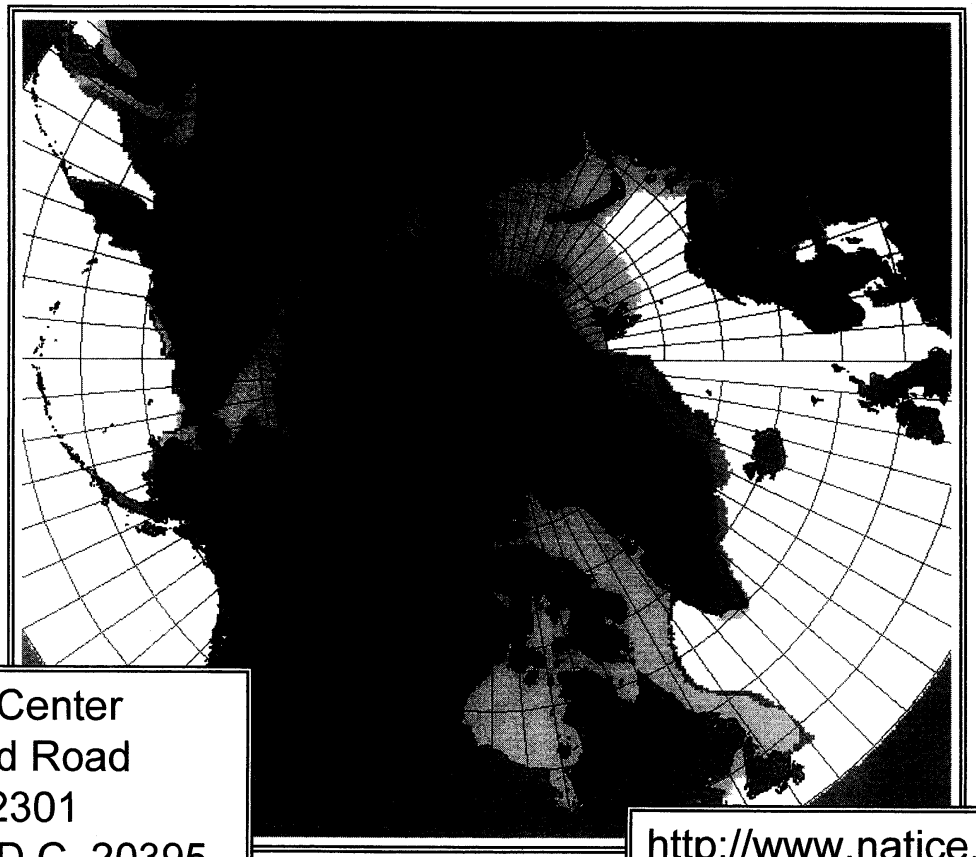
National Ice Center
Arctic Sea Ice Atlas
1996



National Ice Center
4251 Suitland Road
FB4, Room 2301
Washington D.C. 20395

http://www.natice.noaa.gov

PREFACE

The National Ice Center (NIC), under sponsorship of the United States Navy, the United States Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA), provides sea ice analyses encompassing the "Arctic" and the "Antarctic". These analyses continue the data set established under our previous name, the Joint Ice Center. These atlases continue the near real-time integration of remotely sensed data and point observations and differ only in that the Arctic and Antarctic are split into two separate publications per hemisphere per year.

This publication is the "Arctic Sea Ice Atlas" published in hard copy format by the NIC. The atlas contains weekly charts depicting the sea ice extent and coverage in the Northern Hemisphere from the first week of January through the last week of December 1996. Future annual atlases will be available in a digital format on CD-ROM through the National Snow and Ice Data Center (http://www-nsidc.colorado.edu). NSIDC is the official archive center for the NIC.

The NIC uses a wide variety of data sources in the production of sea ice analyses. Table 1 lists the data sources used to produce the Arctic weekly ice analyses contained in this publication. The line types used in the analyses provide metadata information with regard to sensor type. Solid lines depict boundaries derived from: point observations, Defense Meteorological Satellite Program Operational Line Scan (DMSP OLS) and NOAA Advanced Very High Resolution Radiometer (AVHRR) data. Dash-dash-dotted lines depict boundaries derived from DMSP Special Sensor Microwave Imager (SSM/I), and dashed lines depict boundaries derived from forecast models and climatology.

Please direct questions or comments to the NIC Liaison Branch, at phone number (301) 457-5303 extension 311 or 303, facsimile number (301)457-5300, or electronic mail address: liaison@natice.noaa.gov

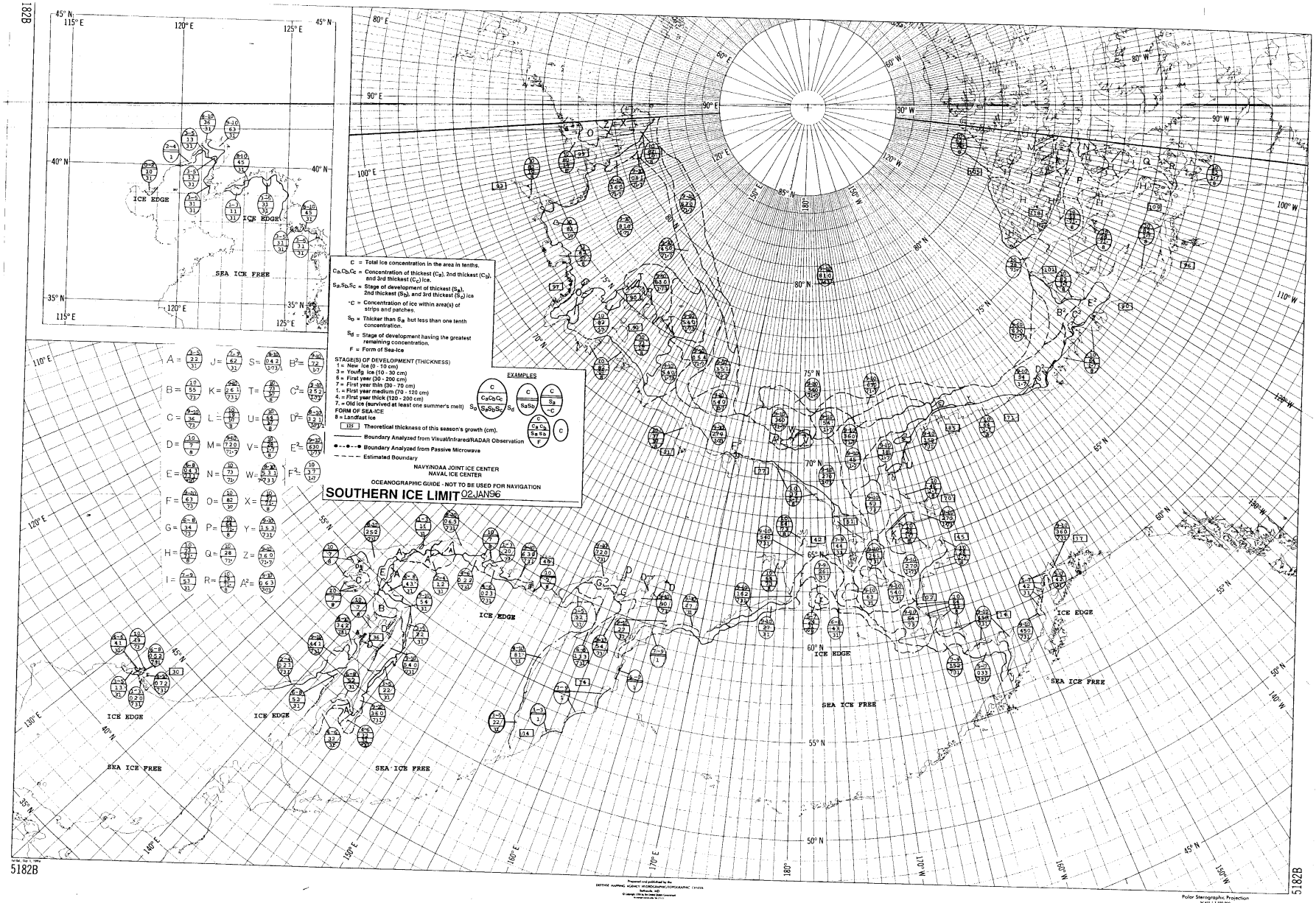
From	To	Sensor Platform	Sensor and Type	Spectral Region	Resolution	Coverage
01-96	12-96	DMSP F-10, 11, 12, 13	OLS Fine: VIS IR SSM/I	0.4 to 1.1 μm 10.2 to 12.8 μm 19.35 and 37GHz	0.55 km 25 km	3,012km 3,012km
01-96	12-96	NOAA 12, 14	AVHRR: HRPT/LAC VIS NrIR IR	0.58 to 0.68 μm 0.72 to 1.10 μm 3.55 to 3.93μm	1.1km at nadir; 2.5km at swath edge	4,000km
01-96	12-96	RADARSAT	AMI SAR	C- Band (5.3 Ghz)	100km	500km

TABLE 1. 1996 Arctic Satellite Data Sources

Abbreviations and Acronyms:

AMI- Active Microwave Sensor
AVHRR- Advanced Very High Resolution Radiometer
cm- centimeter
ERS- Earth Remote Sensing Satellite
GHz- GigaHertz
HRPT- High Resolution Picture transmission
IR- Infrared
km- kilometer
LAC- Local Area Coverage
NIR- Near Infrared
OLS- Operational Linescan System
RADARSAT- Radar Satellite
SAR- Synthetic Aperture Radar
SSM/I- Special Sensor Microwave Imager
μm- micrometer
VIS- Visible
RADARSAT- Radar Satellite
SAR- Synthetic Aperture Radar

Prepared under the authority of Commander, Naval Oceanography Command, Stennis Space Center, MS 39529-5000


C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
*C = Concentration of ice within area(s) of strips and patches.
S_D = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
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FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 02JAN96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
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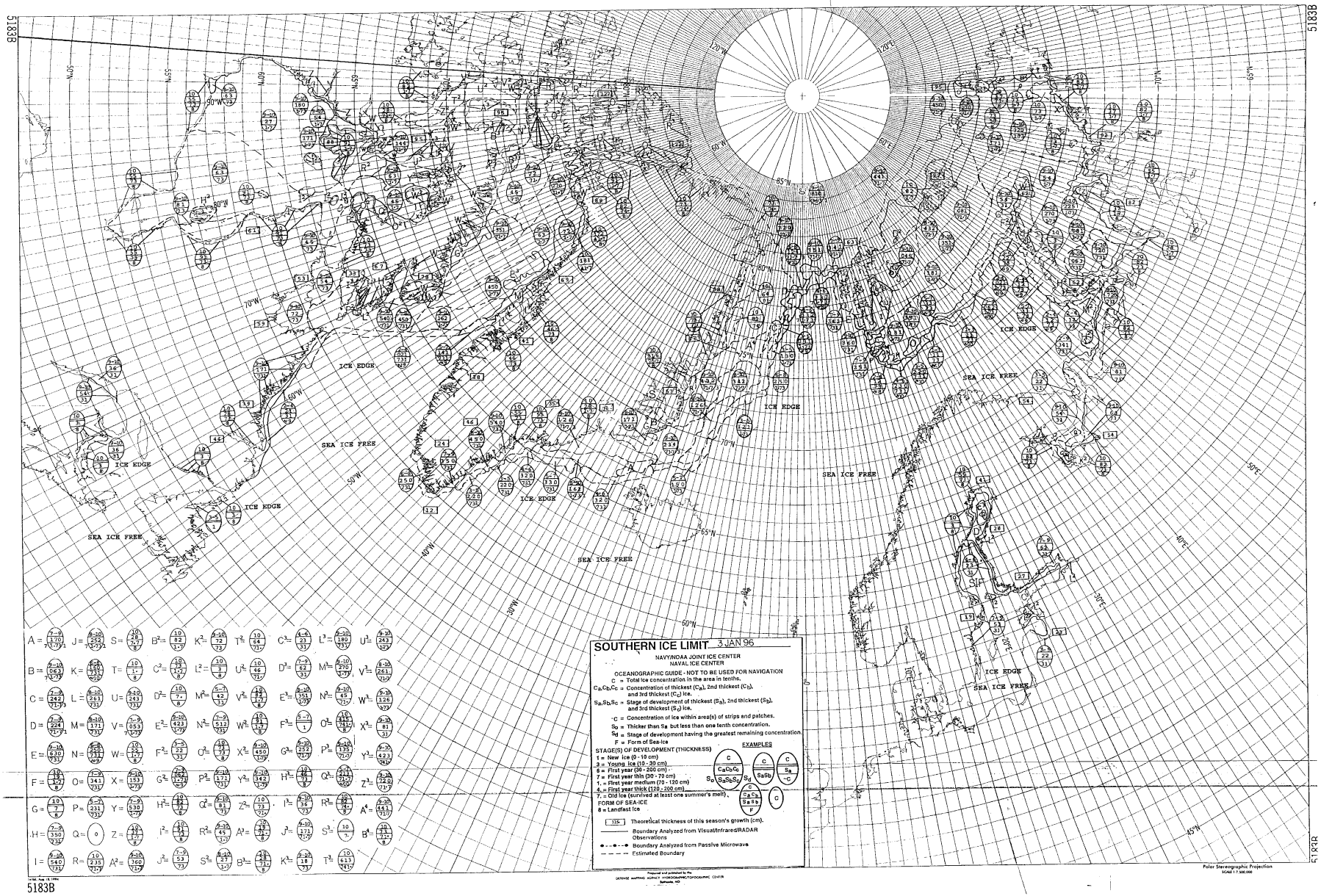
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SOUTHERN ICE LIMIT 3 JAN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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Boundary Analyzed from Visual/Infrared/RADAR Observations
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Estimated Boundary
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
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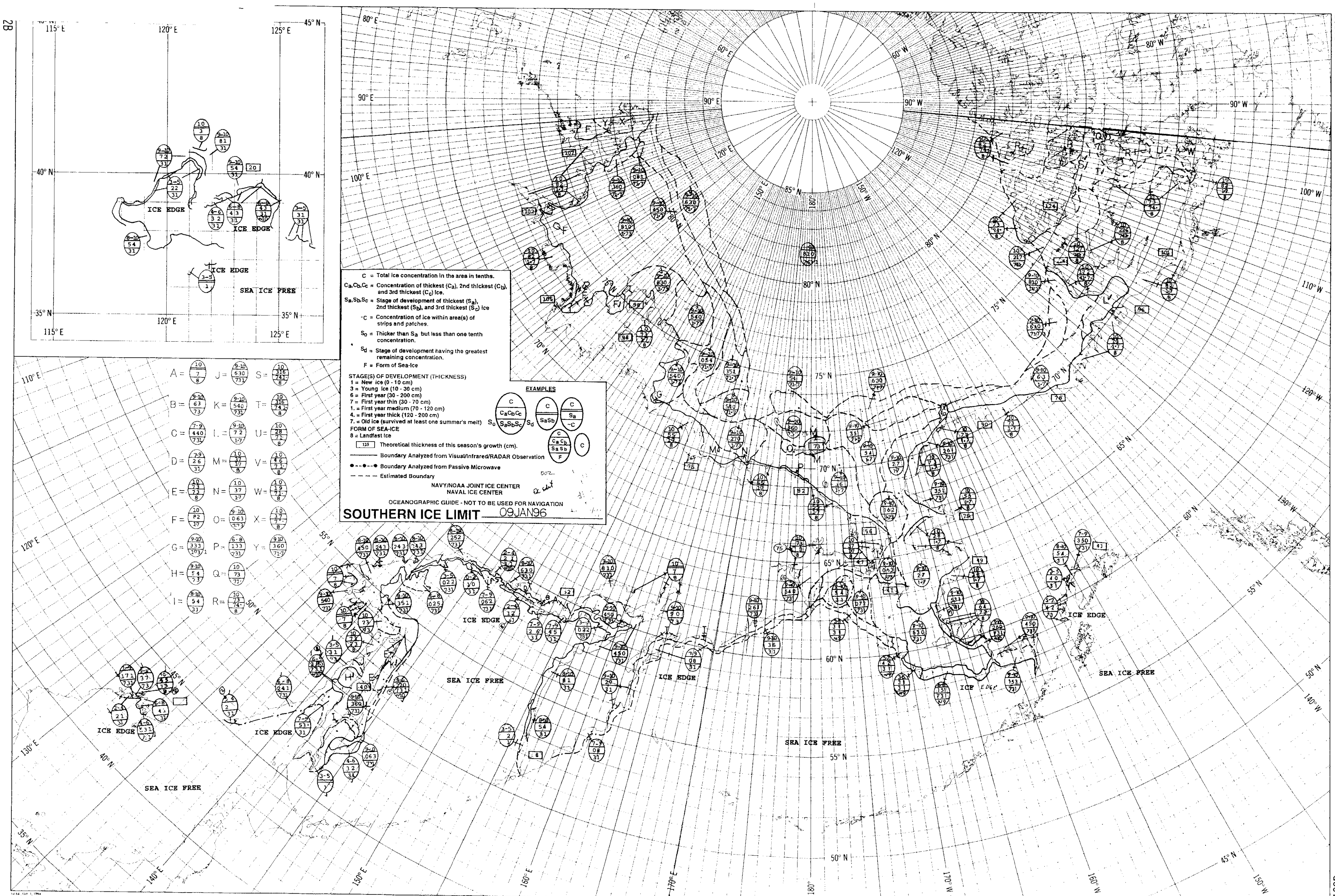

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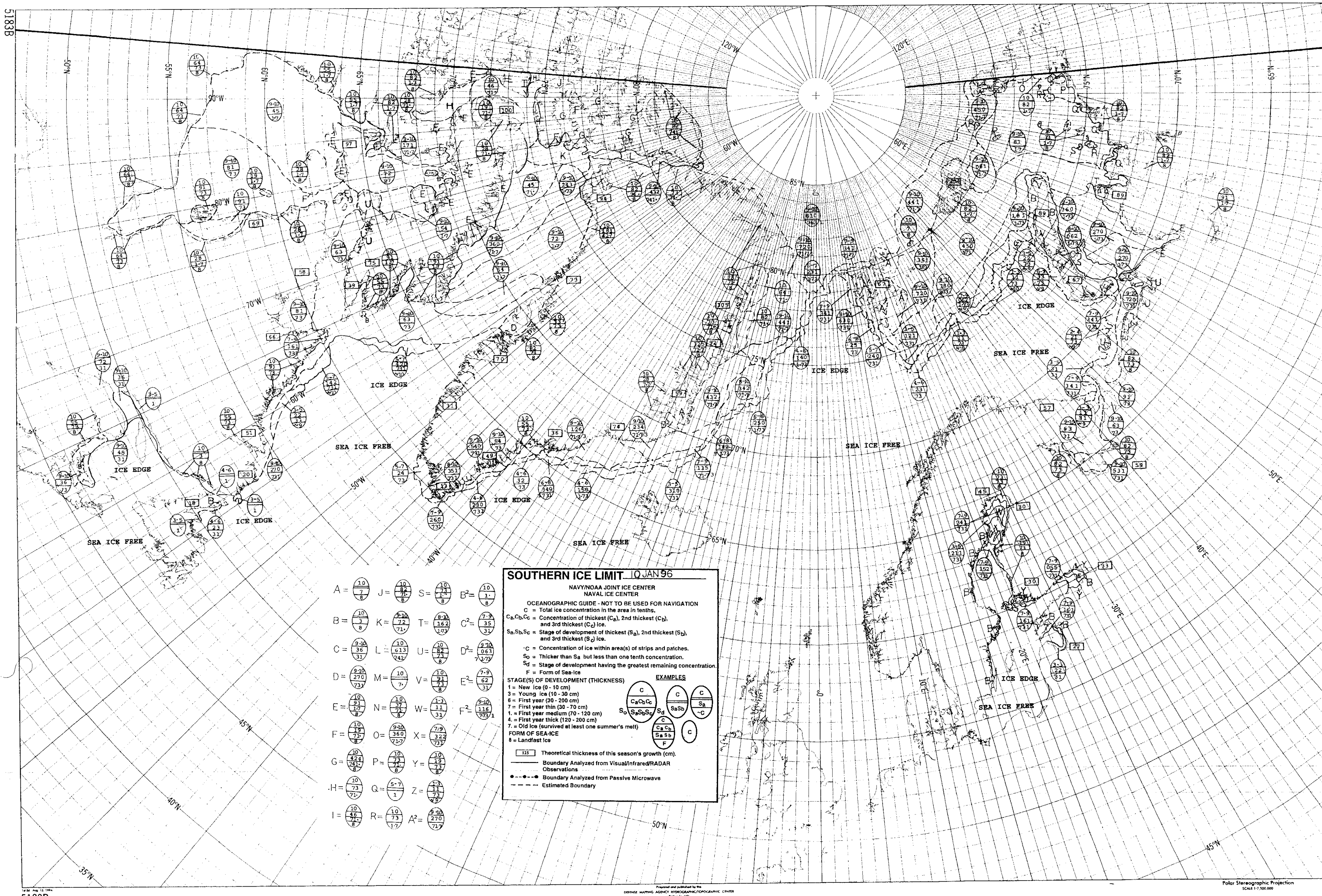
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SOUTHERN ICE LIMIT 10 JAN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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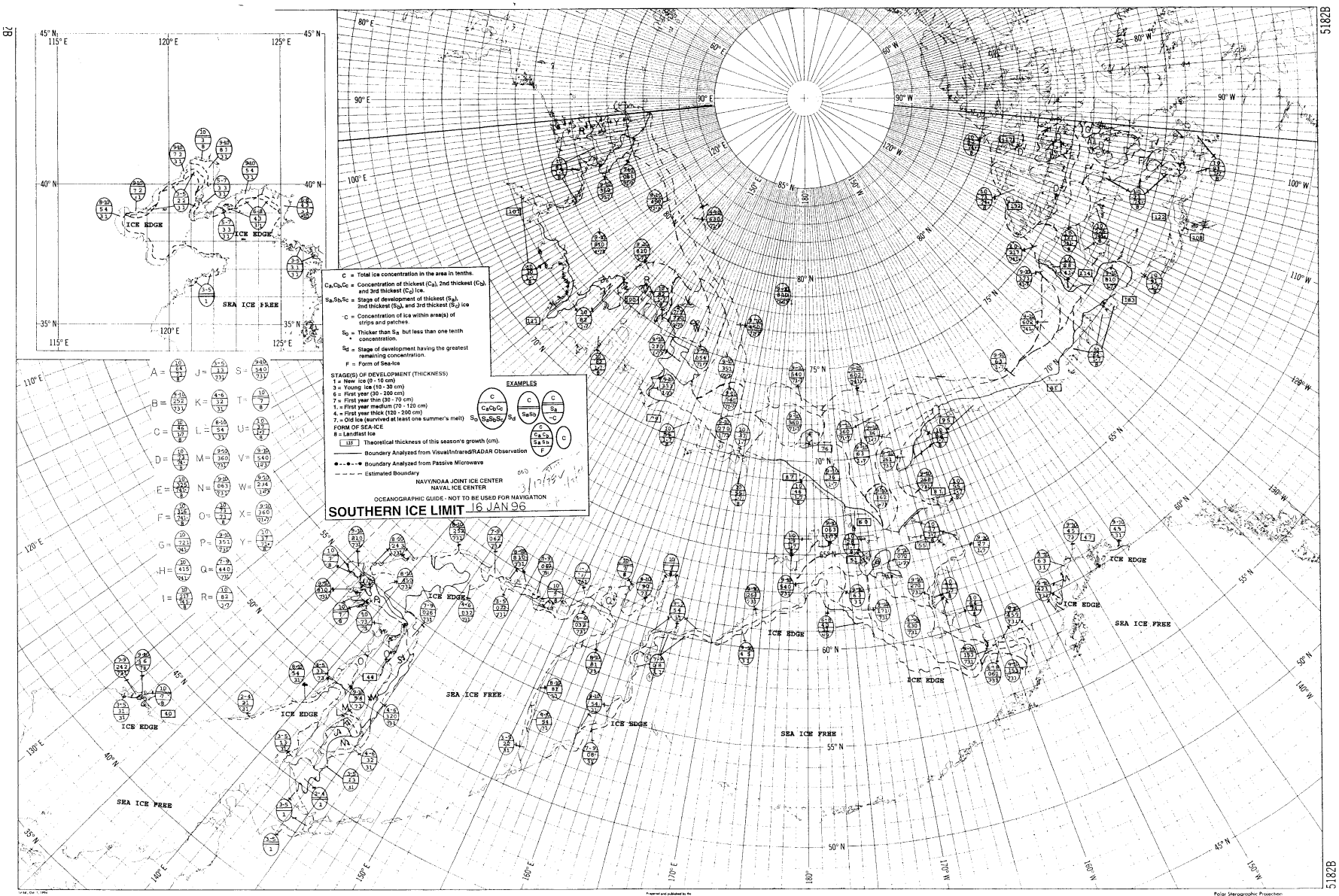
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection



