHMOND**
- Cities **ARLINGTON**
- Small Cities **Freehold**
- Large Towns **Corville**
- Towns & Villages **Arcola**

HIGHWAYS AND ROADS

- Dual Lane and Super Highways
- Primary Roads
- Secondary Roads
- Trails
- U. S. Road Markers **60**
- National, State or Provincial Road Markers **37**
- Road Names **ALASKA HIGHWAY**

RELIEF FEATURES

- Contours { Reliable, Approximate, Depression }
- Levees or Eskers
- Hachures
- Bluffs, Cliffs & Escarpments
- Sand { Dunes, Areas, Ridges }
- Lava Flow

HYDROGRAPHIC FEATURES

- Swamps & Marshes
- Tidal Flats (Exposed at low tide)
- Danger Line
- Rocks Awash
- Shoals (Exposed at low tide)
- Springs
- Wells & Water Holes
- Reefs, Coral & Rocky Ledges (Awash at low tide)
- Streams & Rivers { Perennial, Intermittent, Probable or Unsurveyed, Braided }
- Intermittent Lakes (blue stipple)
- Drainage Ditches
- Canals { In use, Abandoned }
- Dry Lake Beds (brown stipple)
- Sand Deposits in river bed
- Dry Washes (brown stipple)
- Glaciers and Ice Caps

CULTURAL AND MISCELLANEOUS

- Landmarks (with appropriate note) (Numerals indicate elevation above sea level of top)
- Oil Tanks
- Oil Fields
- Dams
- Elevations (In feet) { Highest on chart, Highest on chart is devoid of tint, Highest in a general area, Spot }
- Mines and Quarries
- Mountain Passes
- Lookout Stations (Elevation is base of tower)
- Coast Guard Stations
- Pipe Lines
- Race Tracks or Stadiums
- Stranded Wrecks
- Boundaries { International, State & Provincial }
- Railroads { Abandoned or Under Construction, Single Track, Multiple Track, Sidings & Spurs, Overpass, Underpass }
- Bridges { Railroad, Highway }
- Tunnels { Railroad, Highway }