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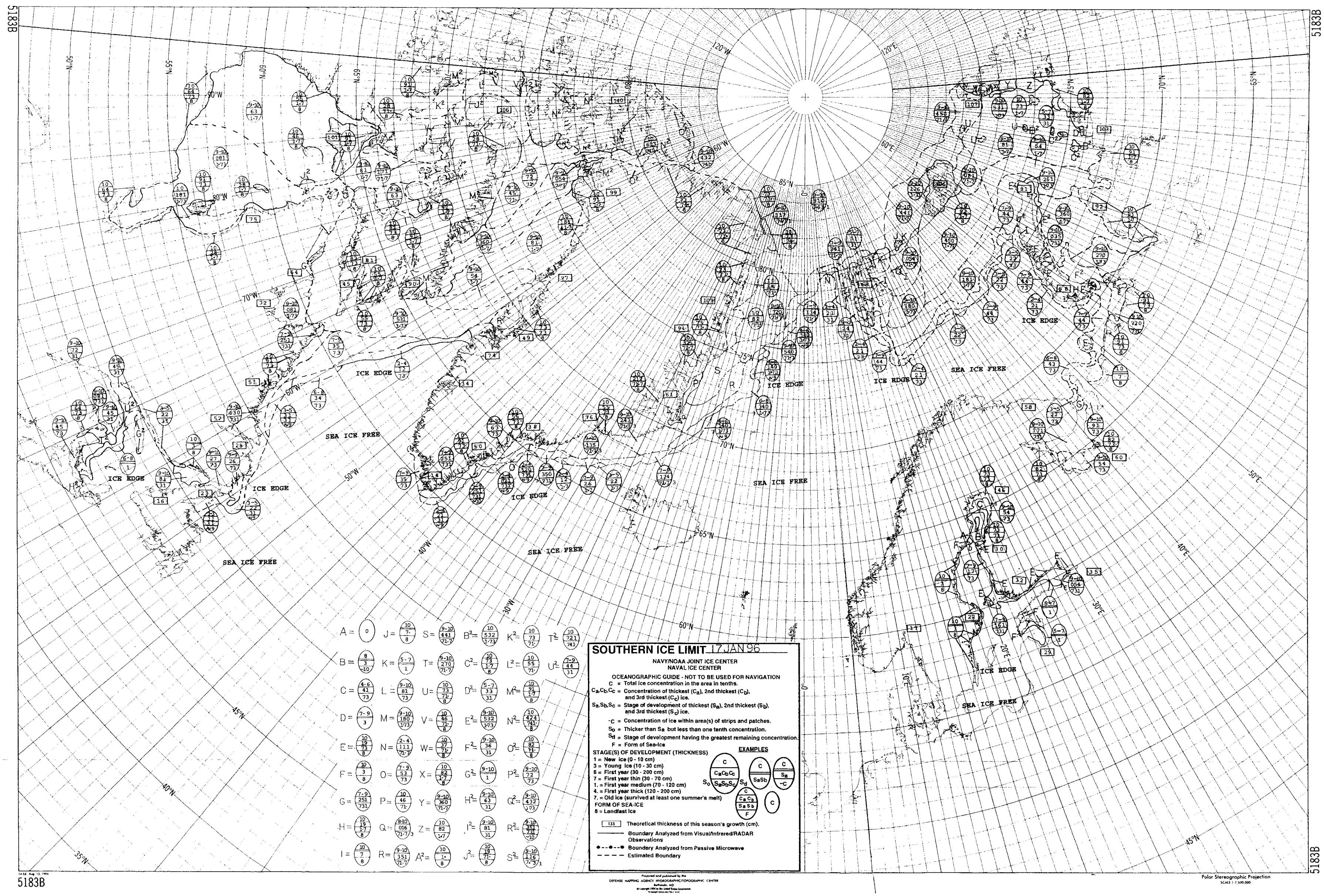
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SOUTHERN ICE LIMIT 17 JAN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
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ICE EDGE
SEA ICE FREE
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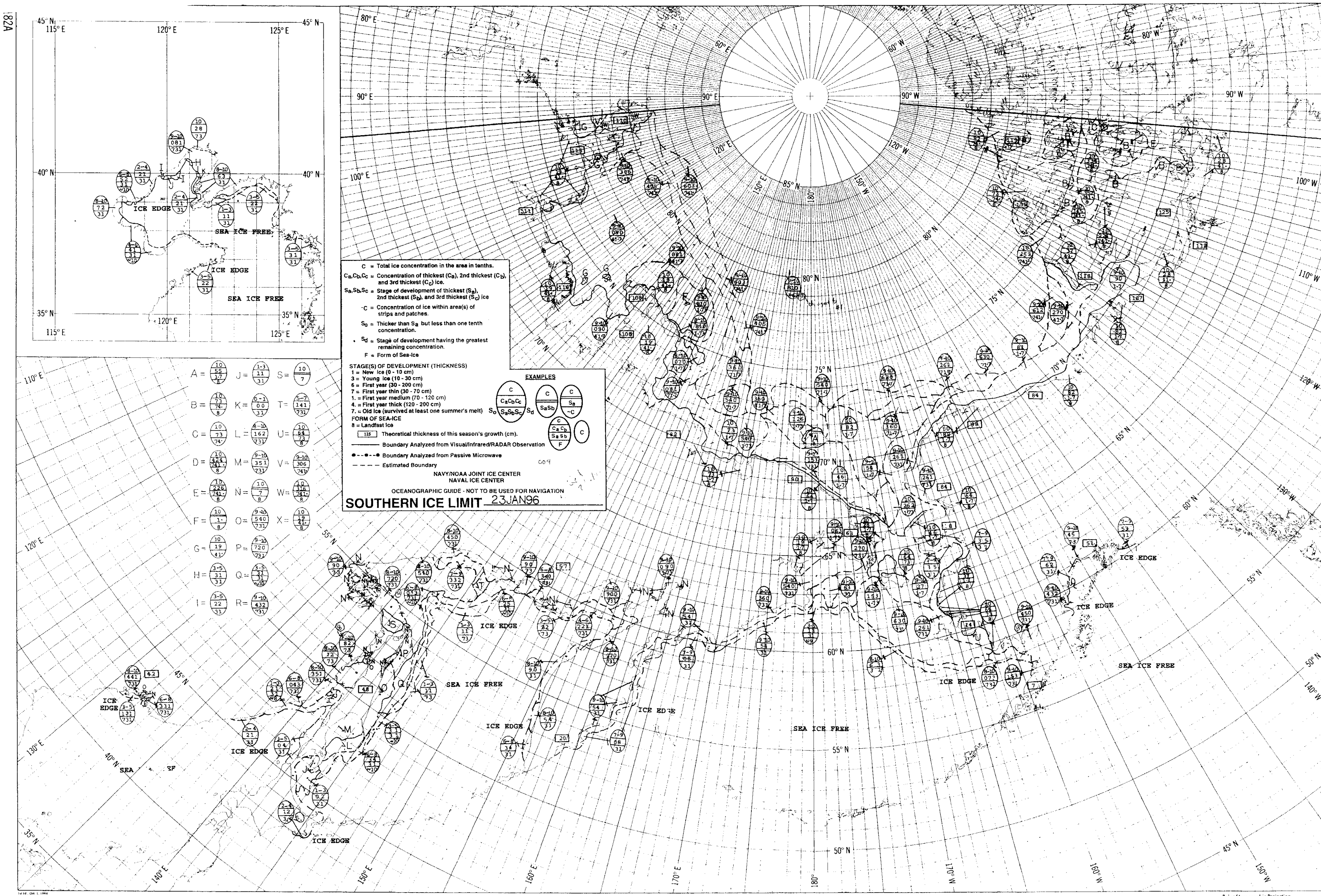
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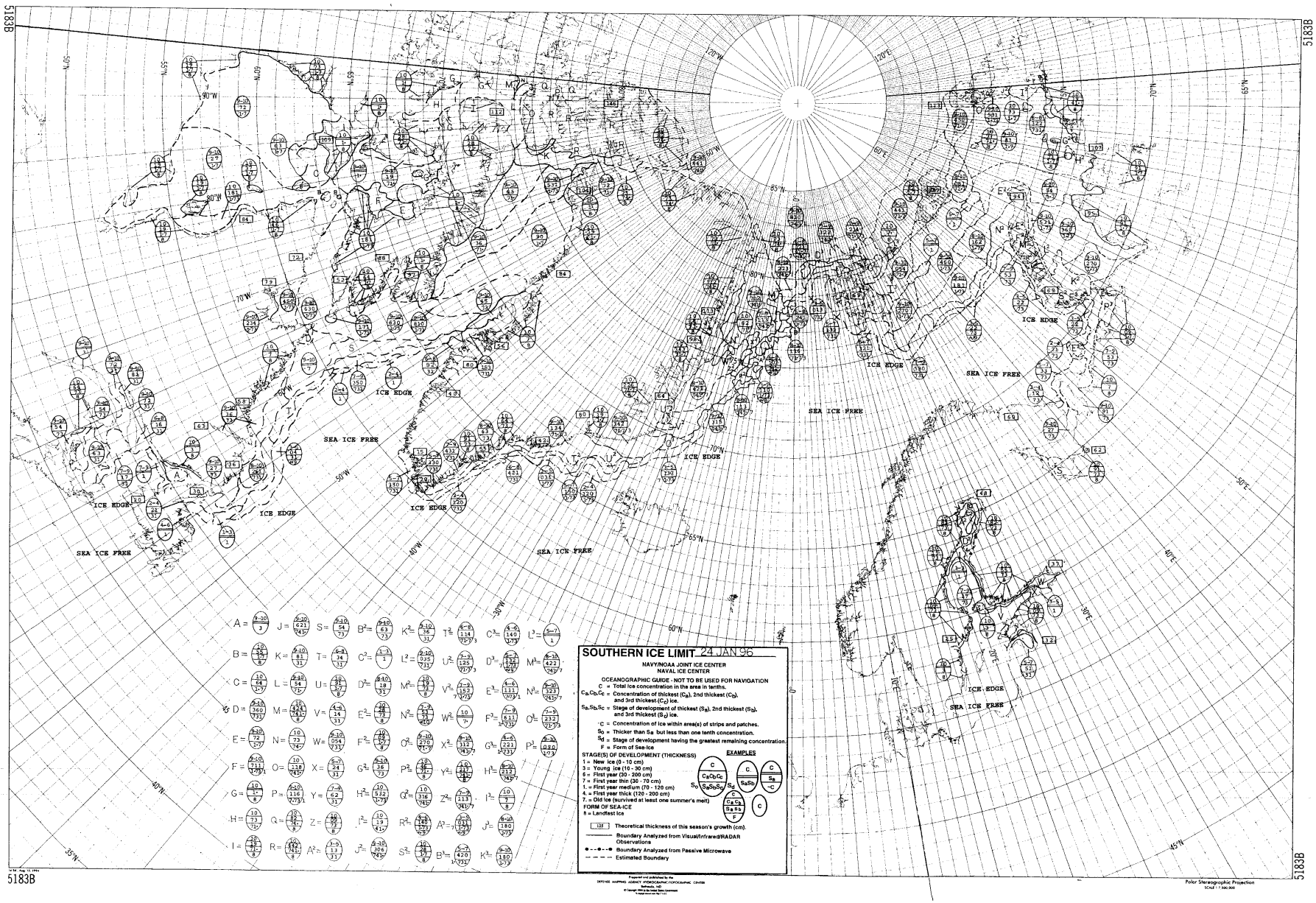
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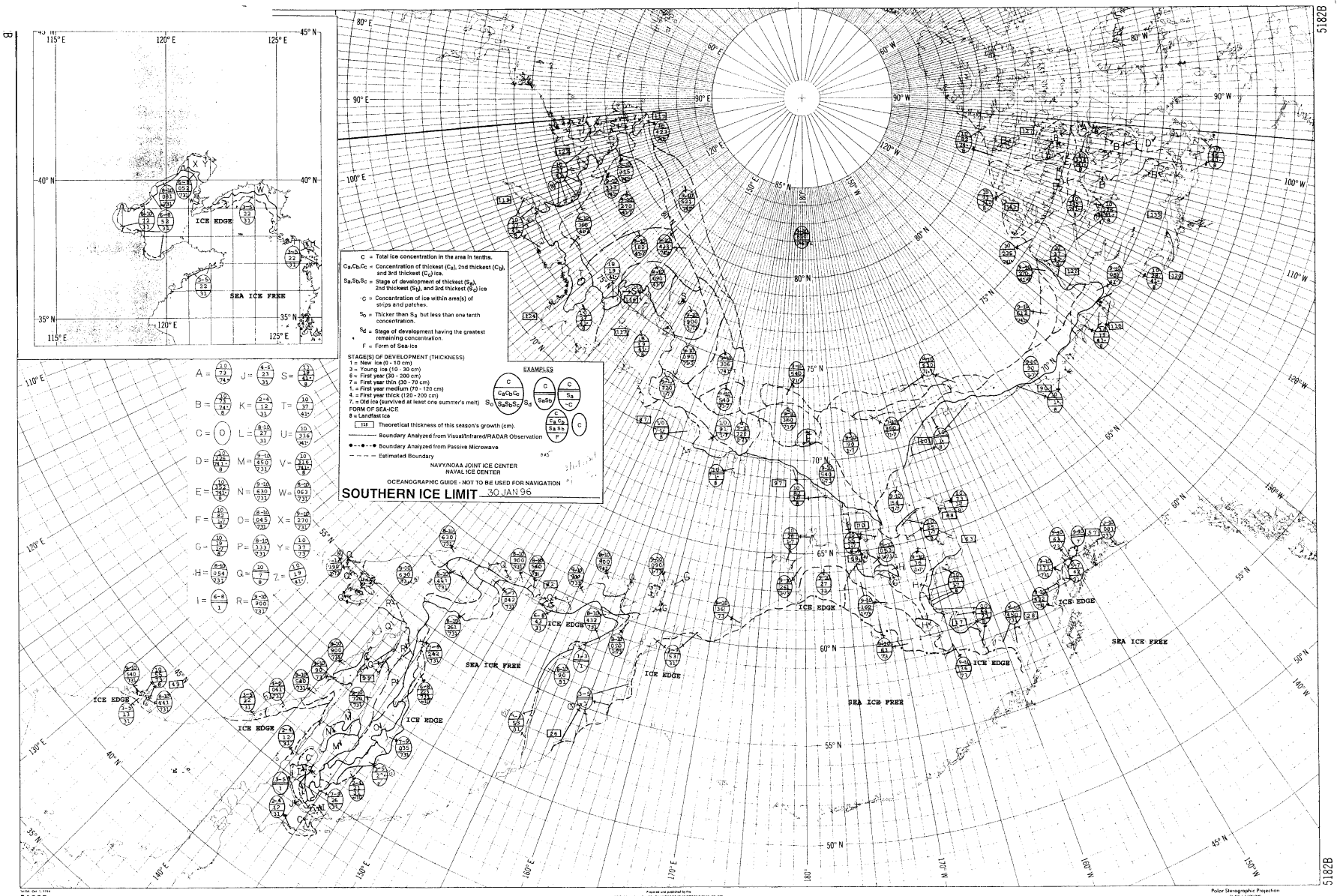
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NAVY/NOAA JOINT ICE CENTER
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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
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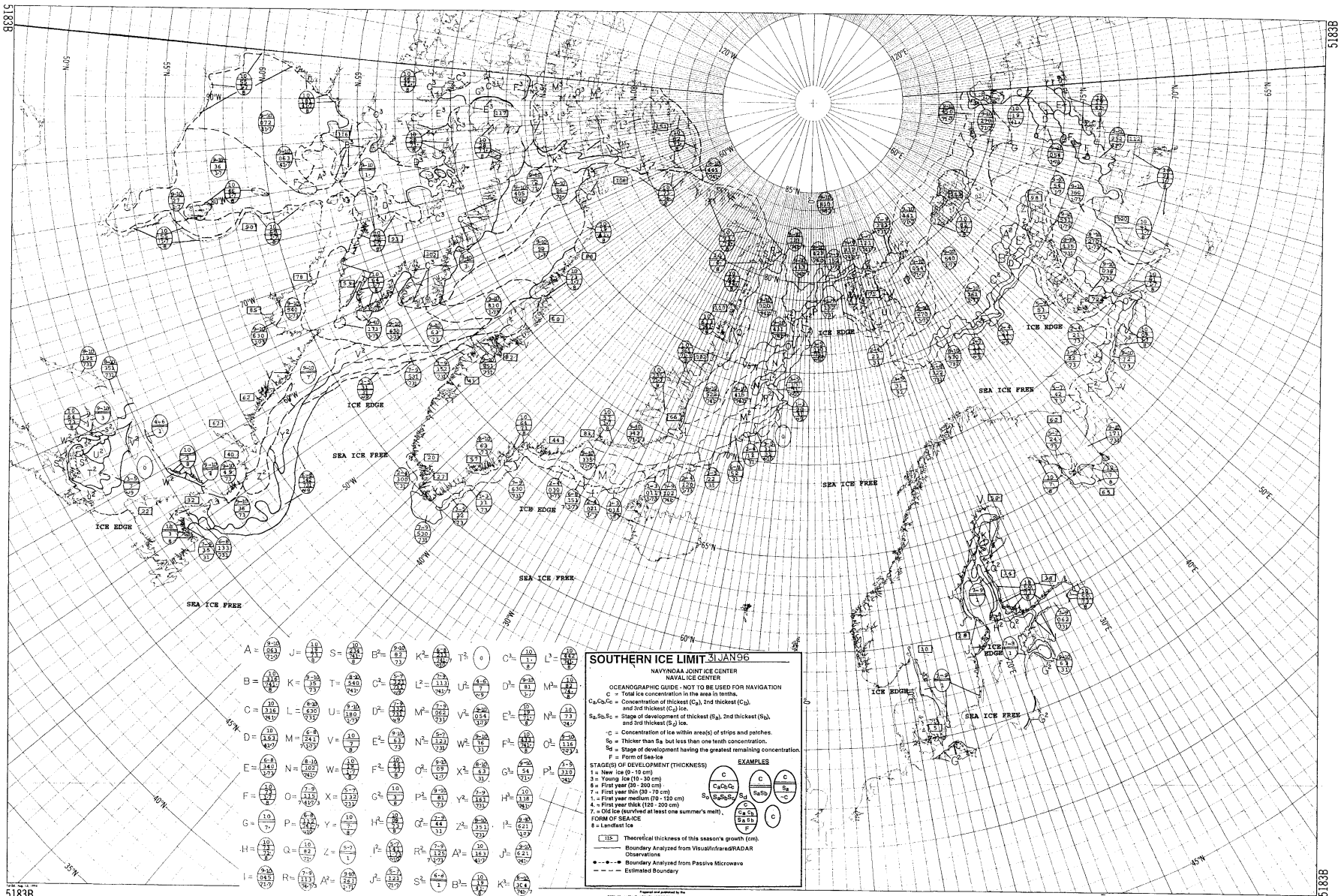
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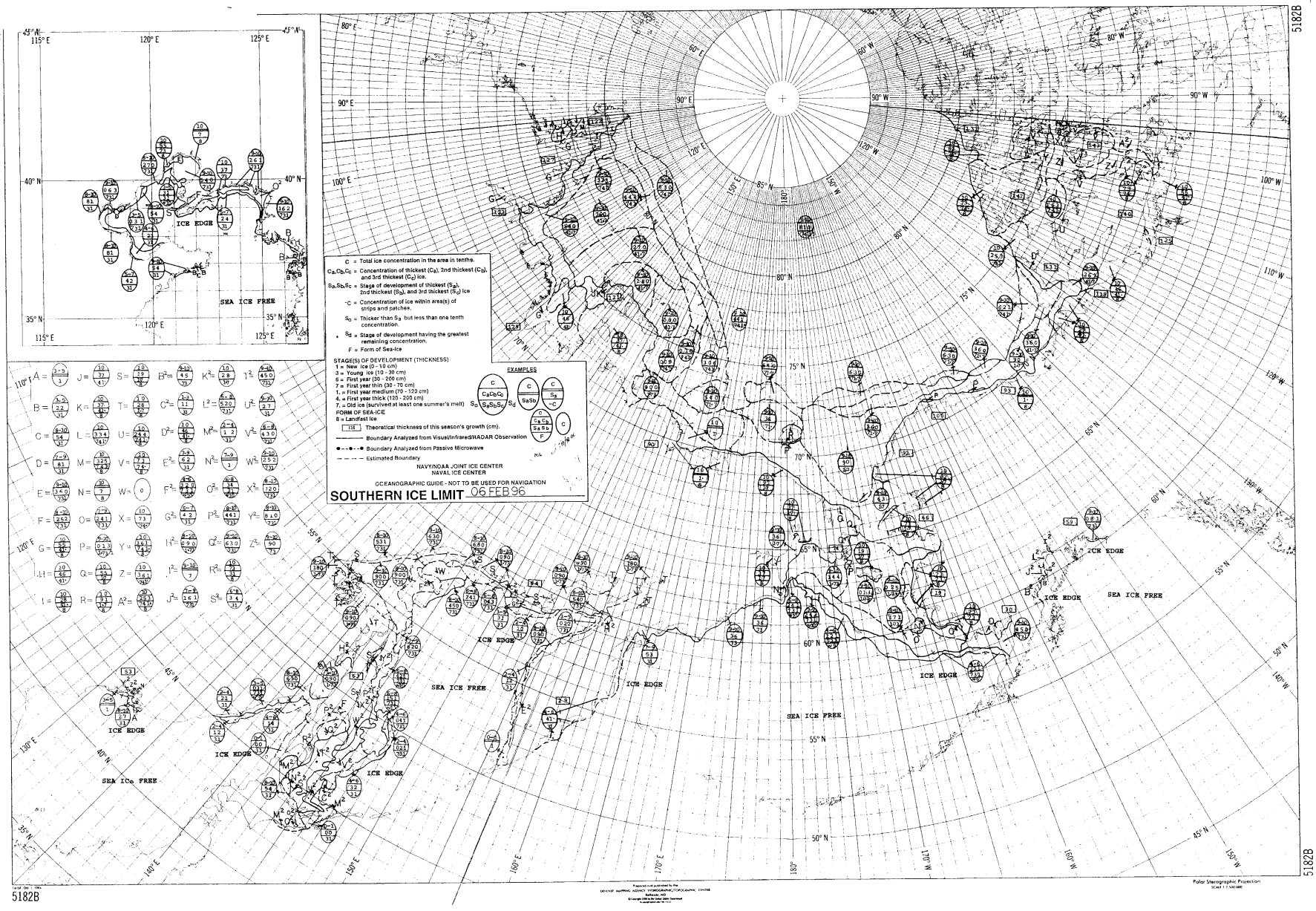
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OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 06 FEB 96
ICE EDGE
SEA ICE FREE
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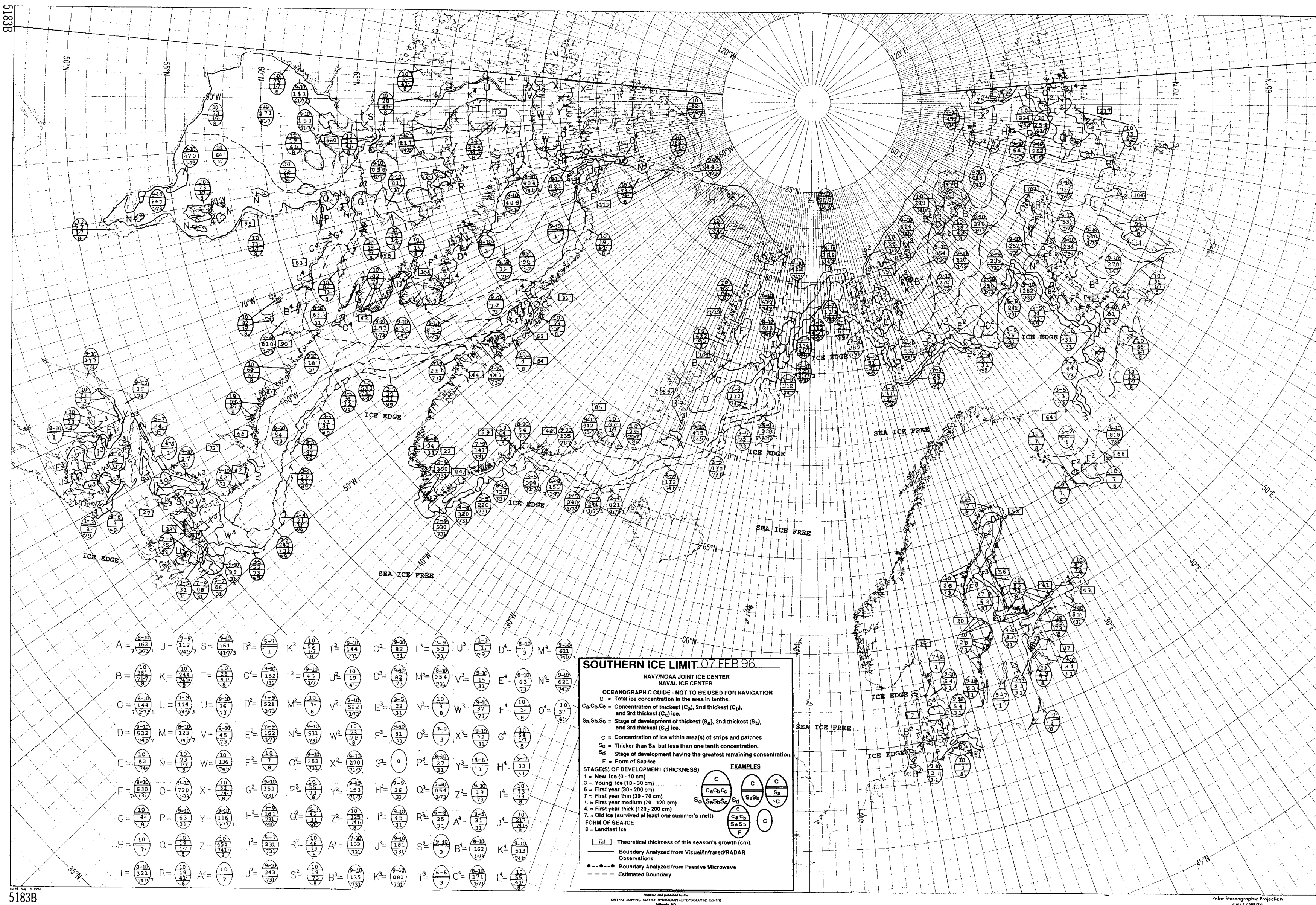

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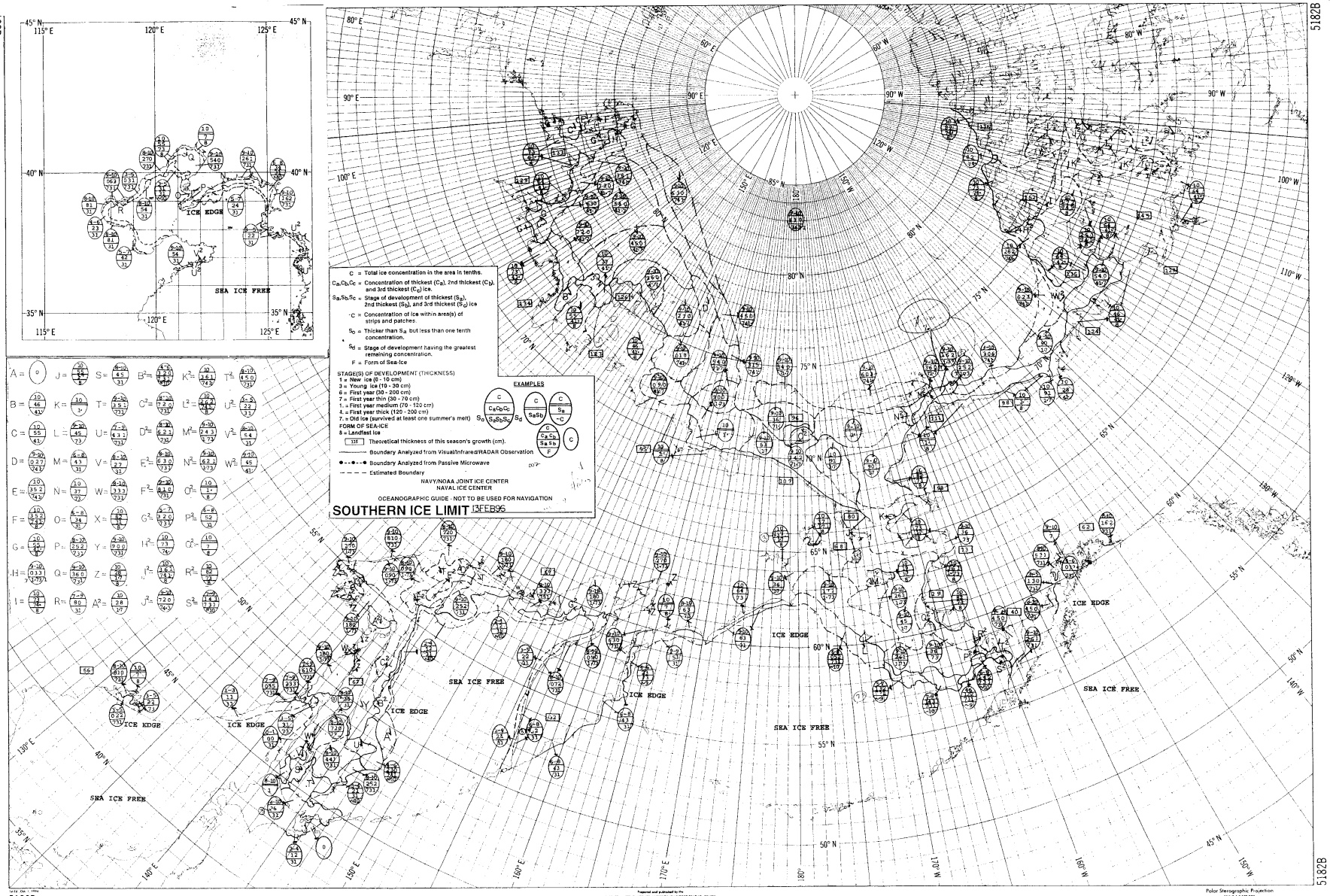
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SOUTHERN ICE LIMIT 13FEB96
ICE EDGE
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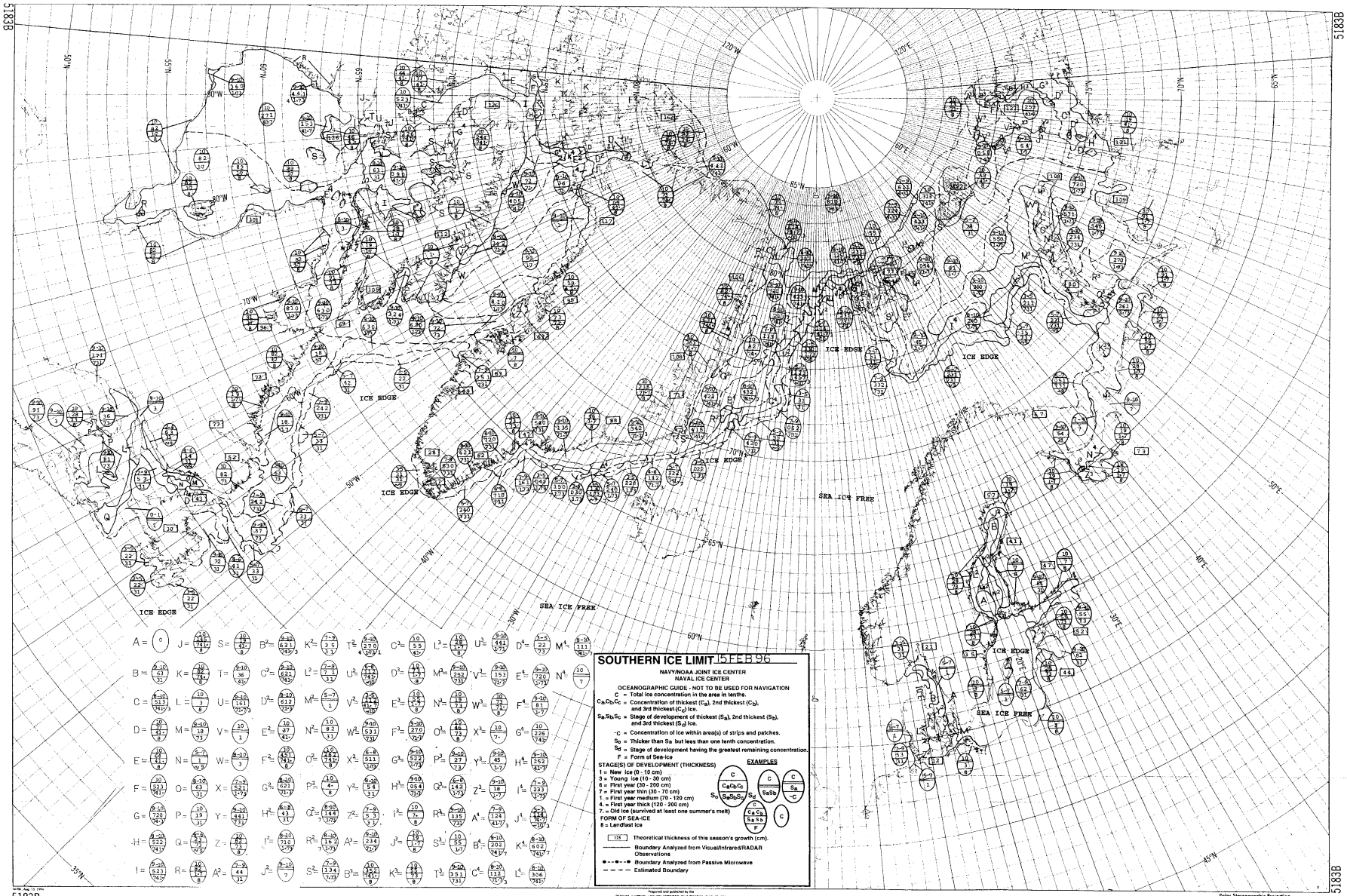
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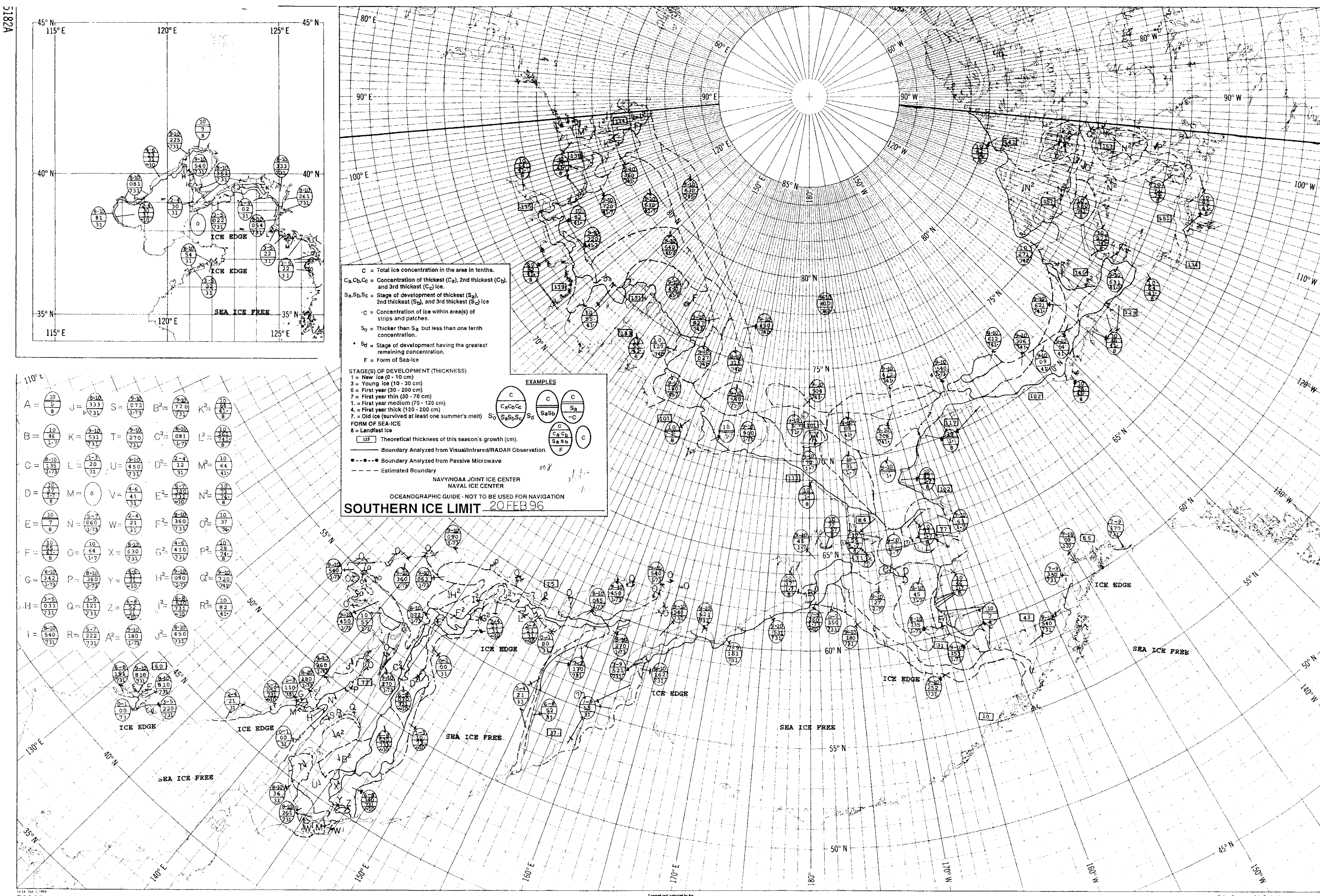
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SOUTHERN ICE LIMIT 20FEB96
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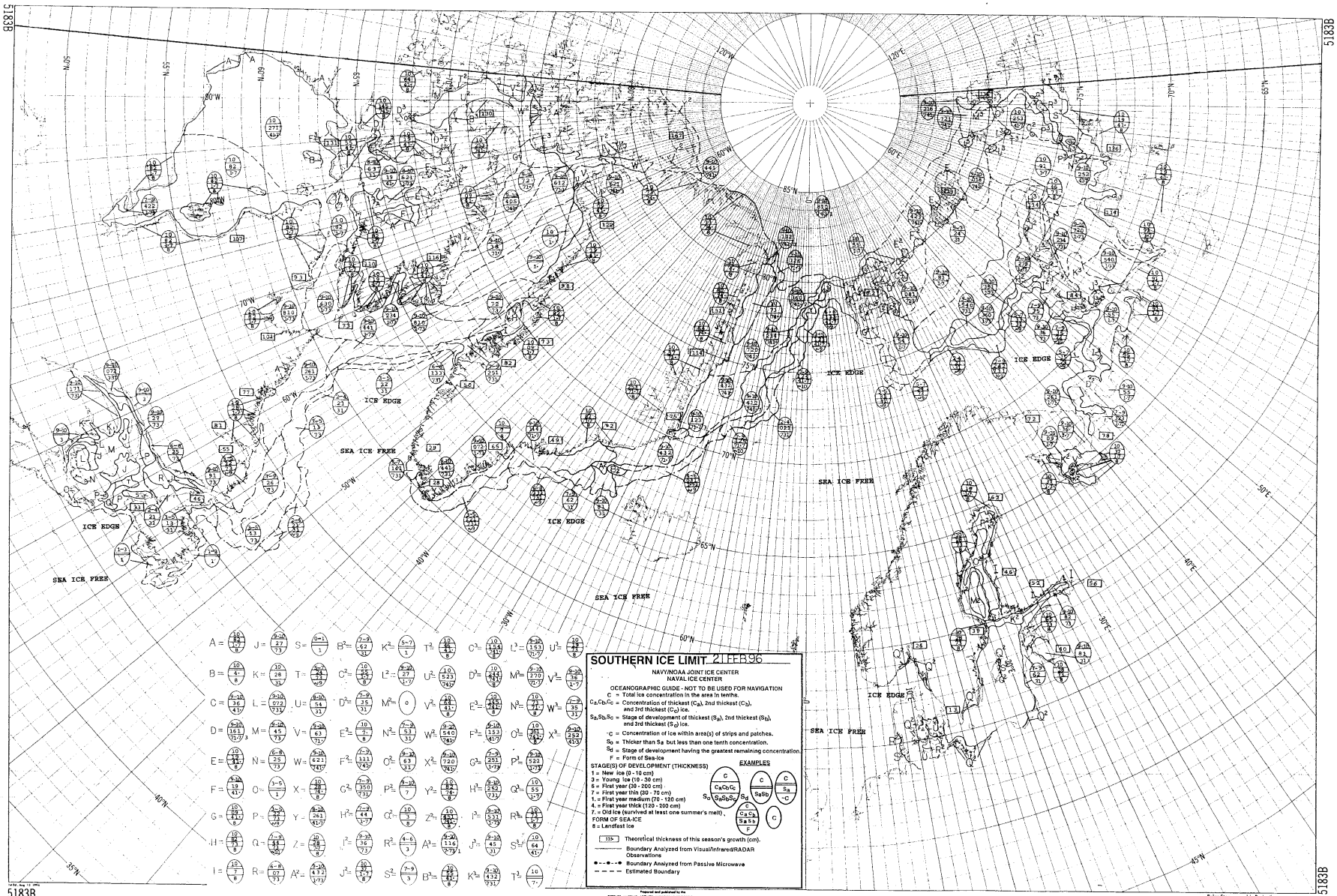
SOUTHERN ICE LIMIT 21 FEB 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
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So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
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1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
SCALE 1:7,500,000

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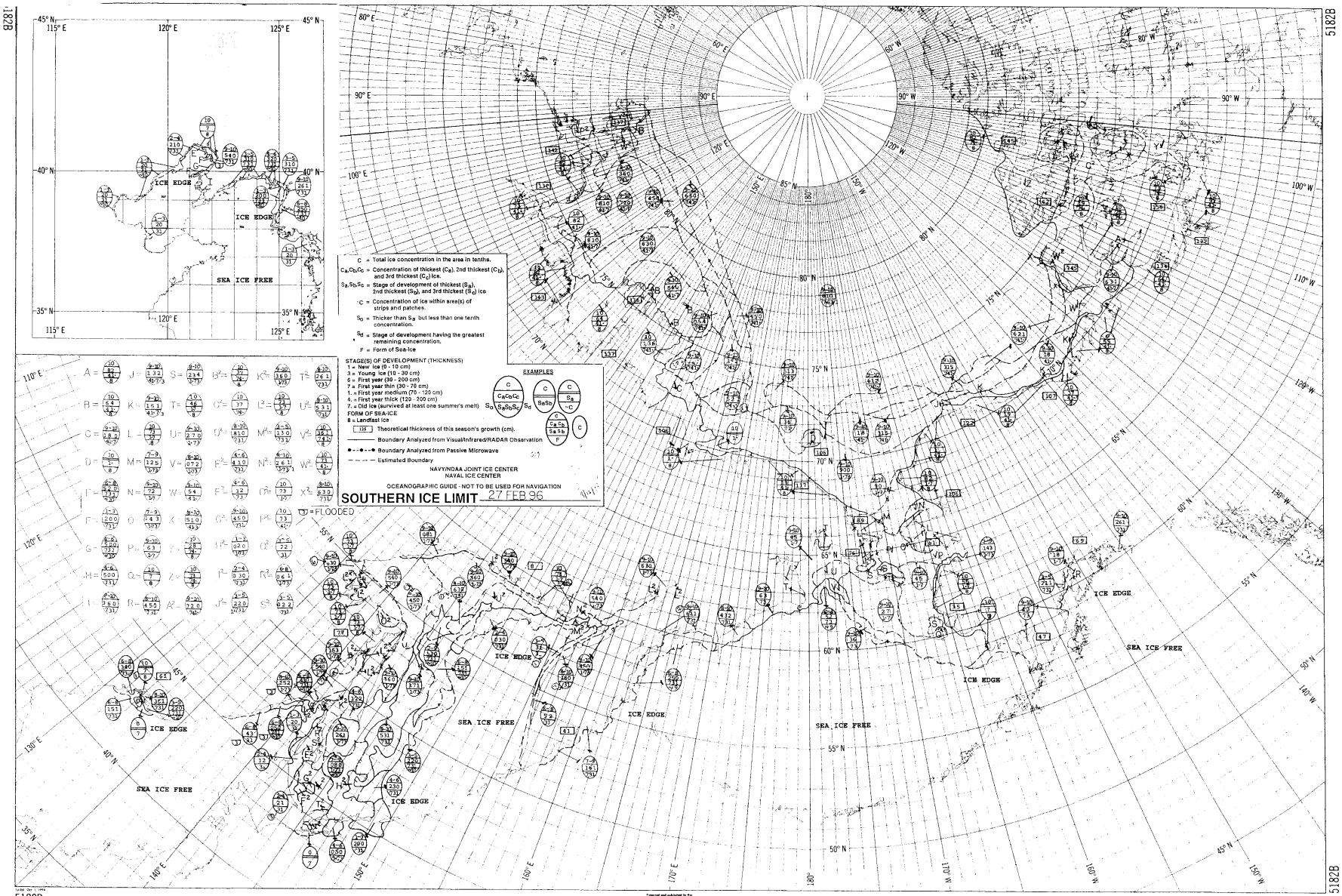
45° N
115° E
120° E
125° E
40° N
35° N
ICE EDGE
SEA ICE FREE
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
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FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 27 FEB 96
3 = FLOODED
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

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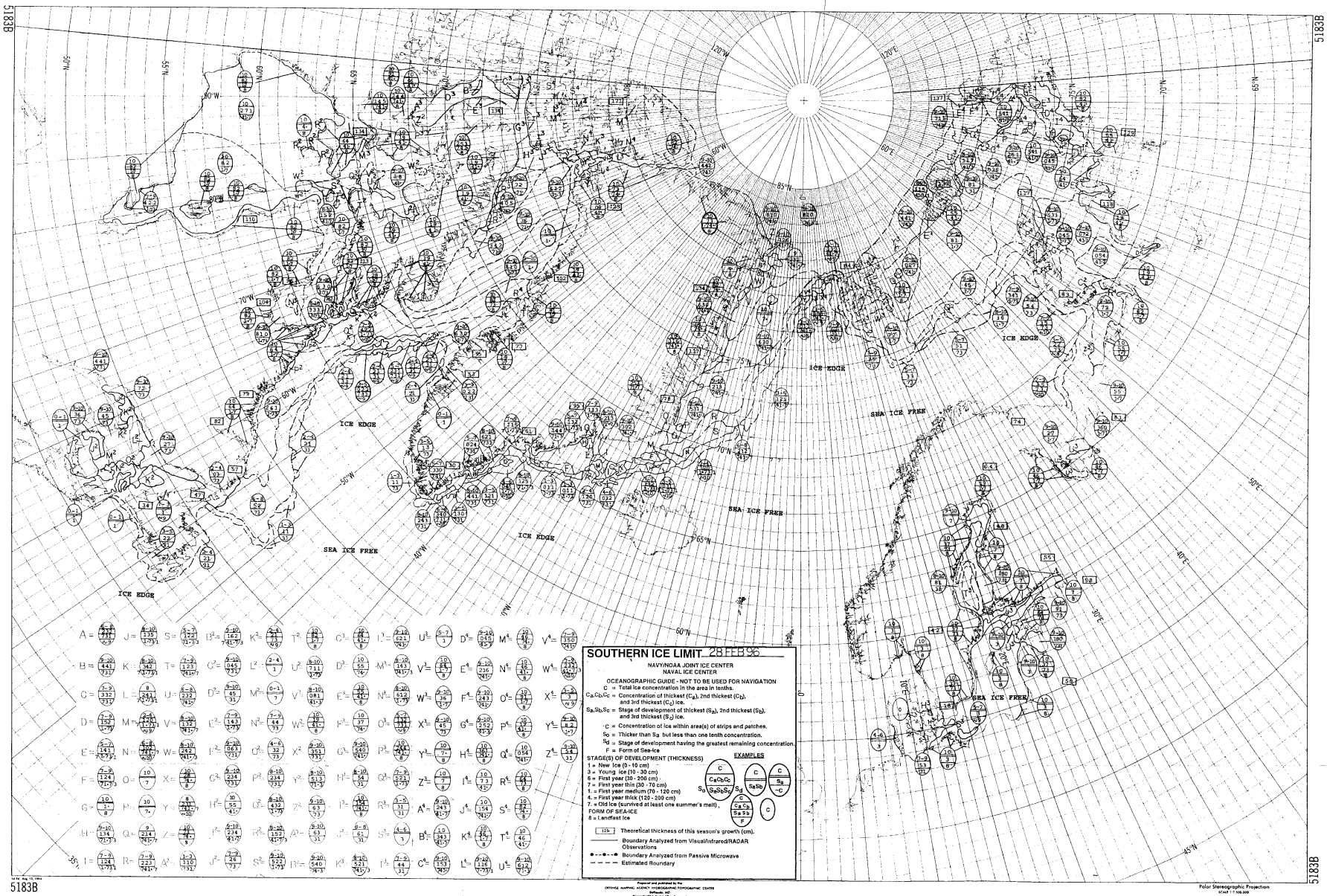
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ICE EDGE
SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SOUTHERN ICE LIMIT 28 FEB 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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F = Form of Sea-Ice
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FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
115 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
SCALE 1:7 500 000
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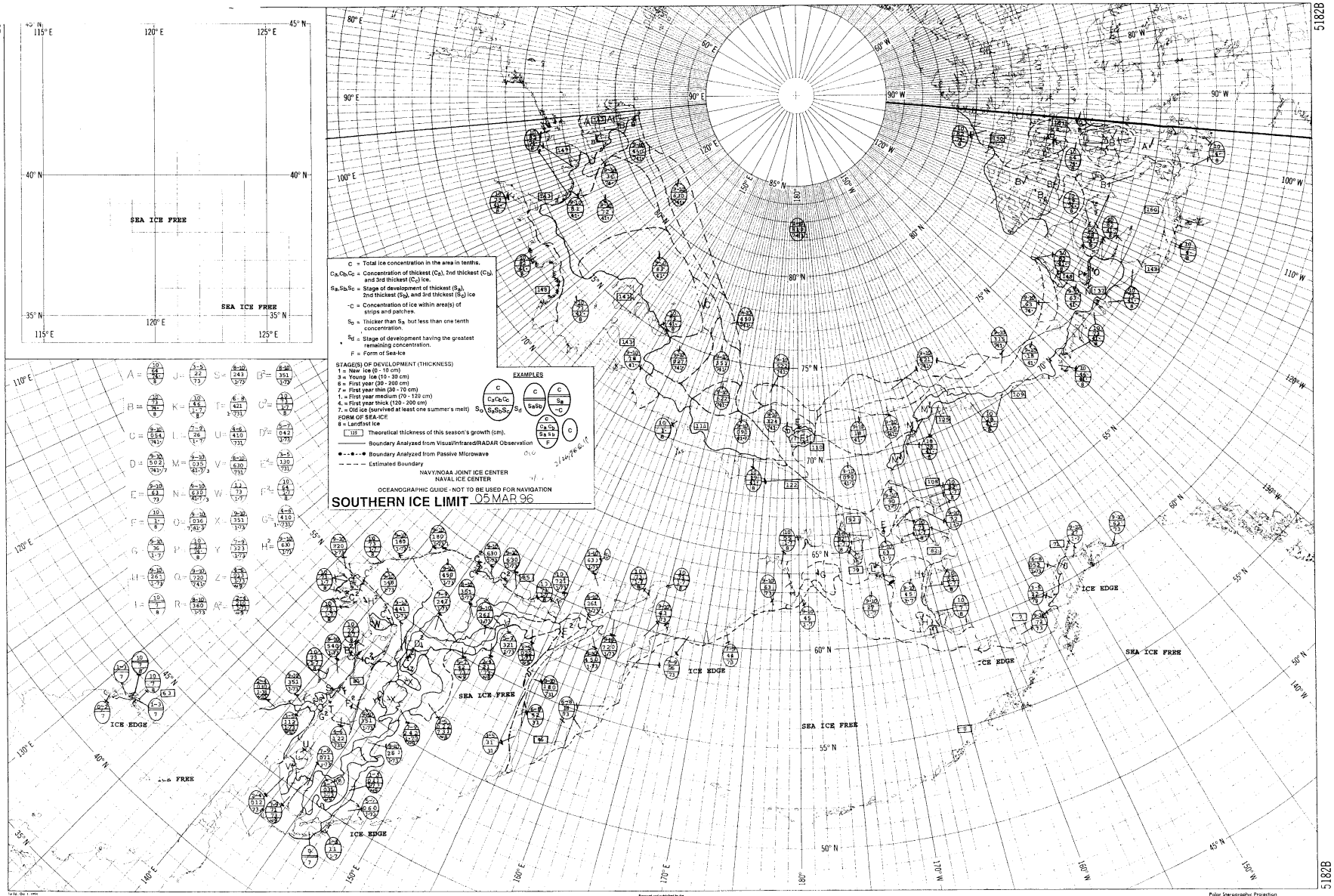
SEA ICE FREE
SEA ICE FREE
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$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
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FORM OF SEA-ICE
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135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 05 MAR 96
ICE EDGE
SEA ICE FREE
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ICE EDGE
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection

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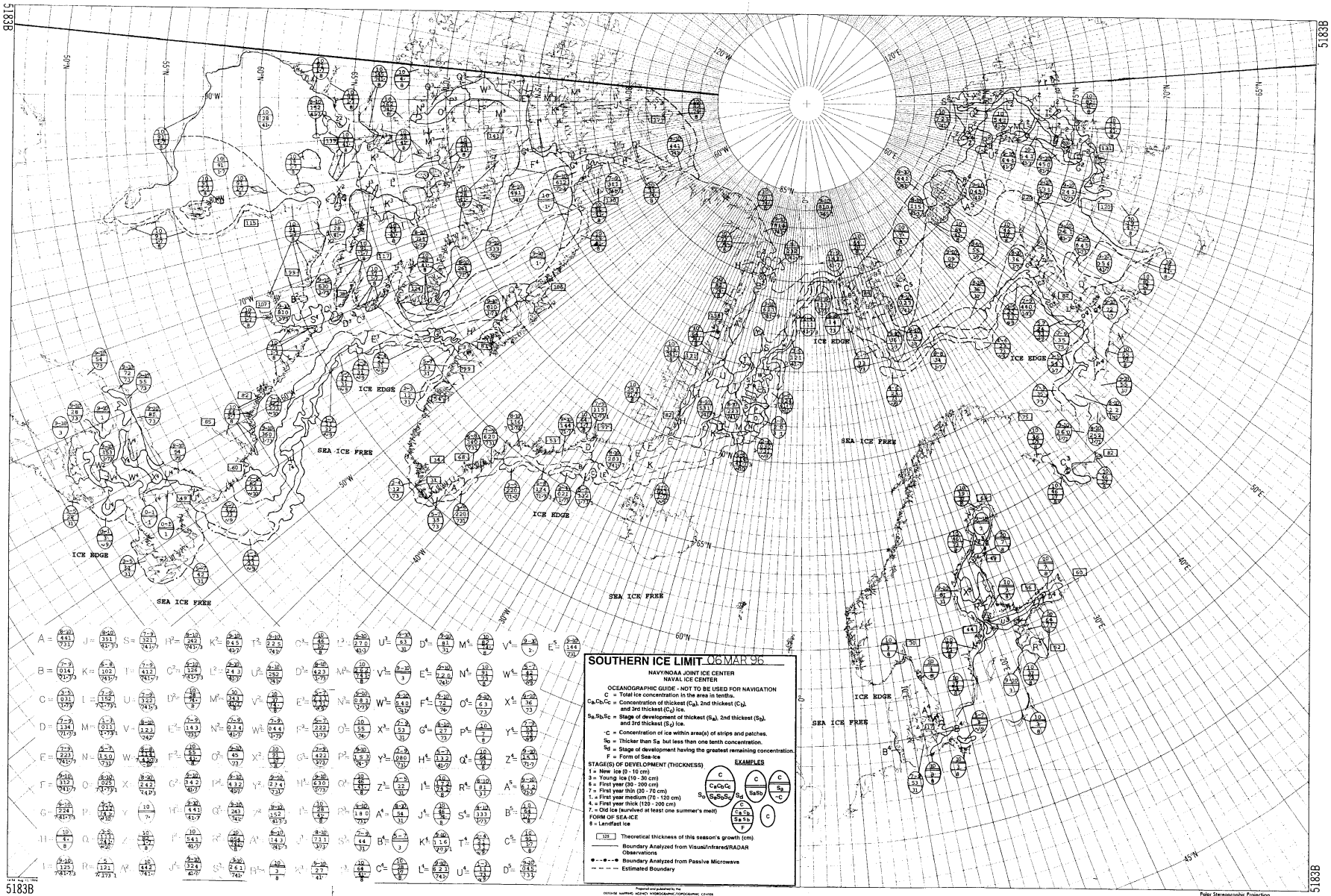
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ICE EDGE
SEA ICE FREE
SOUTHERN ICE LIMIT 06 MAR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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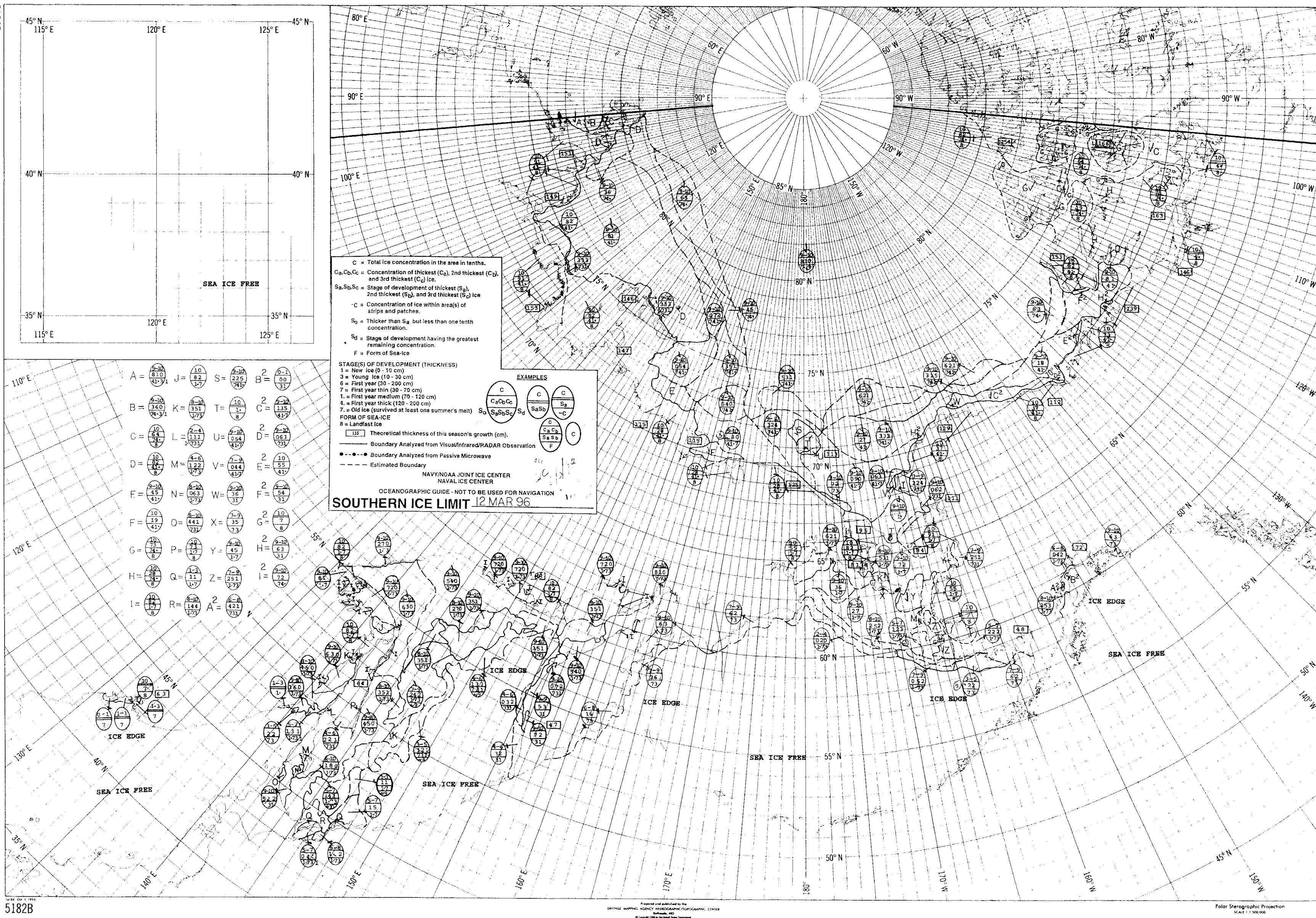
FORM OF SEA ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
5183B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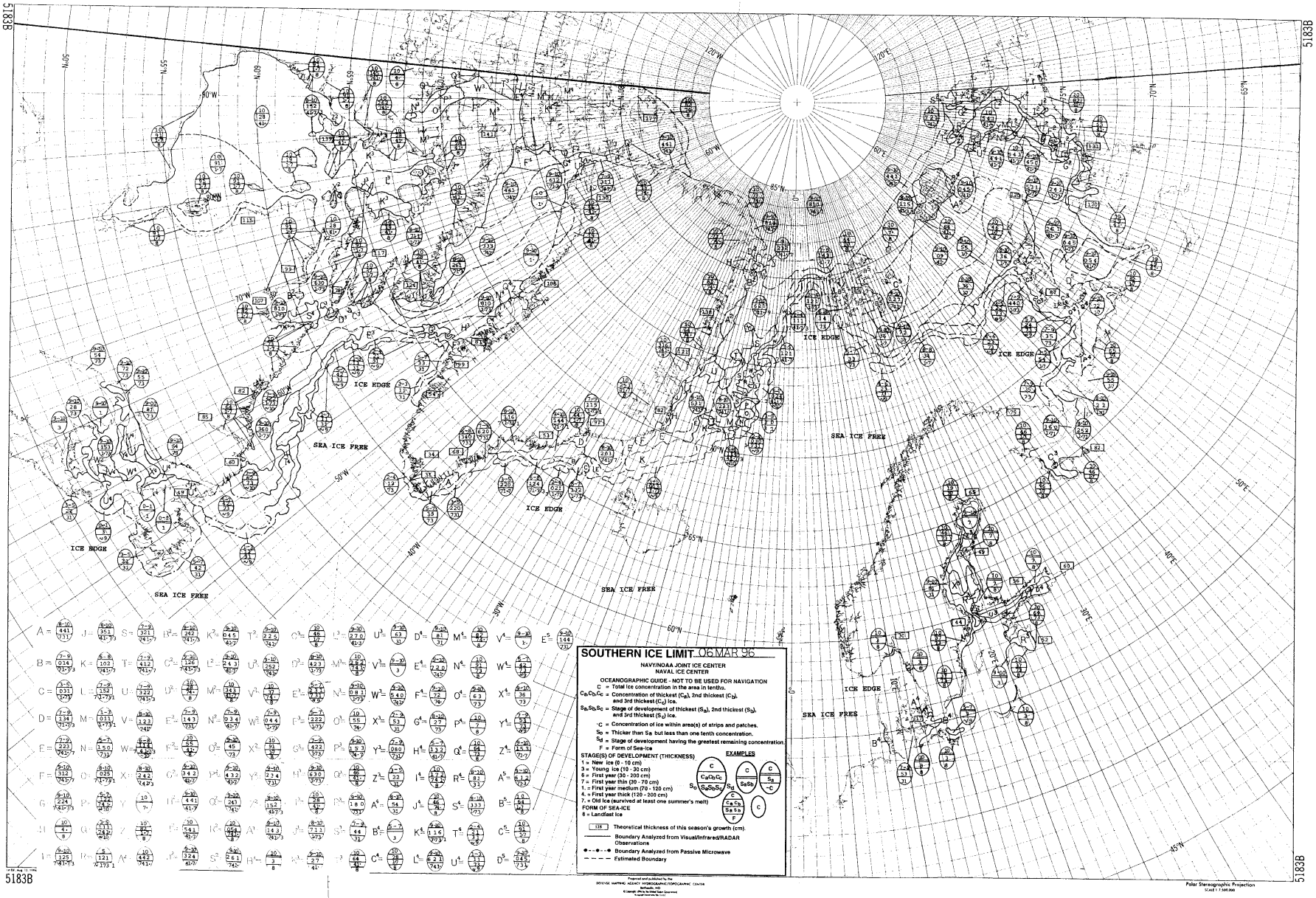
8 = Landfast Ice
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 12 MAR 96
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection


SEA ICE FREE
ICE EDGE
SOUTHERN ICE LIMIT 06 MAR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
SCALE 1:7,500,000
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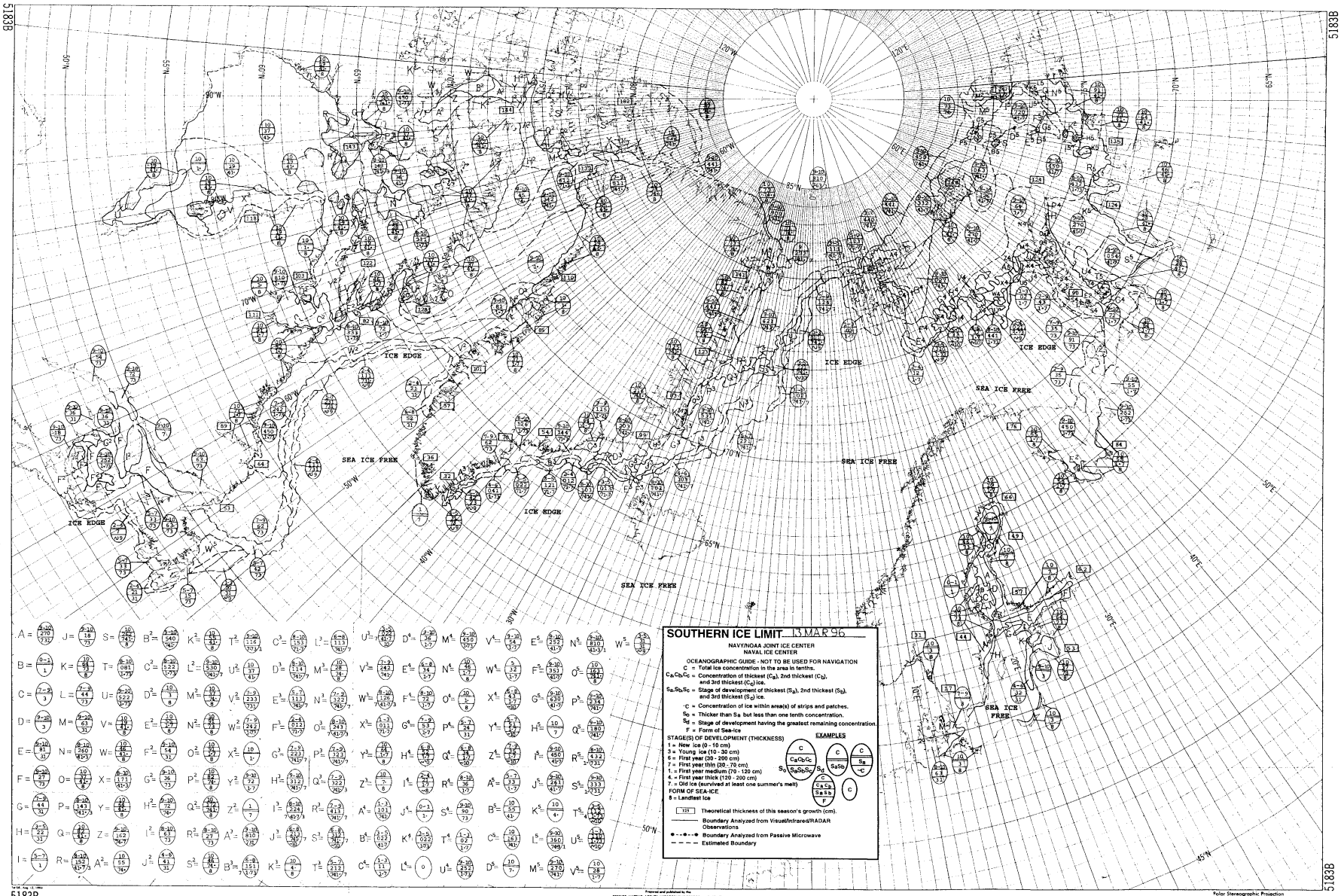
ICE EDGE
SEA ICE FREE
SOUTHERN ICE LIMIT 13 MAR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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Sa = Thicker than Sa but less than one tenth concentration.
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F = Form of Sea-Ice
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EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection

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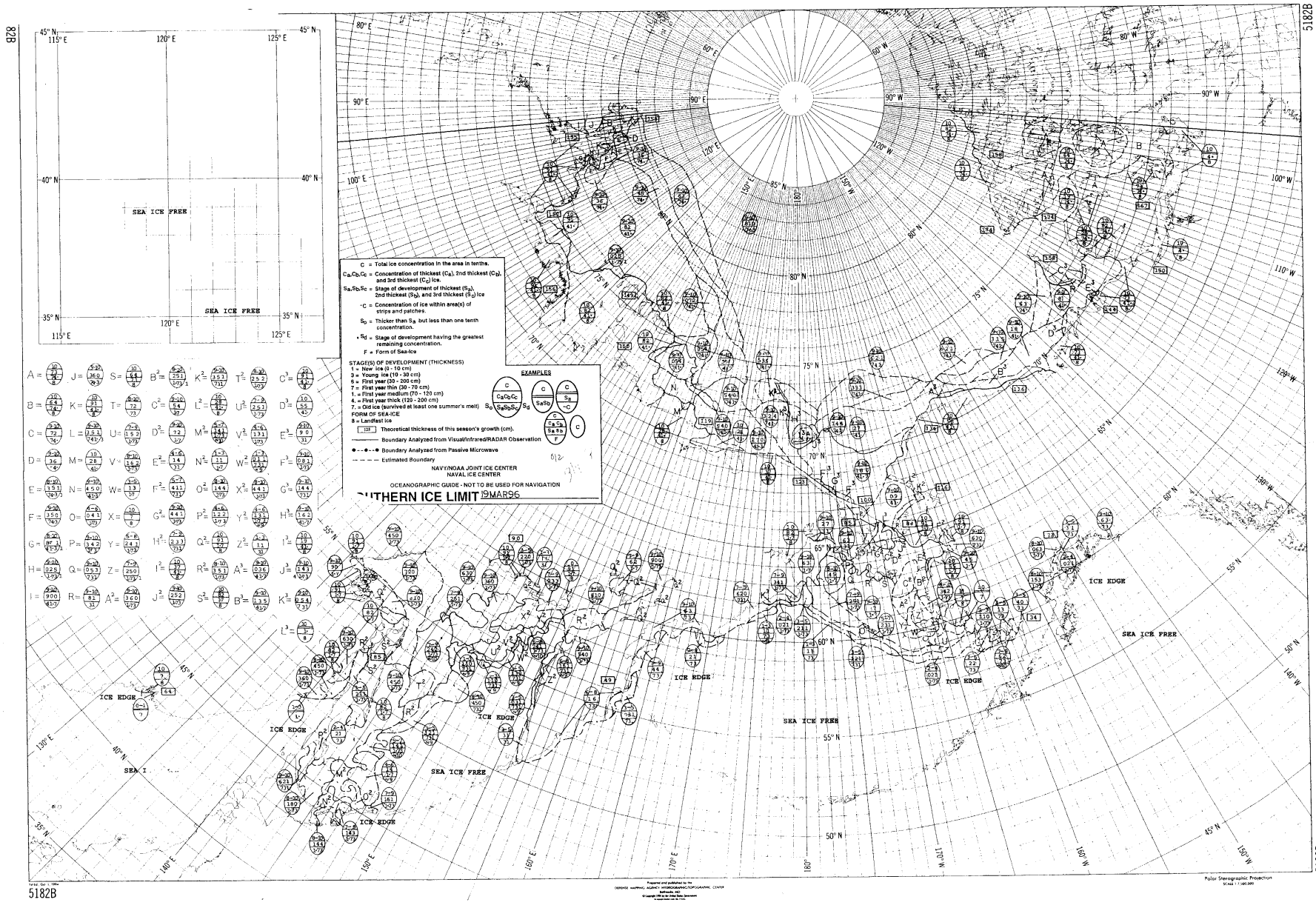
5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
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F = Form of Sea-ice
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1 = New ice (0 - 10 cm)
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1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 19MAR96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
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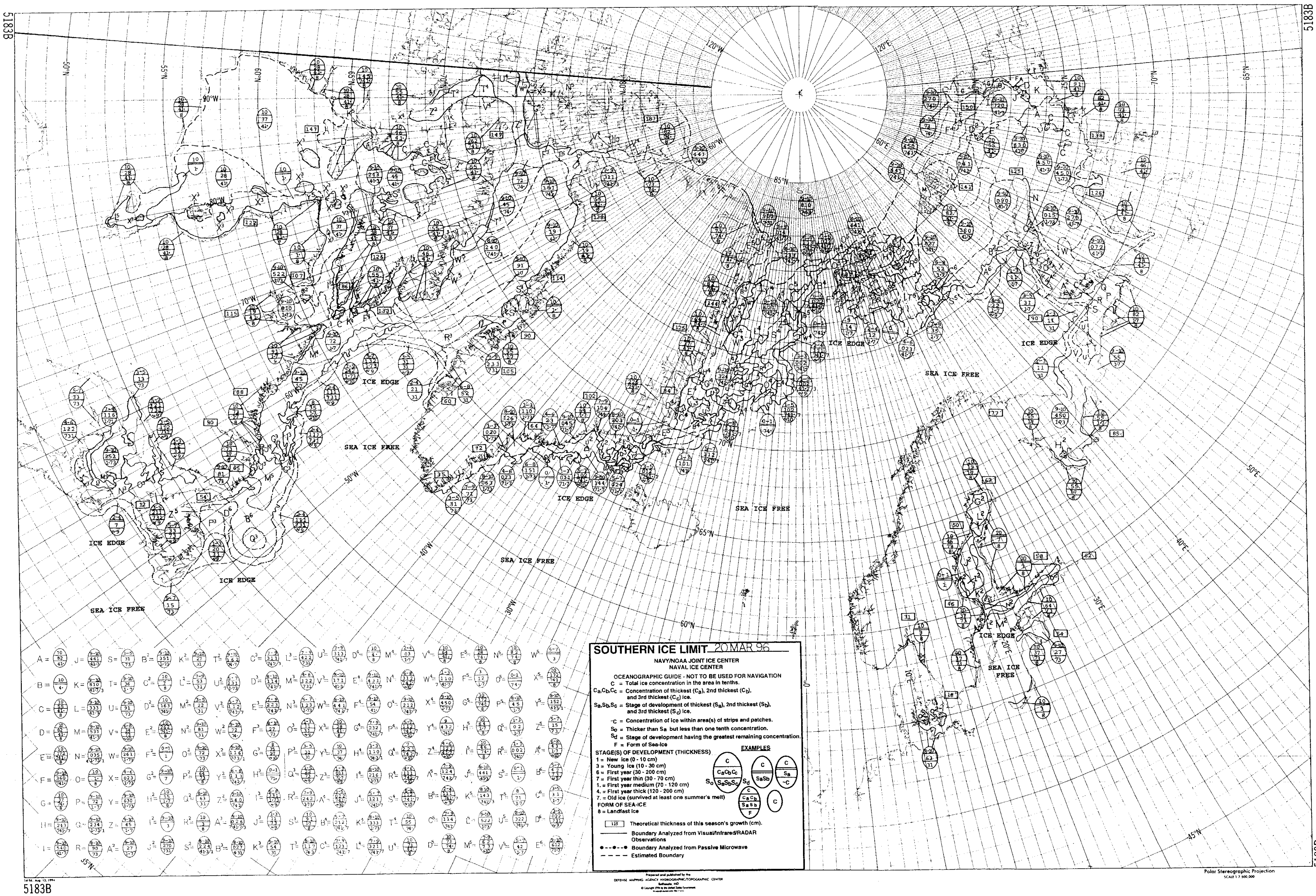
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SOUTHERN ICE LIMIT 20 MAR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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F = Form of Sea-ice
EXAMPLES
STAGE(S) OF DEVELOPMENT (THICKNESS)
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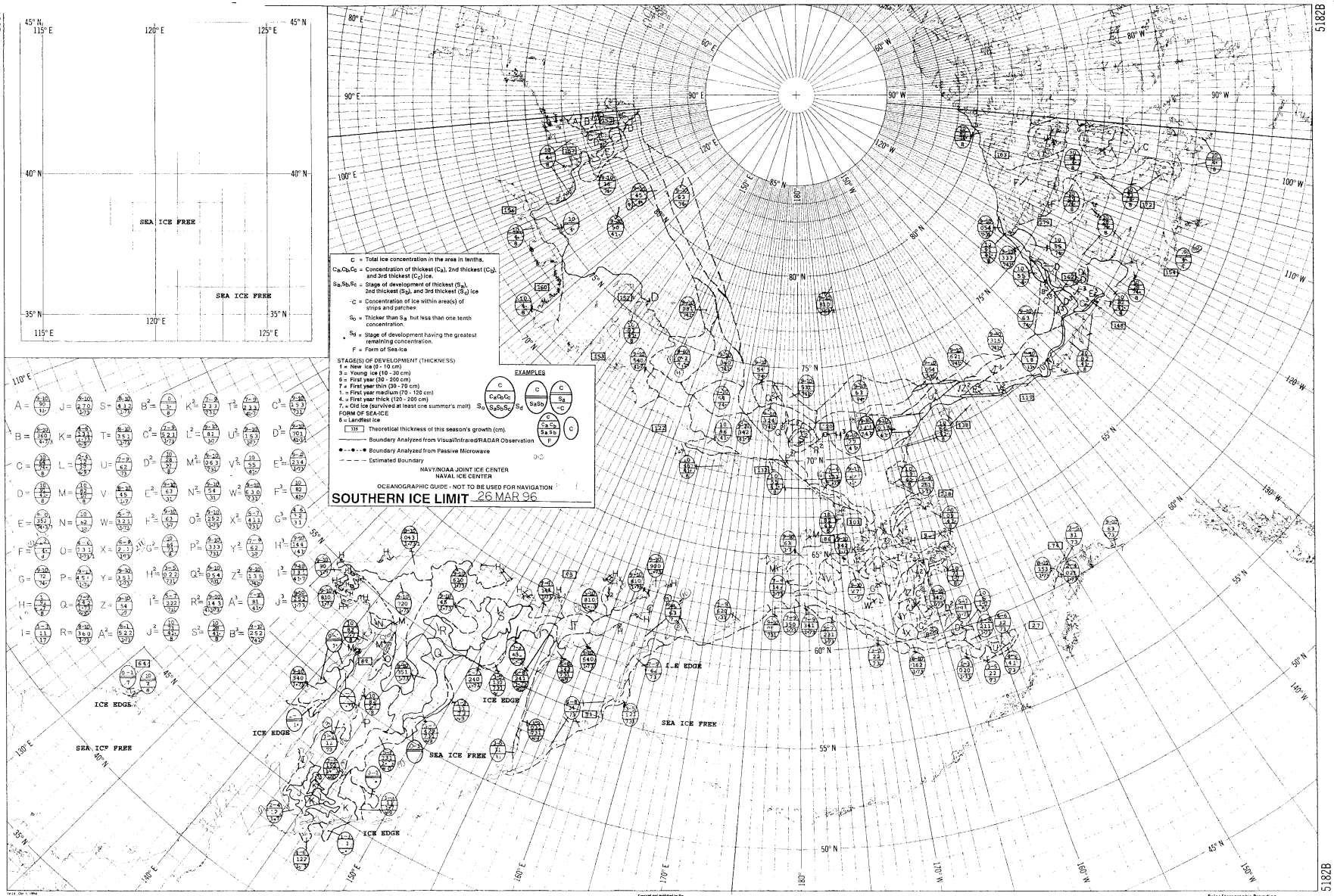
FORM OF SEA-ICE
8 = Landfast ice
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER


5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
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FORM OF SEA-ICE
8 = Landfast Ice
339 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 26 MAR 96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
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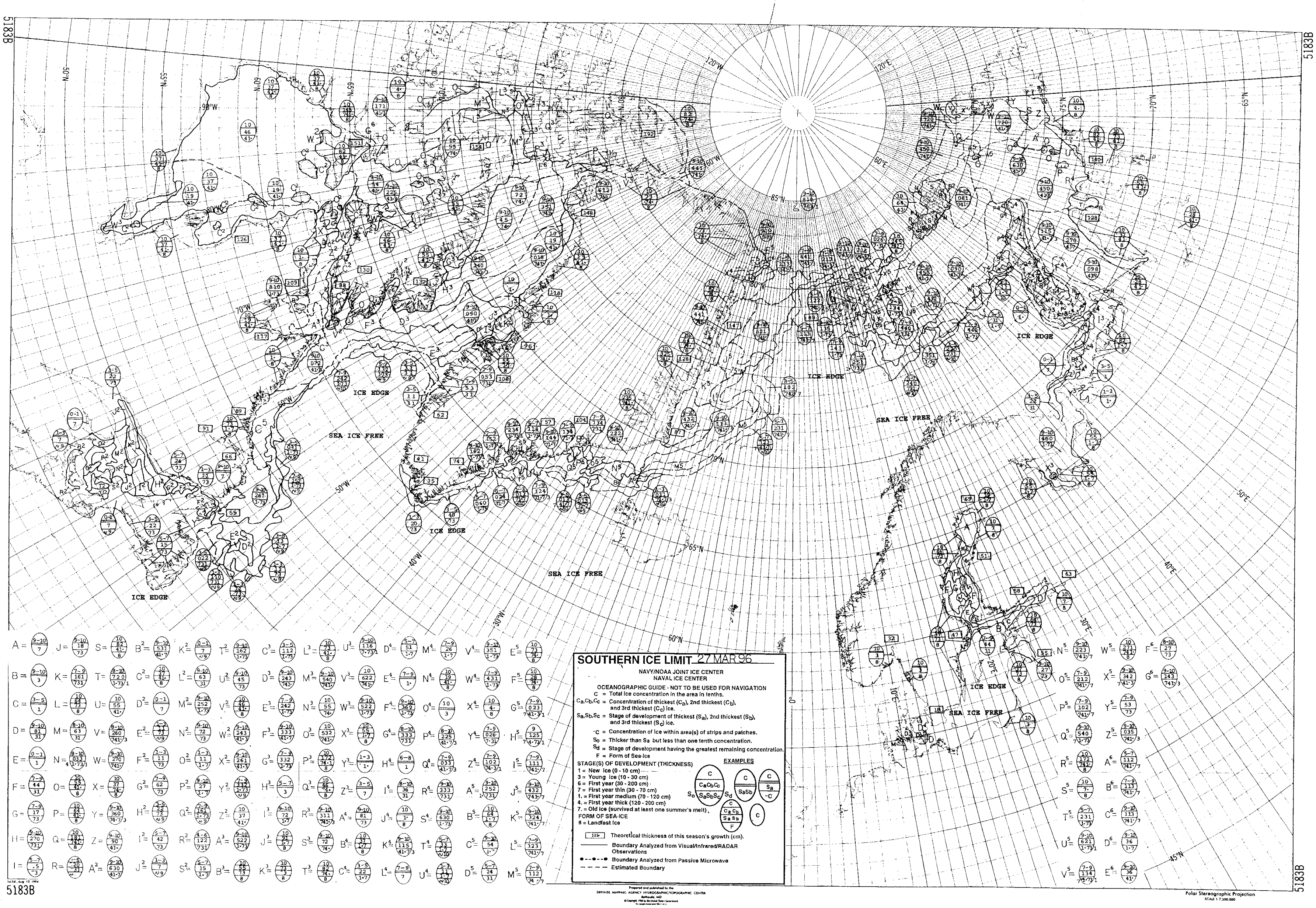
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SOUTHERN ICE LIMIT 27 MAR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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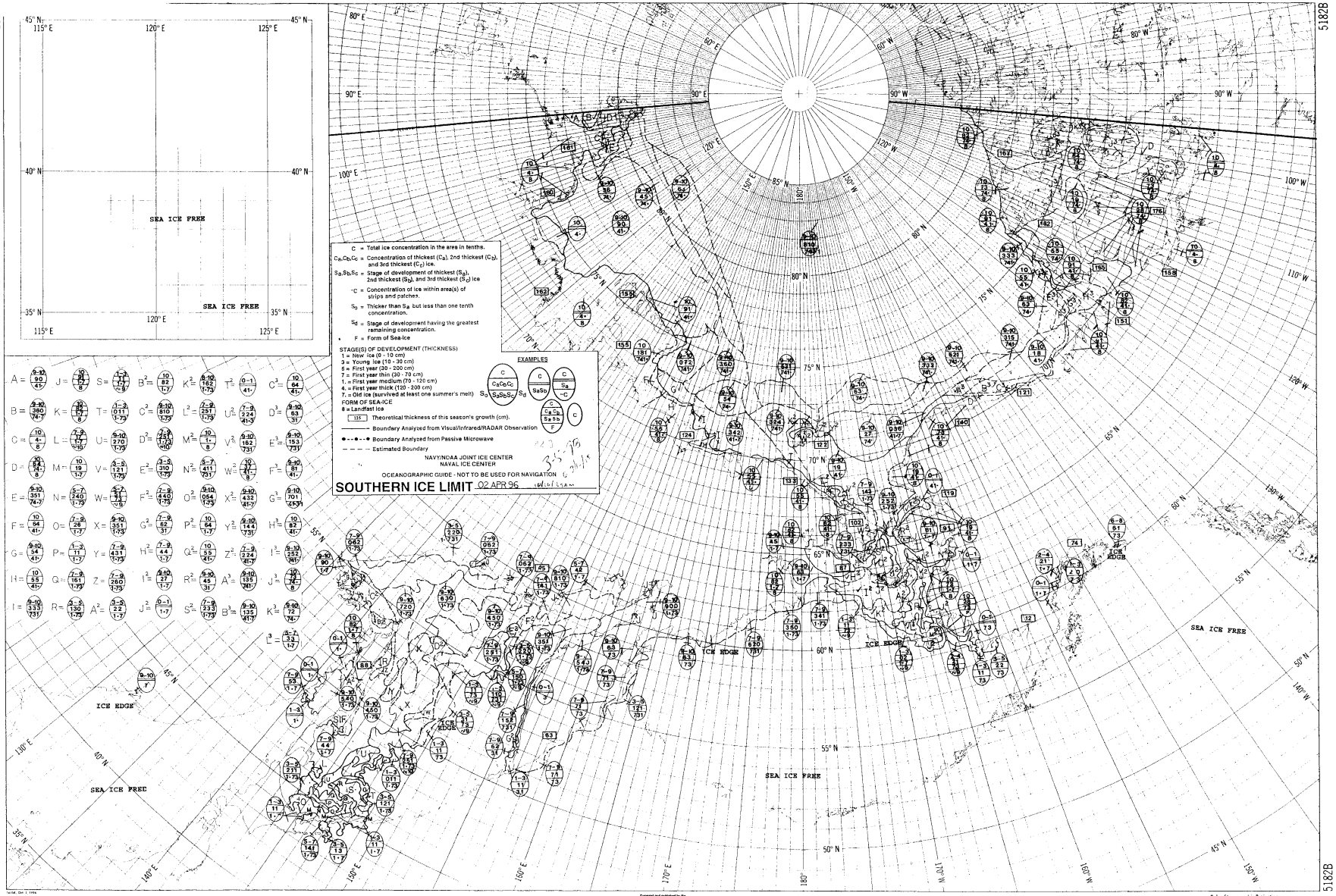
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, MD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8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 02 APR 96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

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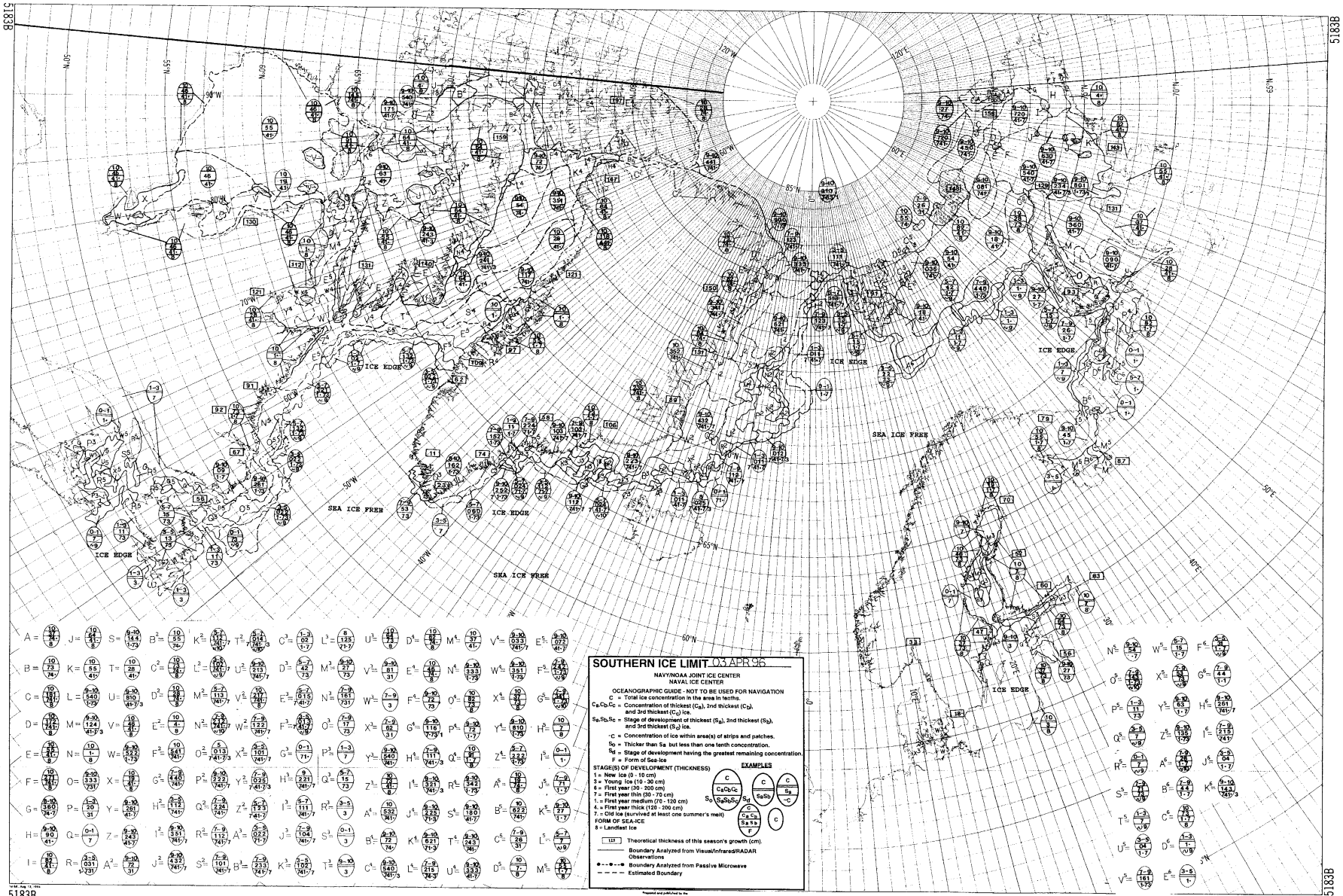
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SOUTHERN ICE LIMIT 03 APR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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FORM OF SEA ICE
8 = Landfast ice
EXAMPLES
133 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Polar Stereographic Projection
SCALE 1:7,500,000
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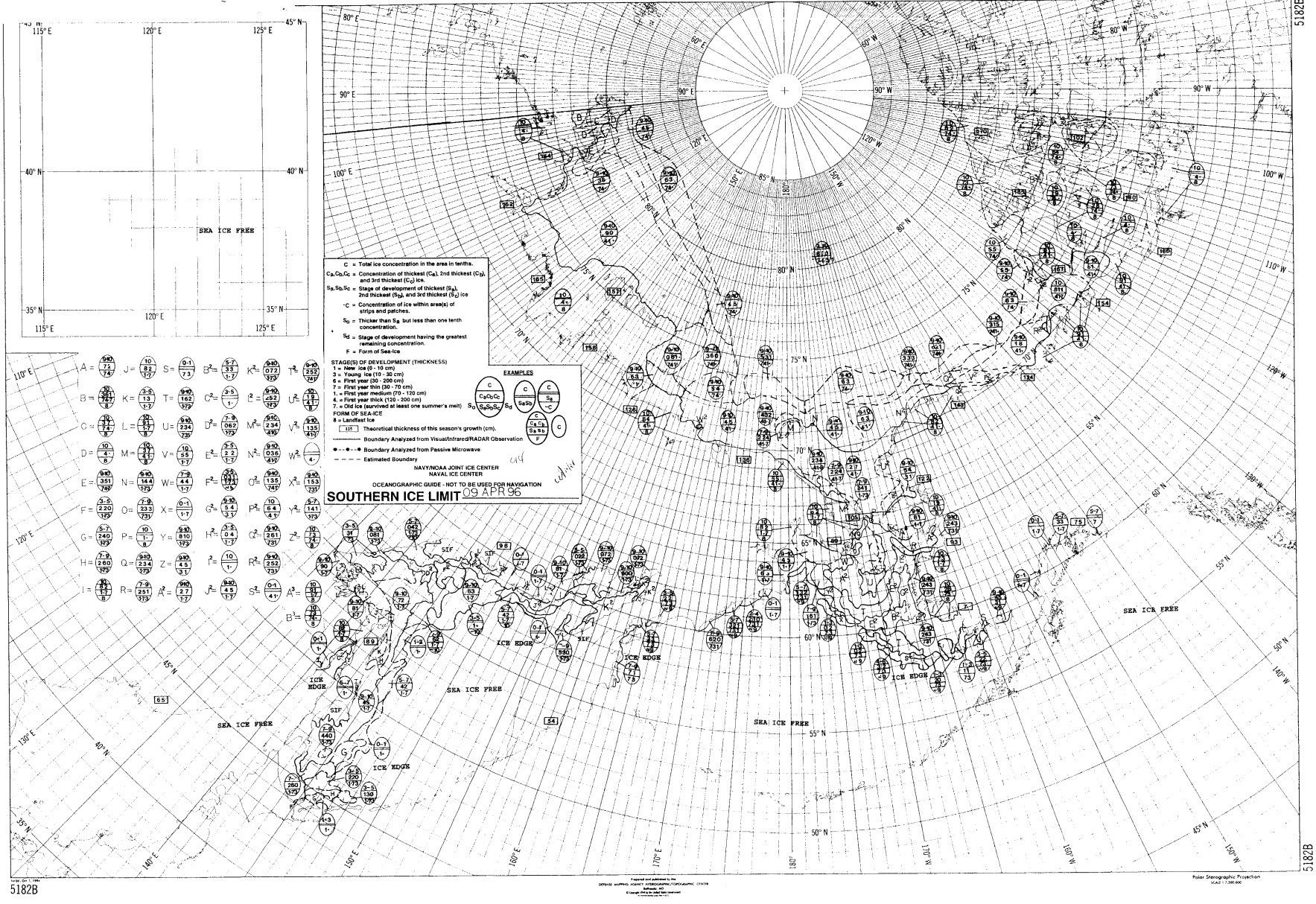
SEA ICE FREE
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Boundary Analyzed from Passive Microwave
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EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 09 APR 96
ICE EDGE
SIF
Polar Stereographic Projection

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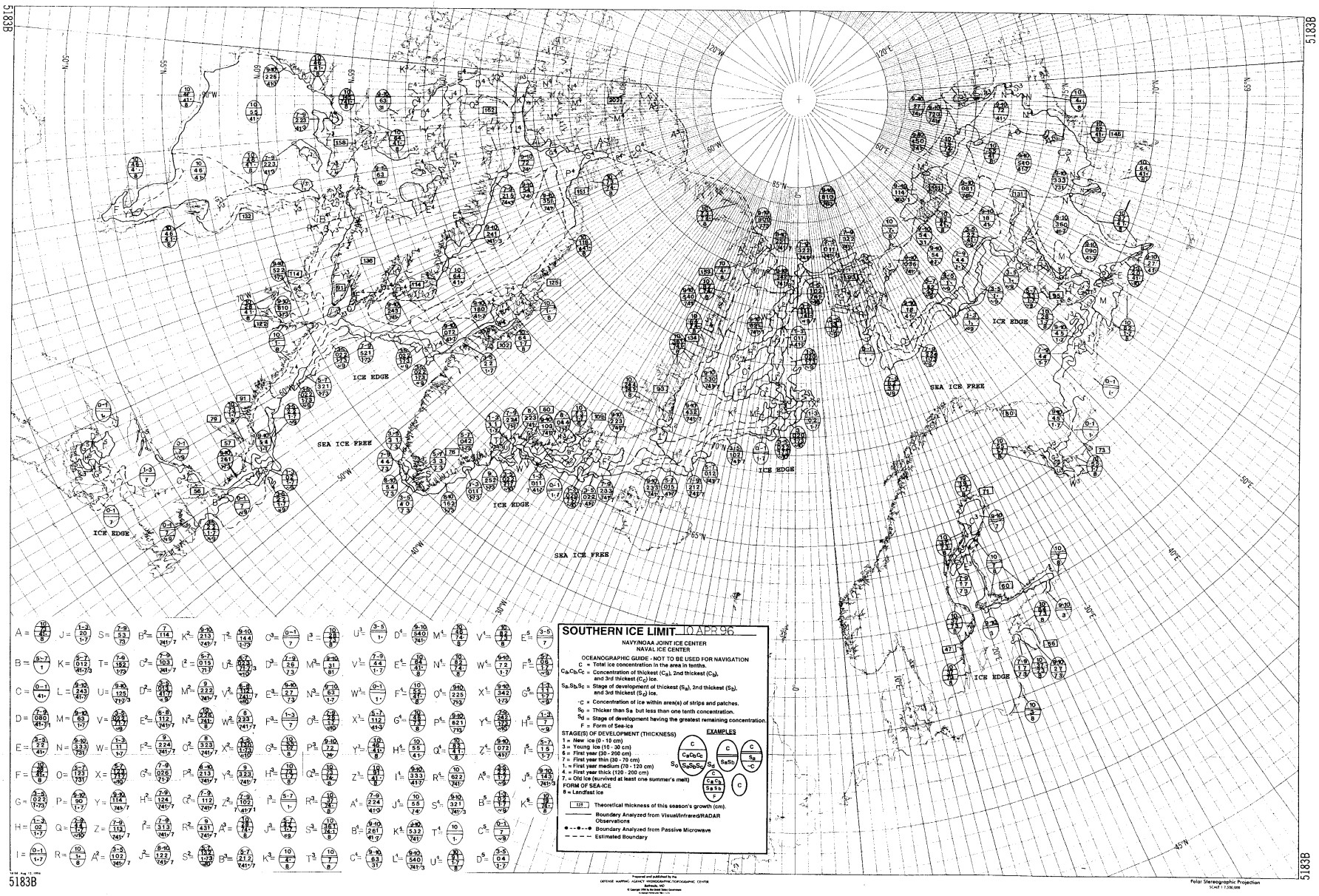
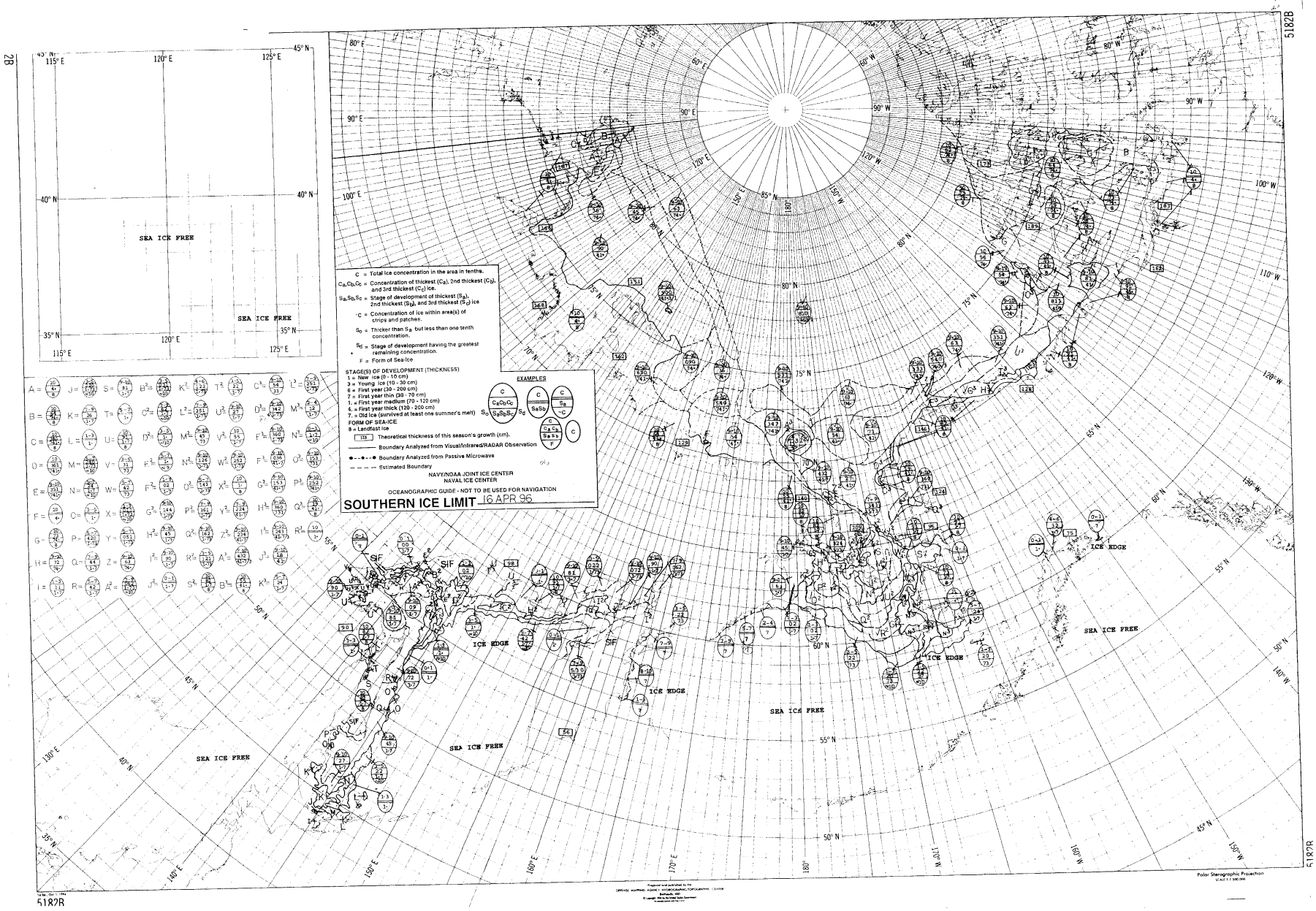
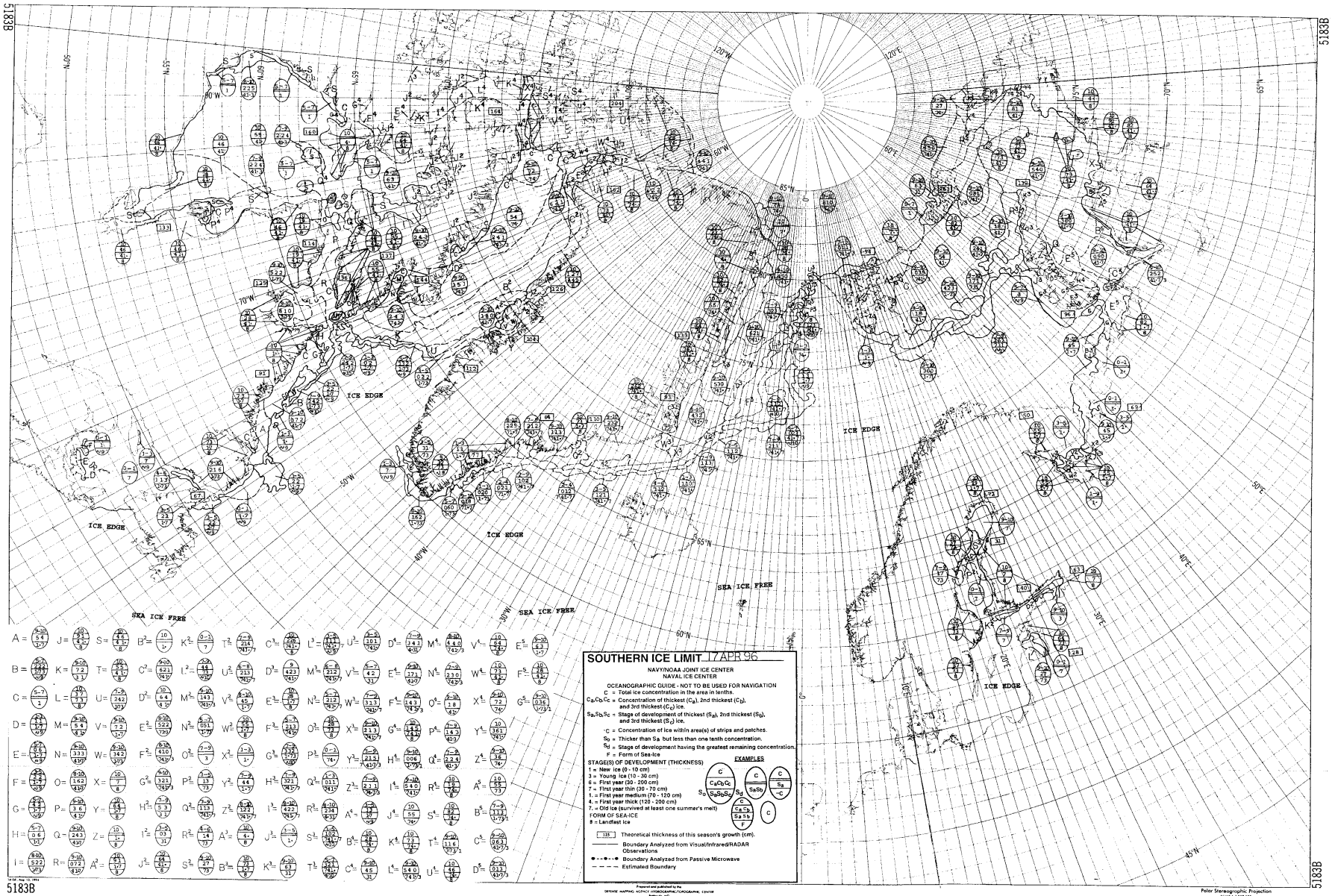

SOUTHERN ICE LIMIT 10 APR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
-C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sg = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = Young (30 - 200 cm)
4 = First year thin (30 - 70 cm)
5 = First year medium (70 - 120 cm)
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
5183B


C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
C_v = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
3 = Young Ice (10 - 30 cm)
4 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1 = First year medium (70 - 120 cm)
4 = First year thick (120 - 200 cm)
7 = Old Ice (survived at least one summer's melt)
8 = Landfast Ice
FORM OF SEA-ICE
15 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 16 APR 96
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
5182B
5182R



SOUTHERN ICE LIMIT 17APR 96

NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

-C = Concentration of ice within area(s) of strips and patches.

S_g = Thicker than S_a but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea-Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)

FORM OF SEA-ICE
8 = Landfast ice

EXAMPLES

135 Theoretical thickness of this season's growth (cm).

Boundary Analyzed from Visual/Infrared/RADAR Observations

Boundary Analyzed from Passive Microwave

Estimated Boundary

Prepared and published by the
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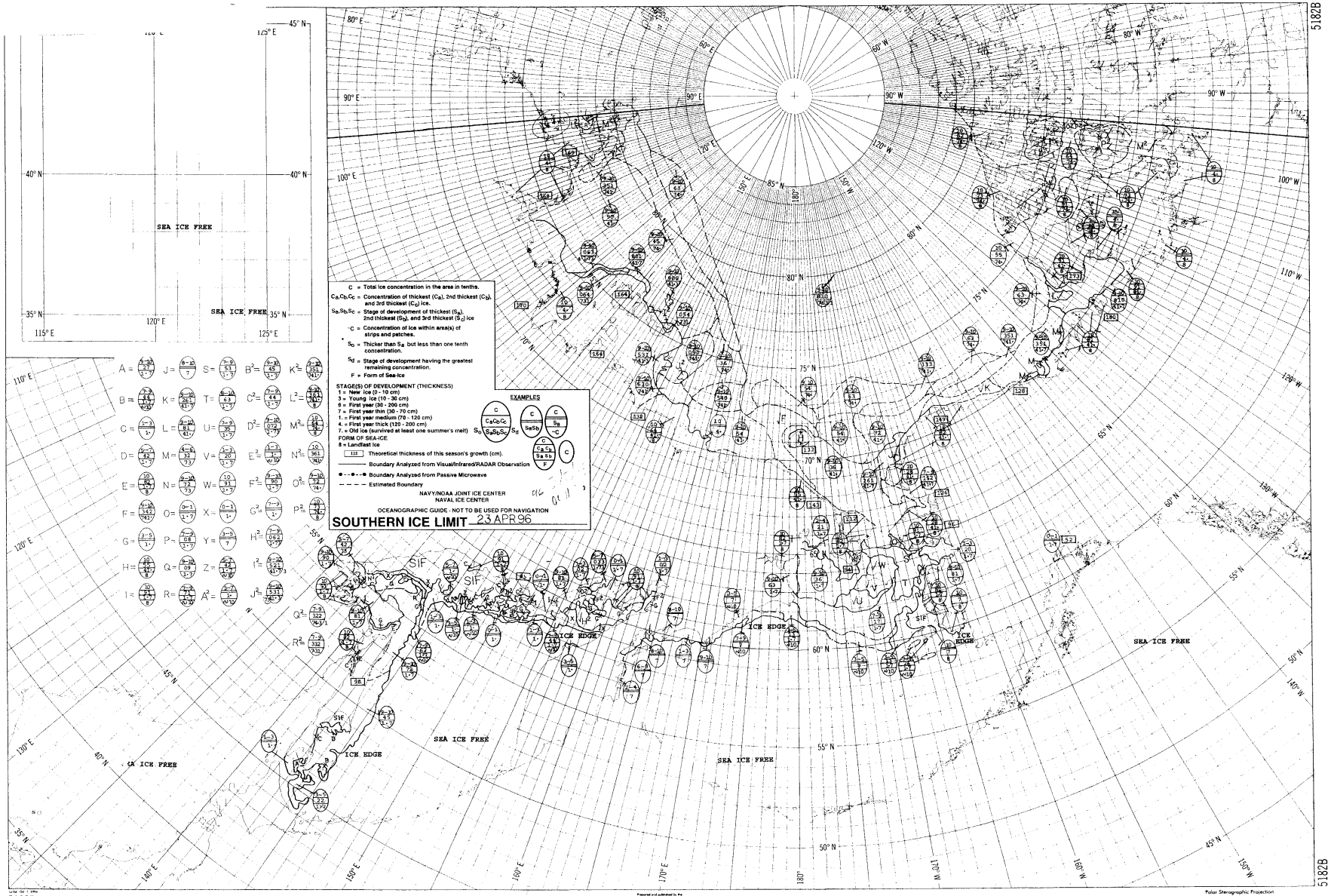
Bethesda, MD

Polar Stereographic Projection
SCALE 1:7,500,000

5183B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SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
-C = Concentration of ice within area(s) of strips and patches.
Sb = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
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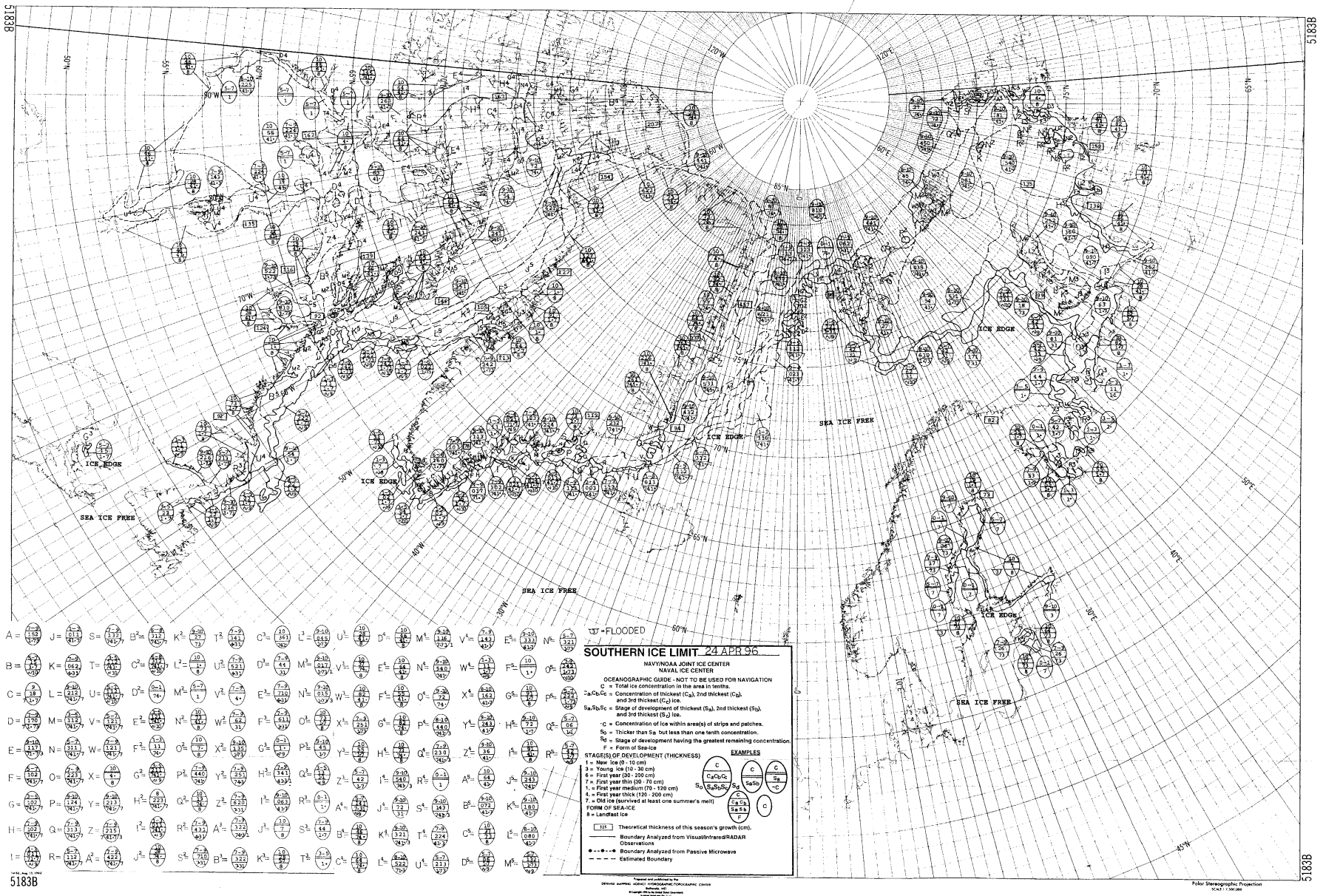
1 = First year medium (70 - 120 cm)
4 = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
8 = Landfast ice
FORM OF SEA-ICE
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 23 APR 96
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection

5182B


5183B
5183B
ICE EDGE
SEA ICE FREE
W=FLOODED
SOUTHERN ICE LIMIT 24 APR 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
-C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
2 = Young Ice (10 - 30 cm)
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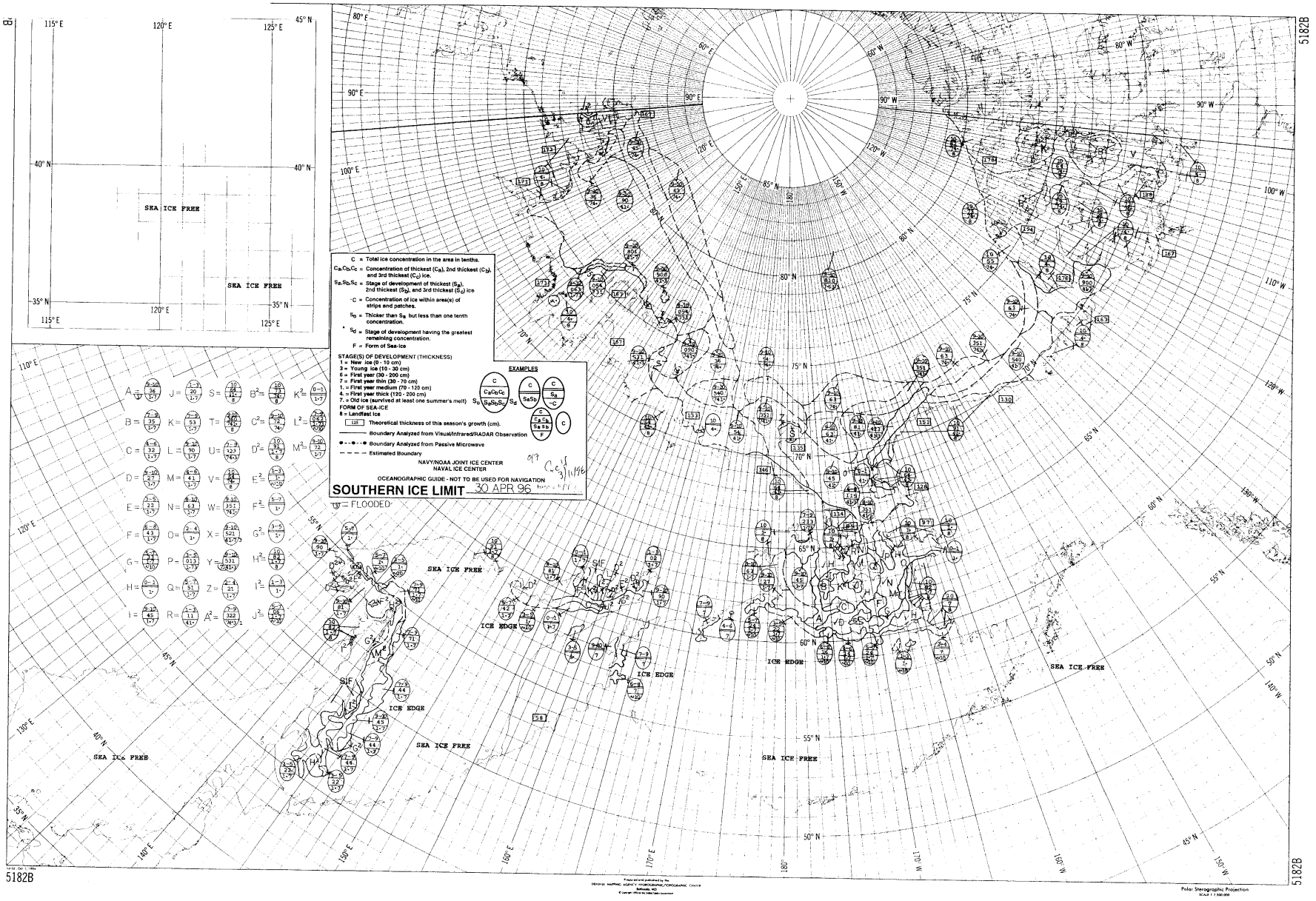
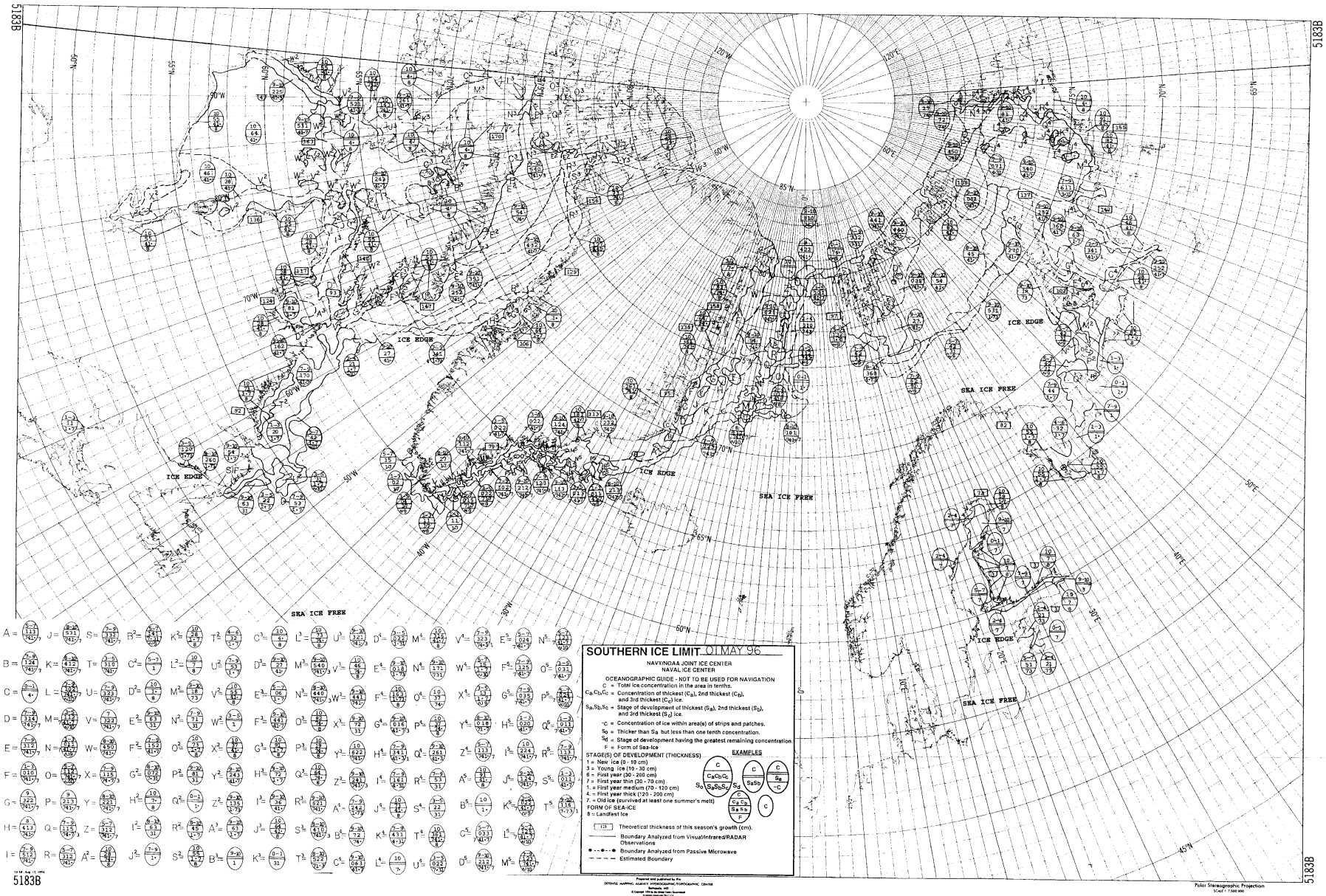
5 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Polar Stereographic Projection
SCALE 1:10,000,000
5183B


SEA ICE FREE
SEA ICE FREE
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
C = Concentration of ice within area(s) of strips and patches.
S_b = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
6 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast ice
EXAMPLES
120 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 30 APR 96
U = FLOODED
ICE EDGE
SEA ICE FREE
5182B
5182B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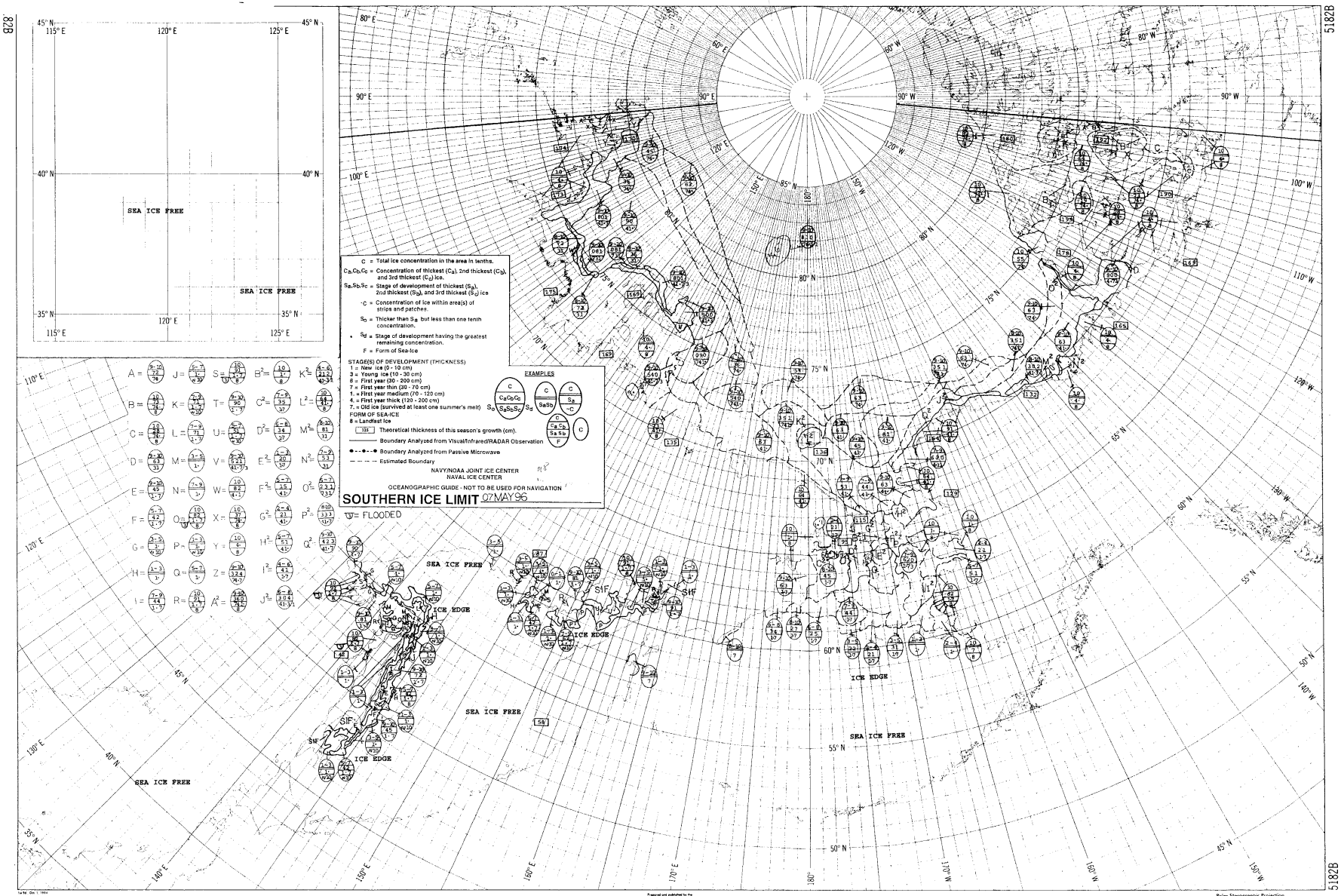
5183B
ICE EDGE
SEA ICE FREE
SOUTHERN ICE LIMIT 01MAY 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
-C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
3 = Young Ice (10 - 30 cm)
6 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA ICE
8 = Landfast Ice
EXAMPLES
115 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Polar Stereographic Projection
Scale 1:7 500 000
5183B


C = Total ice concentration in the area in tenths.
$C_A C_B C_C$ = Concentration of thickest (C_A), 2nd thickest (C_B), and 3rd thickest (C_C) ice.
$S_A S_B S_C$ = Stage of development of thickest (S_A), 2nd thickest (S_B), and 3rd thickest (S_C) ice
-C = Concentration of ice within area(s) of strips and patches.
S_D = Thicker than S_A but less than one tenth concentration.
* S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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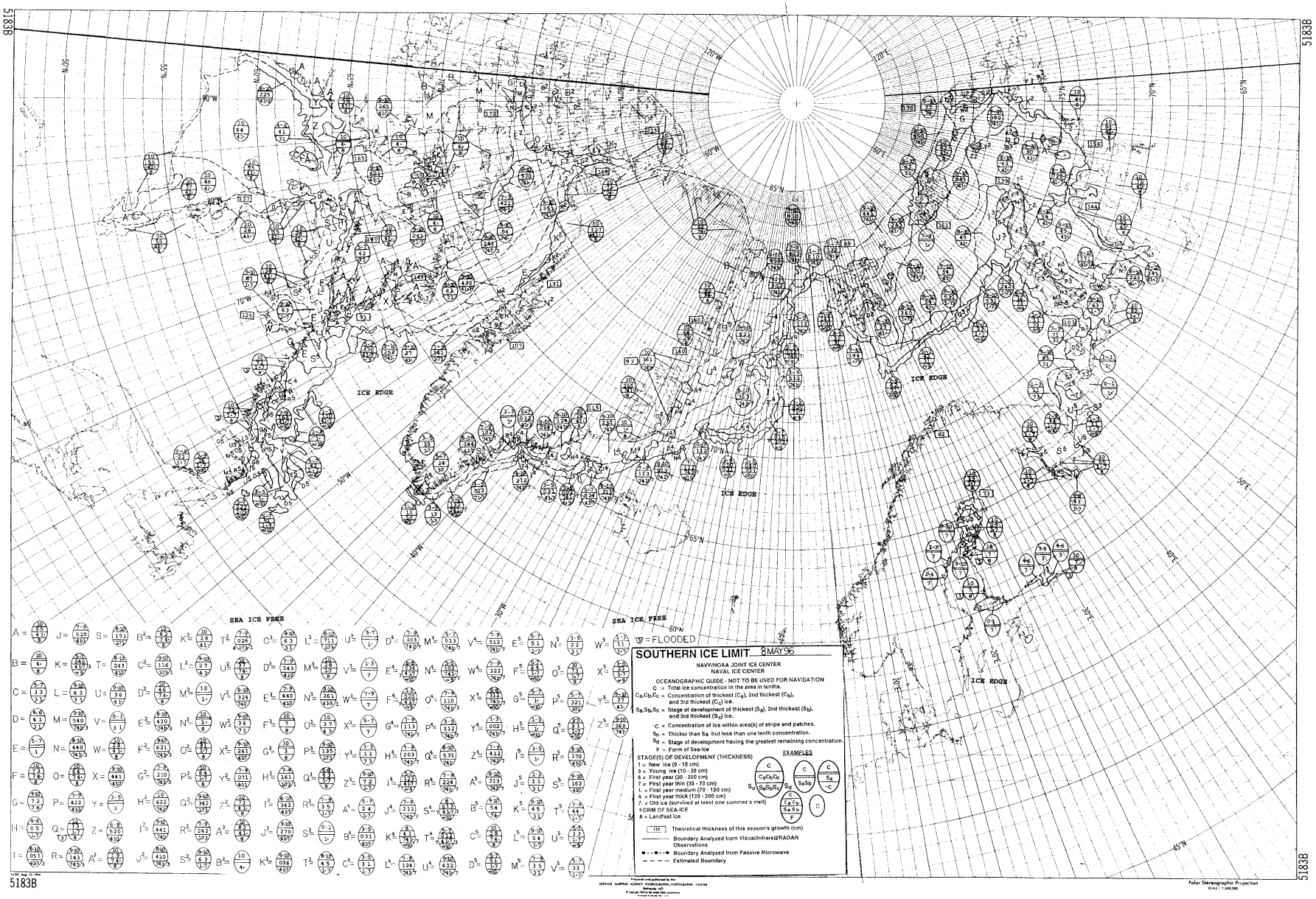
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 07MAY96
W= FLOODED
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
5182B


SEA ICE FREE
SEA ICE FREE
ICE EDGE
ICE EDGE
ICE EDGE
ICE EDGE
W = FLOODED
SOUTHERN ICE LIMIT 8MAY96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
SCALE 1:7,500,000
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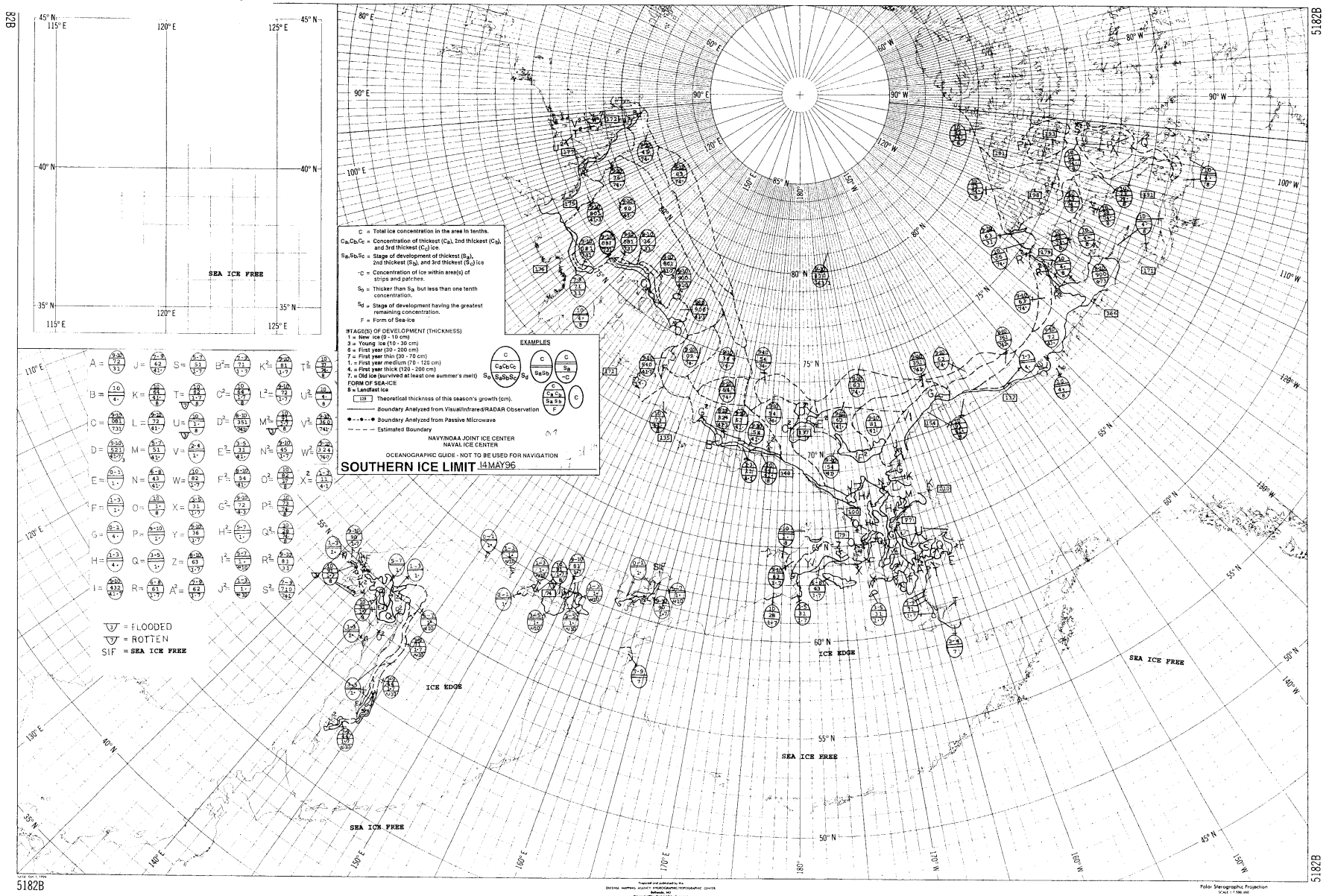
5183B



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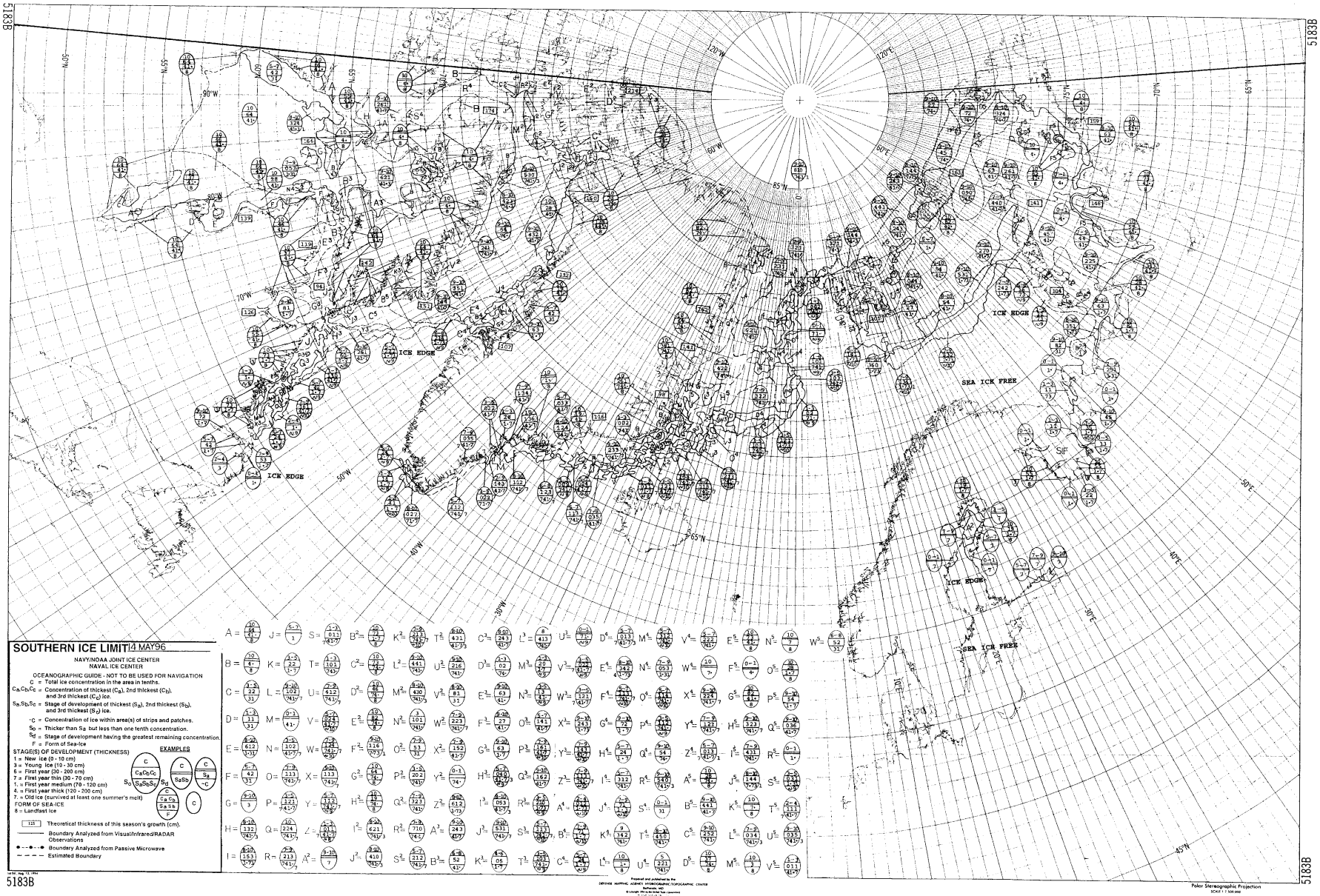
Polar Stereographic Projection
SCALE 1:7 500 000



SOUTHERN ICE LIMIT 4 MAY 96

NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

-C = Concentration of ice within area(s) of strips and patches.

S_o = Thicker than S_a but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea-Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
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7. = Old ice (survived at least one summer's melt)

FORM OF SEA-ICE
8 = Landfast Ice

EXAMPLES

125 Theoretical thickness of this season's growth (cm).

Boundary Analyzed from Visual/Infrared/RADAR Observations

Boundary Analyzed from Passive Microwave

Estimated Boundary

Prepared and published by the
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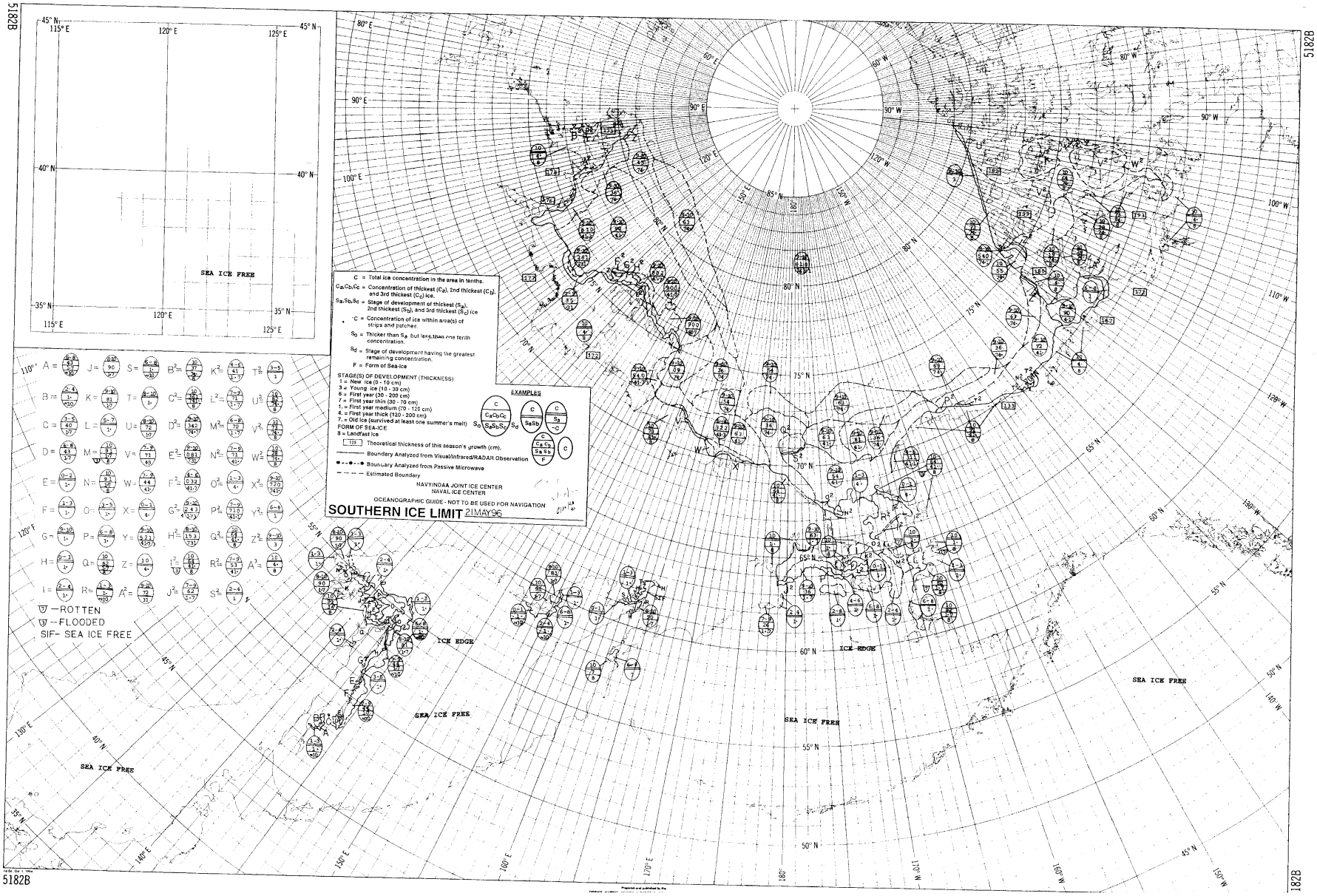
Bethesda, MD

Polar Stereographic Projection
SCALE 1 : 5,000,000

5183B


5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
Ca/Cb/Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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"C" = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
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F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
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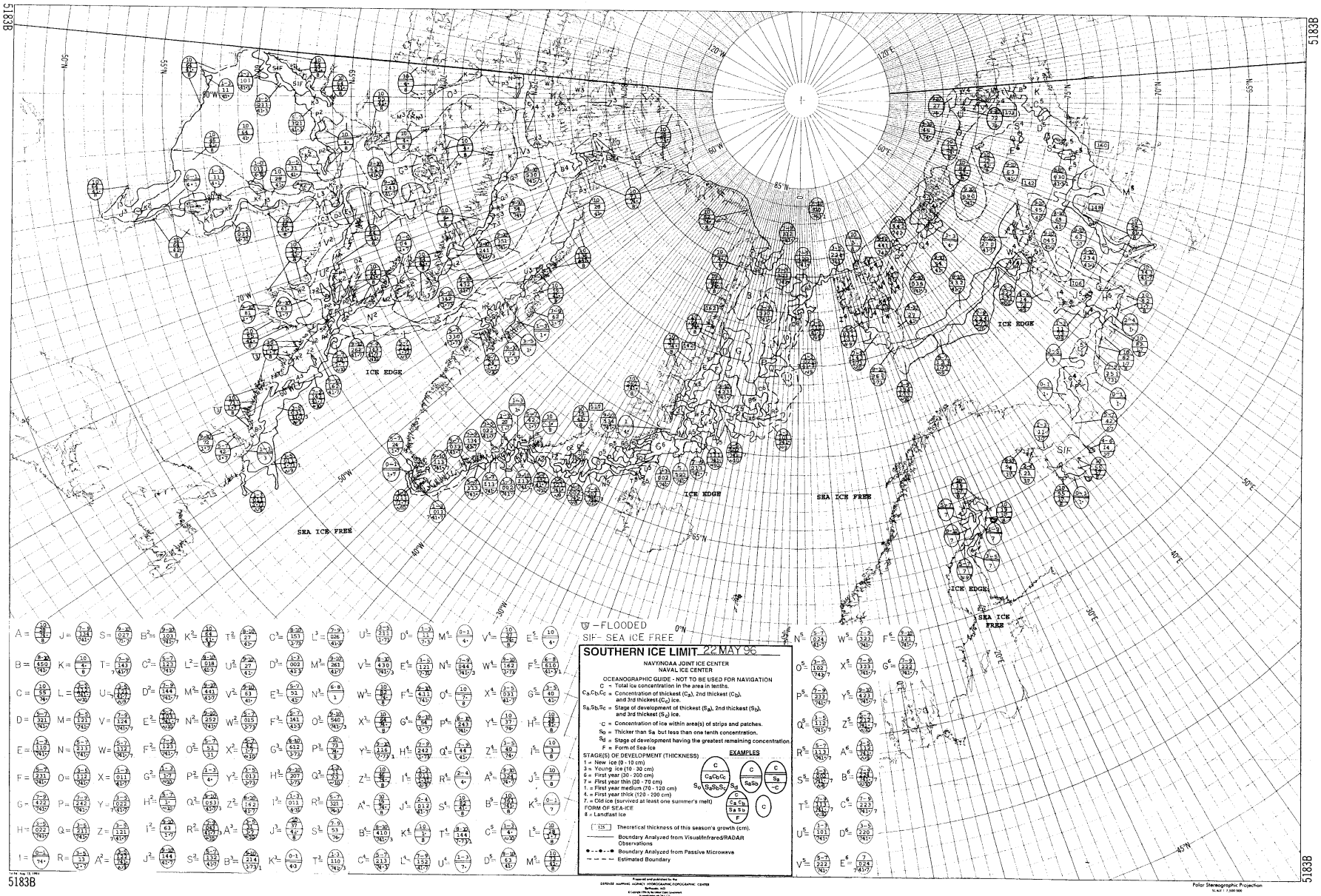
8 = Landfast Ice
FORM OF SEA-ICE
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 21MAY96
-ROTTEN
-FLOODED
SIF- SEA ICE FREE
ICE EDGE
SEA ICE FREE
5182B


5183B
ICE EDGE
SEA ICE FREE
SIF
W-FLOODED
SIF- SEA ICE FREE
SOUTHERN ICE LIMIT 22 MAY 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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-C = Concentration of ice within area(s) of strips and patches.
Sa = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
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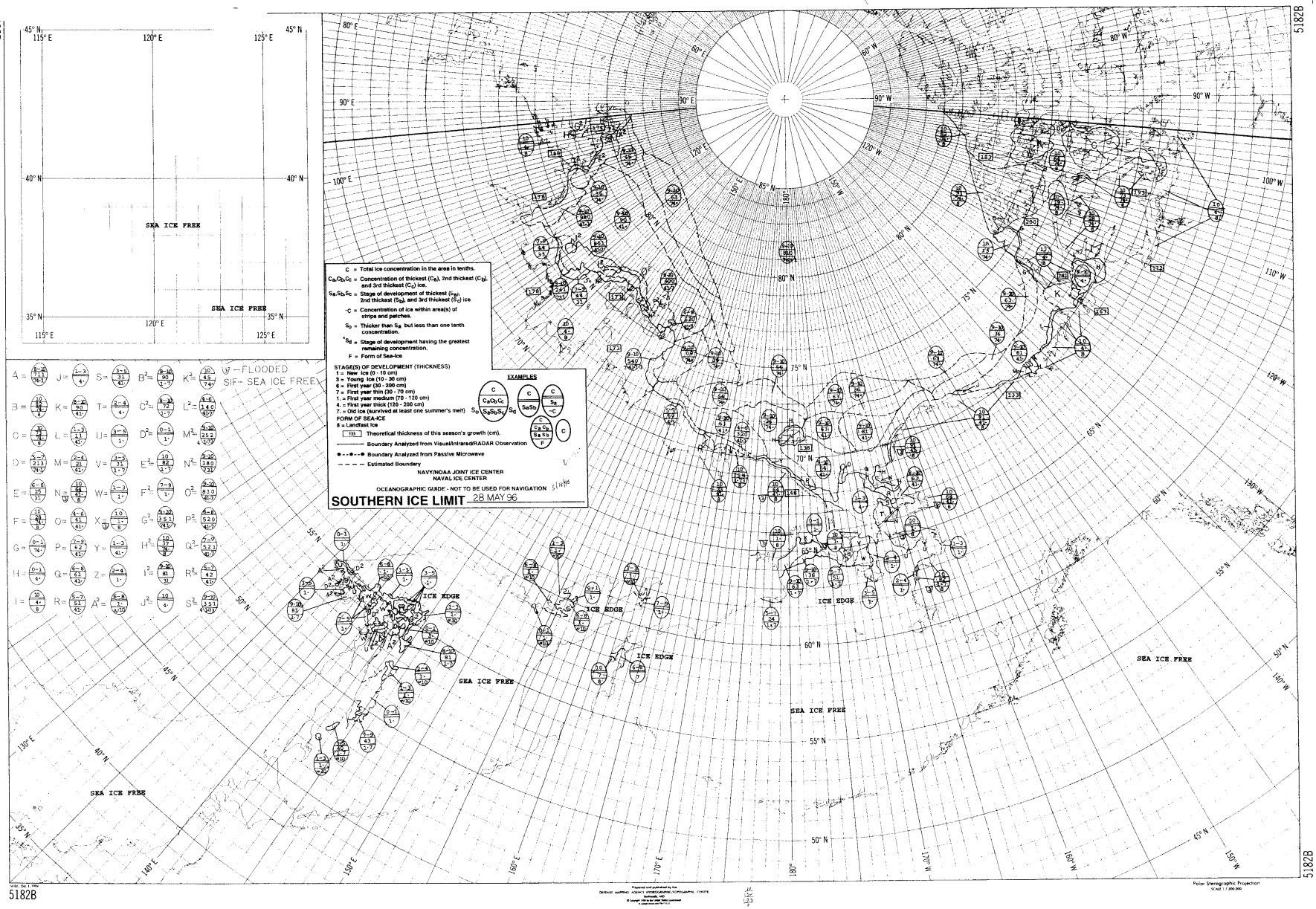
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection


45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
Ca Cb Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 28 MAY 96
-FLOODED
SIF- SEA ICE FREE
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

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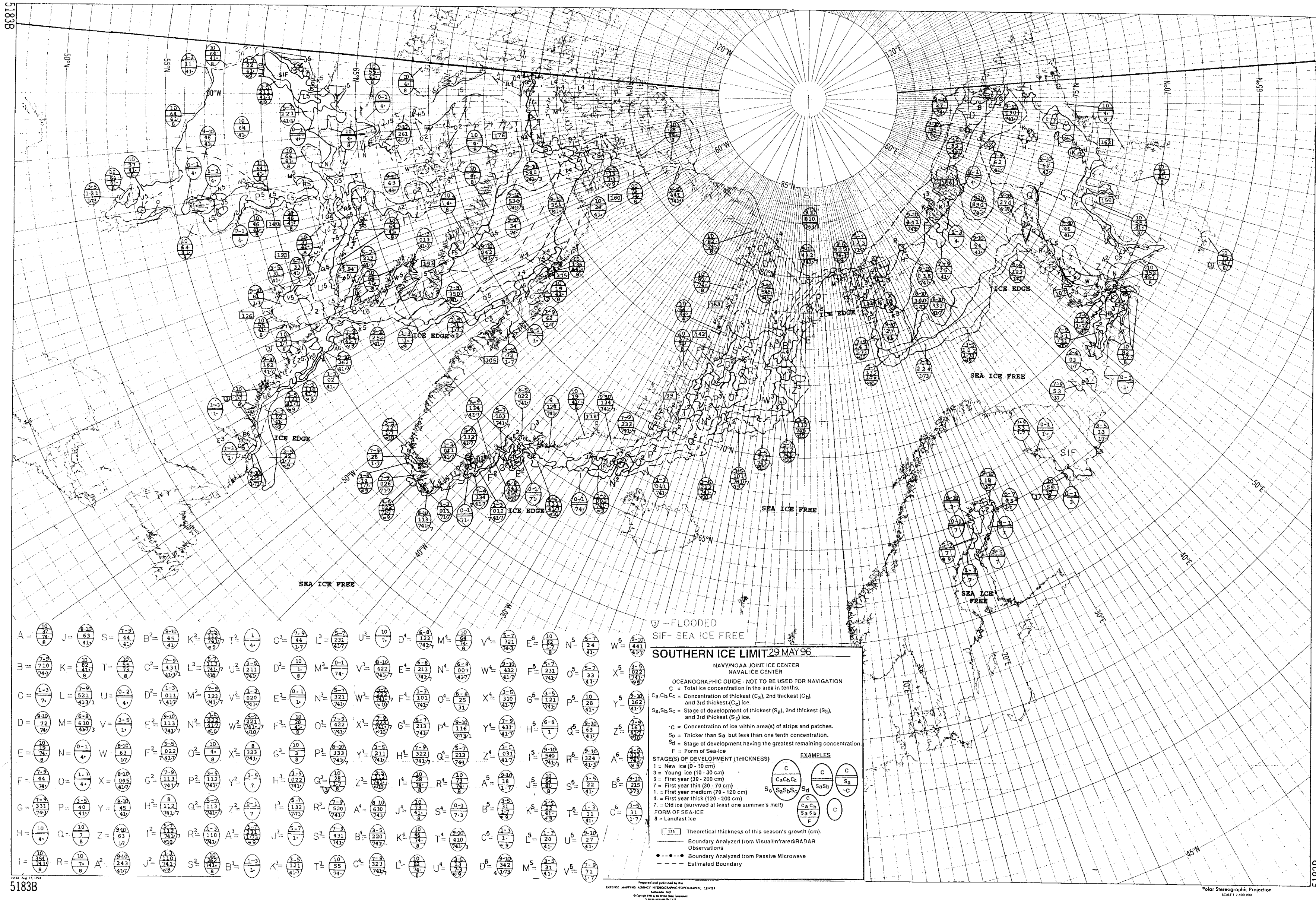

5183B
ꓵ -FLOODED
SIF- SEA ICE FREE
SOUTHERN ICE LIMIT 29 MAY 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
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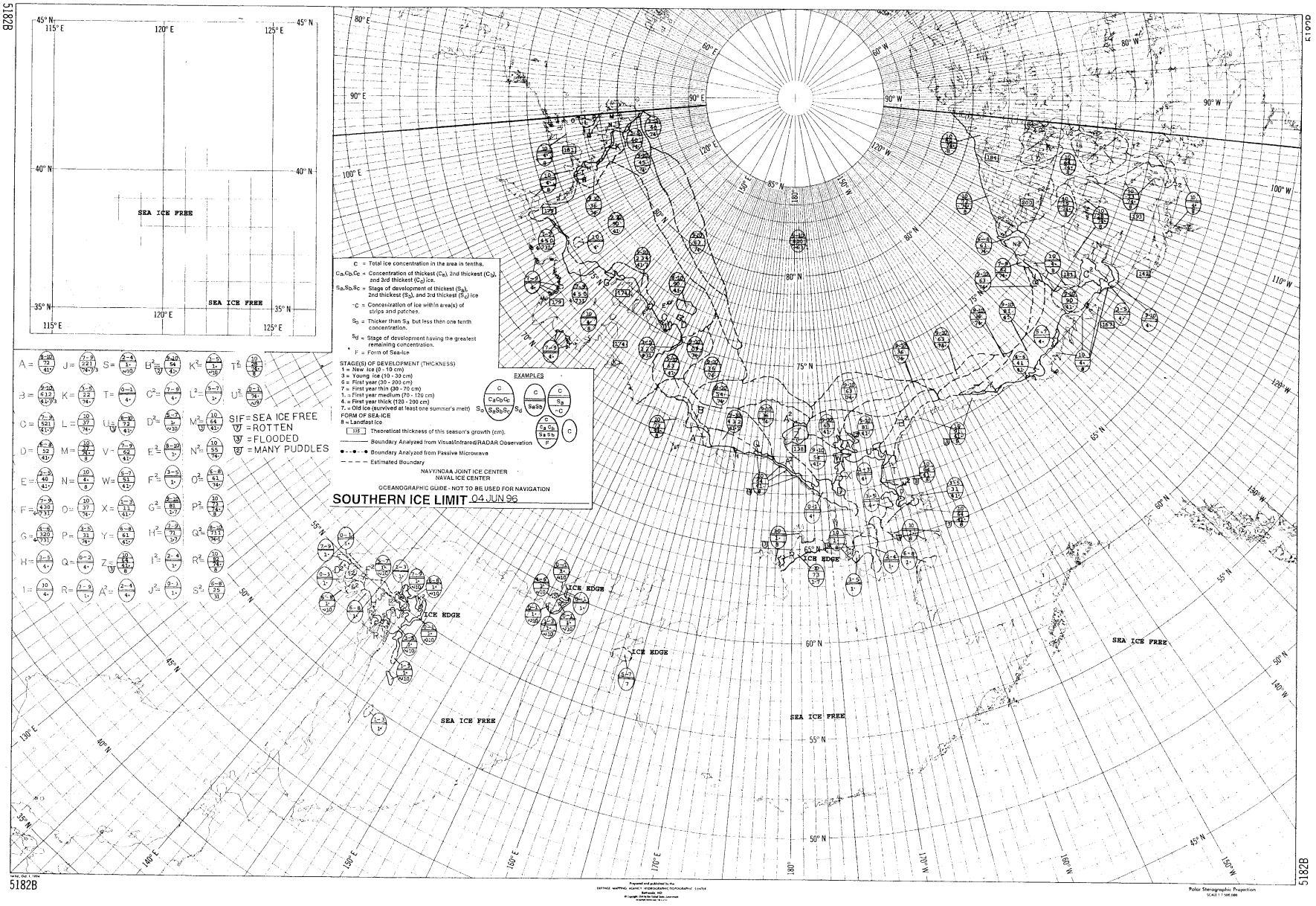
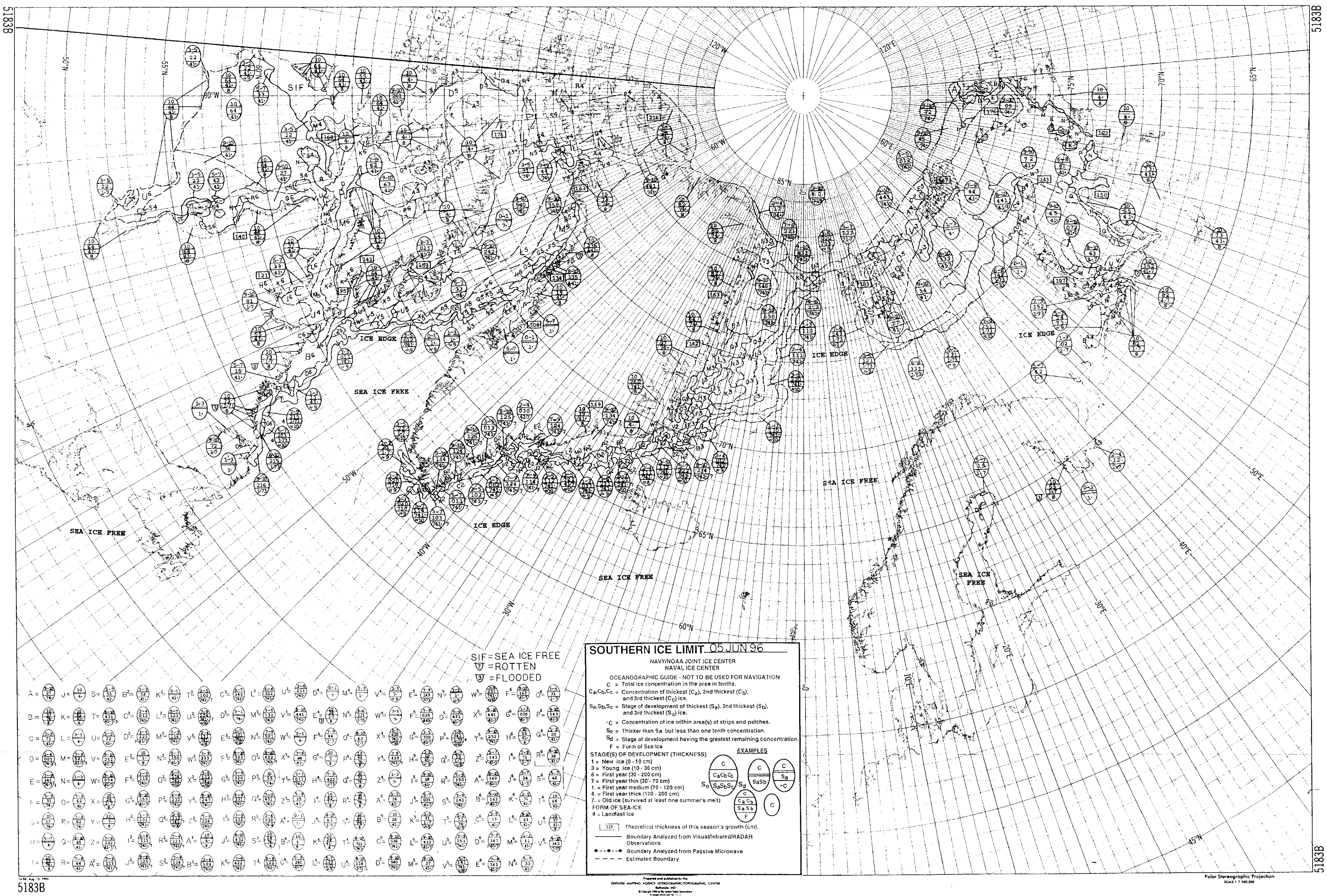

SEA ICE FREE
SEA ICE FREE
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
·C = Concentration of ice within area(s) of strips and patches.
Sd = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
3 = Young Ice (10 - 30 cm)
6 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1 = First year medium (70 - 120 cm)
4 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
SIF = SEA ICE FREE
W = ROTTEN
F = FLOODED
M = MANY PUDDLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 04 JUN 96
ICE EDGE
ICE EDGE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
SEA ICE FREE
Polar Stereographic Projection
SCALE 1:7 500 000
5182B
5182B


5183B
SOUTHERN ICE LIMIT 05 JUN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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So = Thicker than Sa but less than one tenth concentration.
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7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SIF=SEA ICE FREE
=ROTTEN
=FLOODED
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, MD

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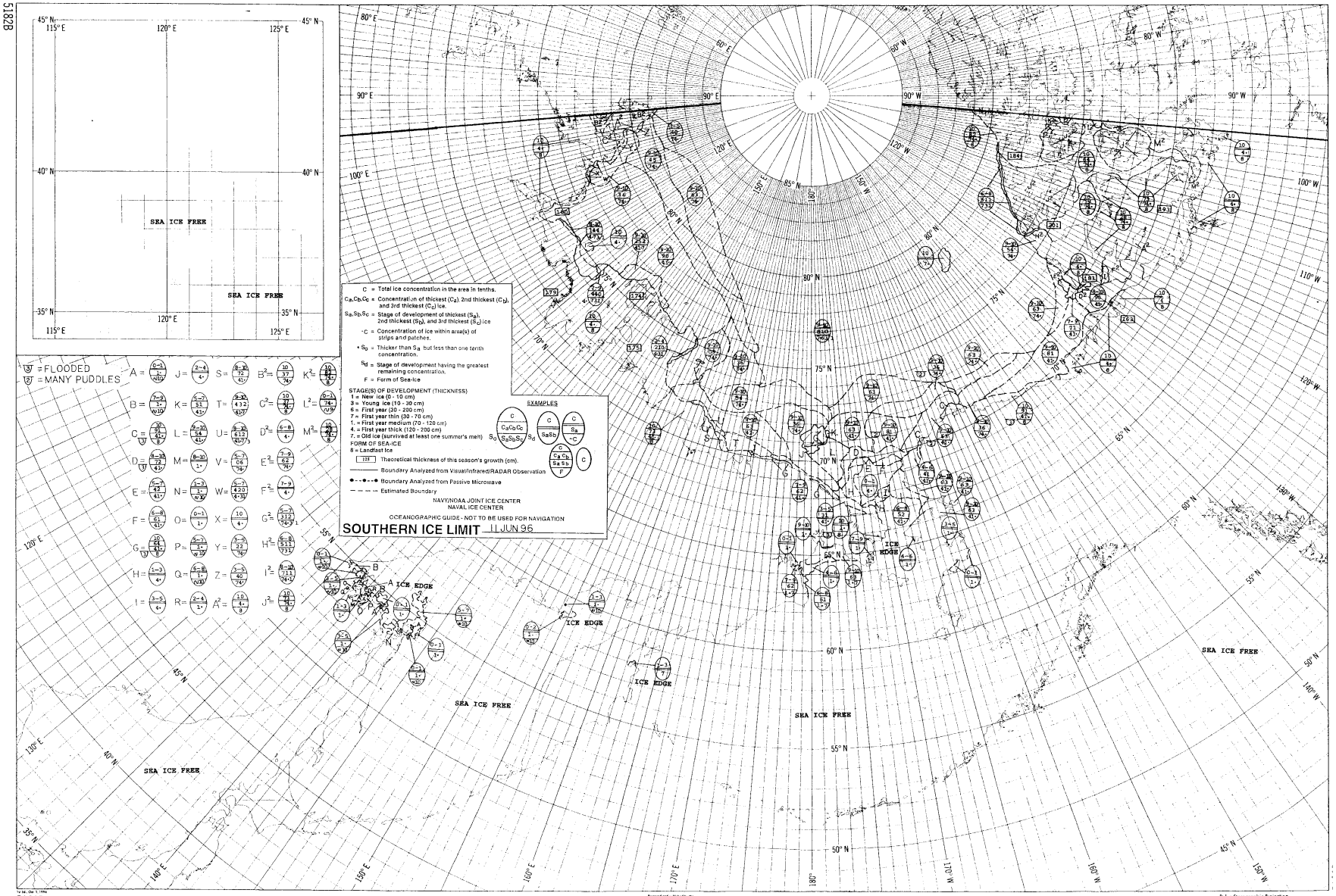
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
Sa,Sb,Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
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* Sa = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
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1 = New ice (0 - 10 cm)
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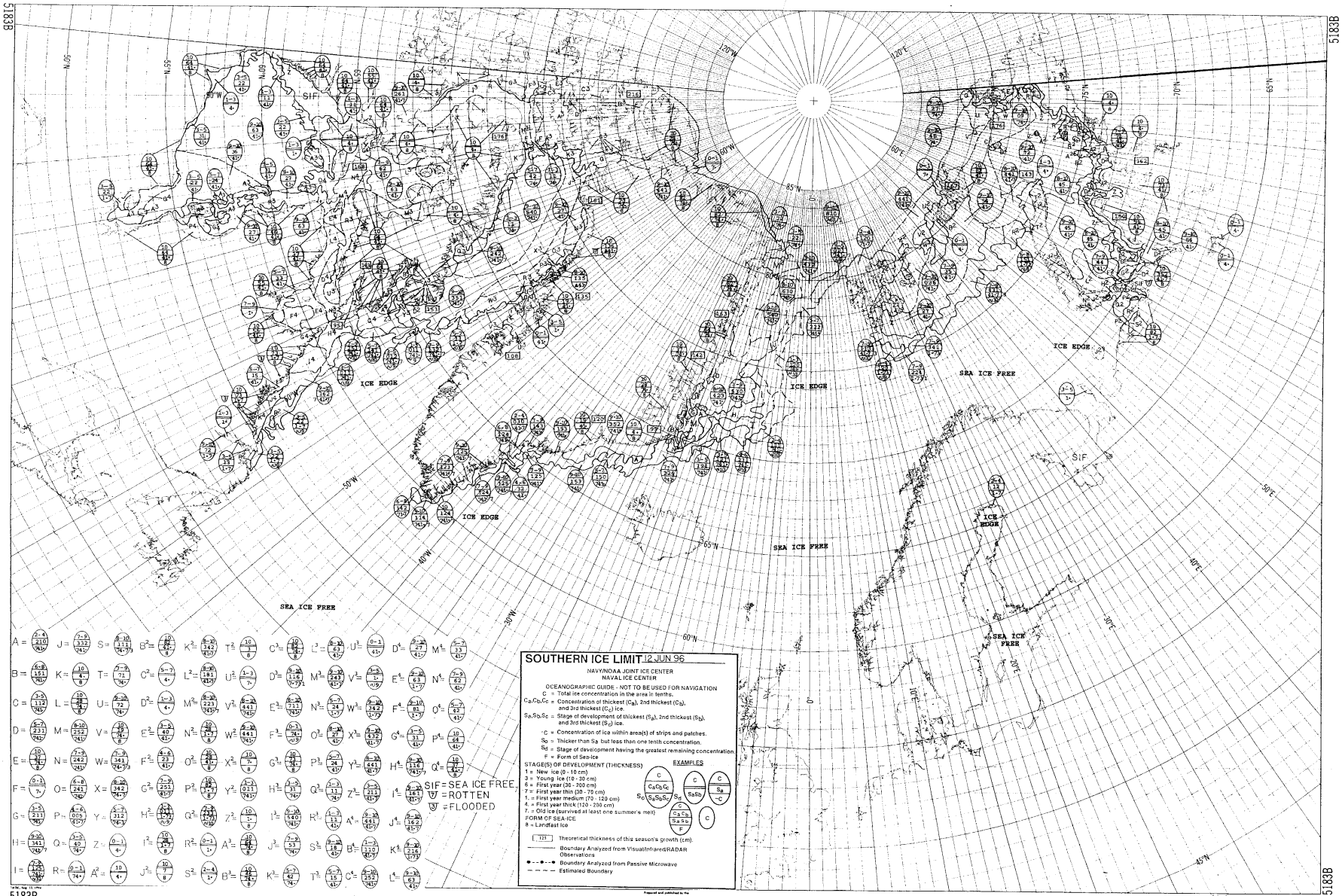
FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 11 JUN 96
FLOODED
MANY PUDDLES
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

5182B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5183B
5183B
5183B
ICE EDGE
SEA ICE FREE
SIF
SIF=SEA ICE FREE
▽ =ROTTEN
▽ =FLOODED
SOUTHERN ICE LIMIT 12 JUN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_a C_b C_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_a S_b S_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
-C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
121 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the
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Bethesda, MD
Polar Stereographic Projection
SCALE 1 : 5,500,000
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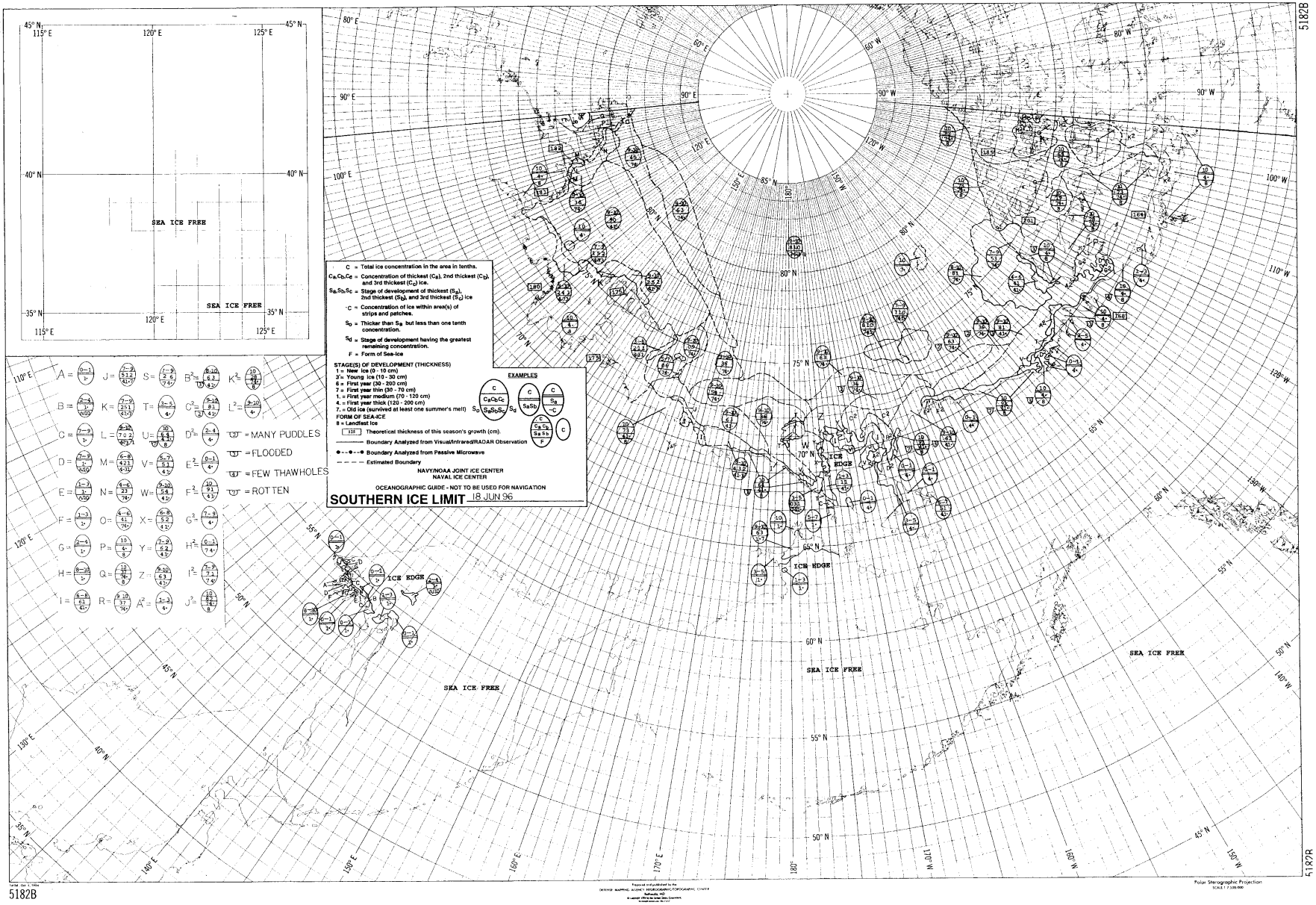
5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice
C = Concentration of ice within area(s) of strips and patches.
S_p = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
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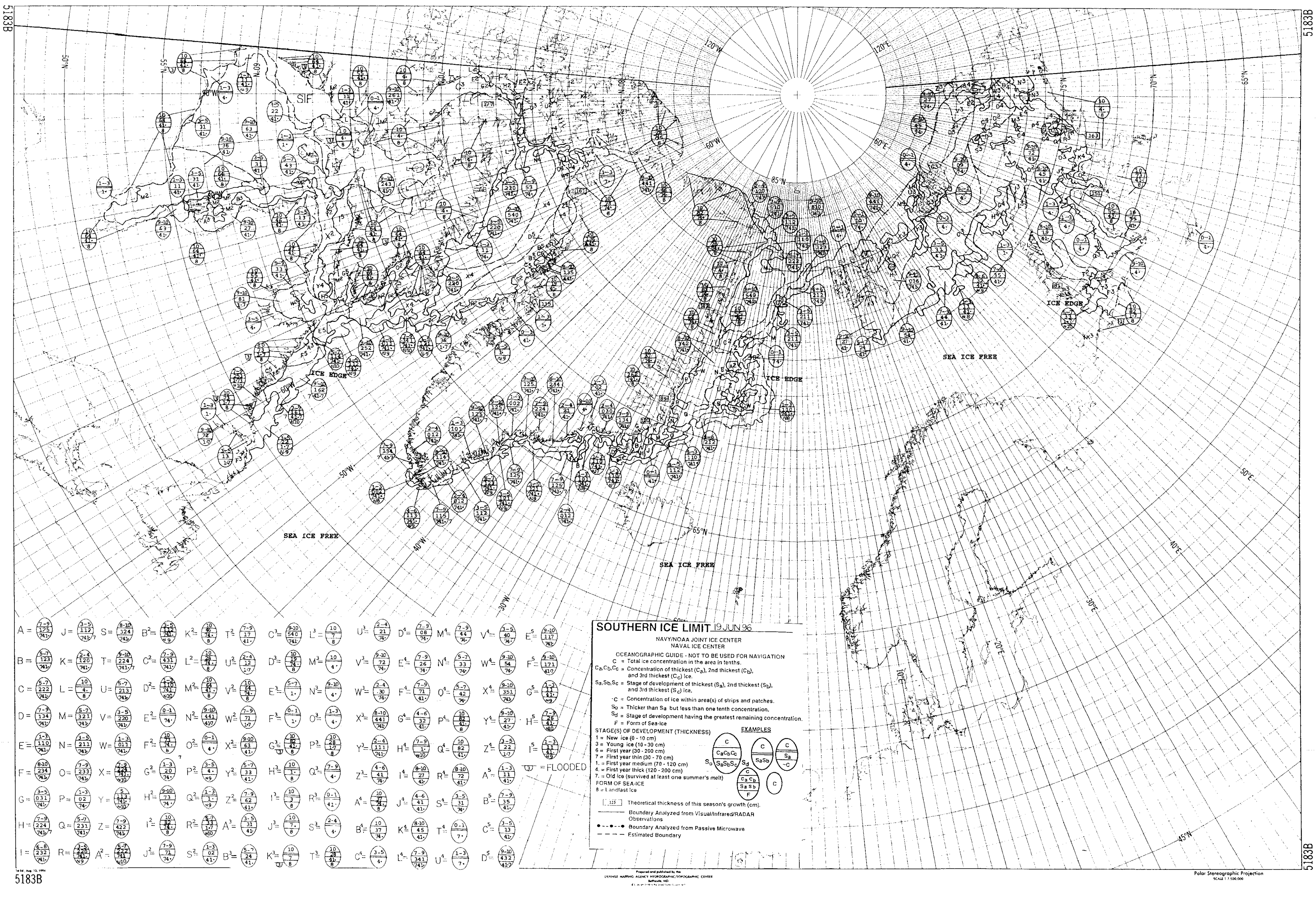
6 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
8 = Landfast Ice
FORM OF SEA-ICE
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 18 JUN 96
= MANY PUDDLES
= FLOODED
= FEW THAWHOLES
= ROTTEN
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
SCALE 1:3 000 000
5182R



SOUTHERN ICE LIMIT 19 JUN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
Sa,Sb,Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
·C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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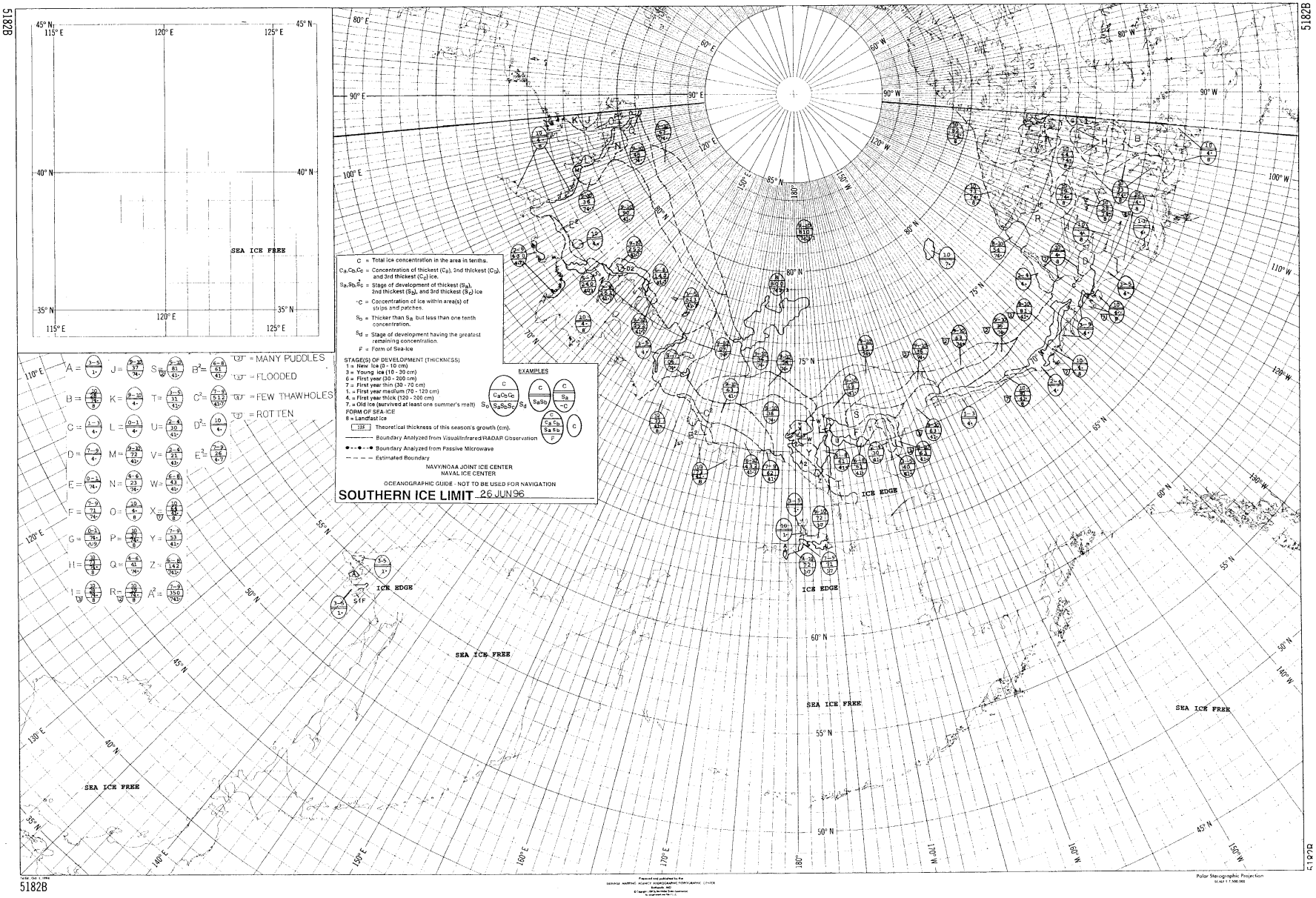
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
=FLOODED
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
5183B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45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
-C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
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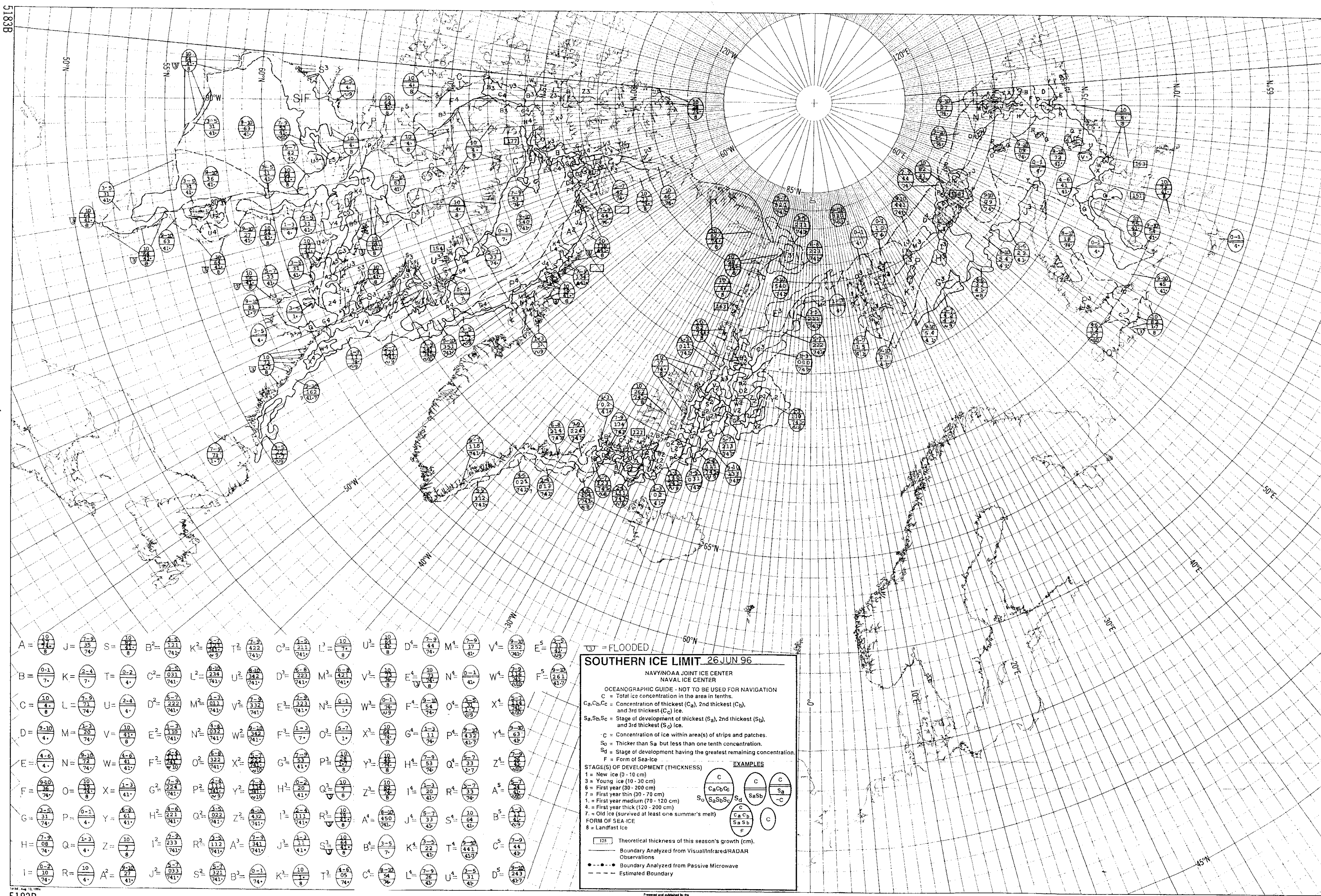
FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 26 JUN 96
= MANY PUDDLES
= FLOODED
= FEW THAWHOLES
= ROTTEN
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
5182B


= FLOODED
SOUTHERN ICE LIMIT 26 JUN 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
Sa,Sb,Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
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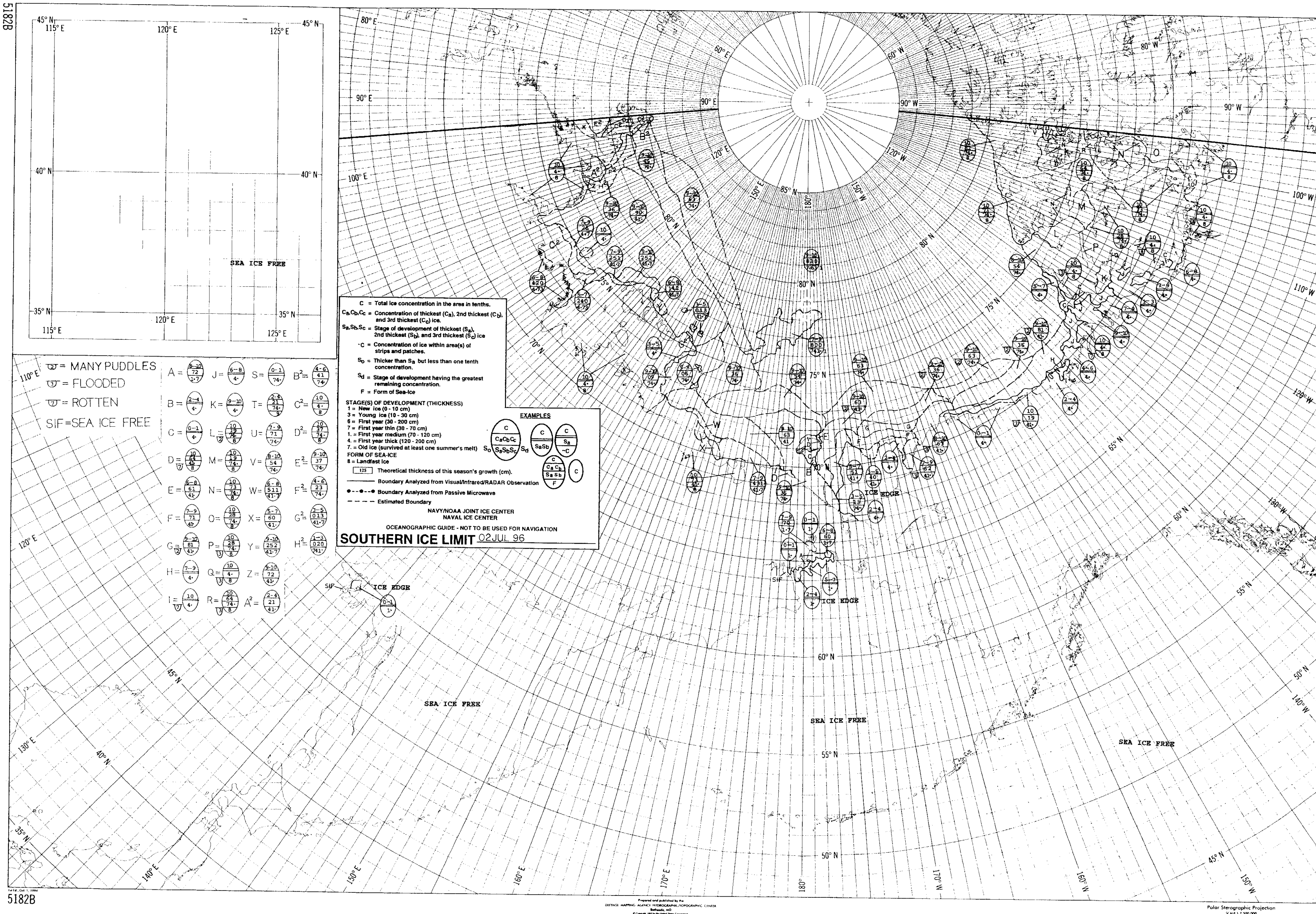
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection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SEA ICE FREE
MANY PUDDLES
= FLOODED
= ROTTEN
SIF=SEA ICE FREE
C = Total ice concentration in the area in tenths.
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So = Thicker than Sa but less than one tenth concentration.
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1 = New ice (0 - 10 cm)
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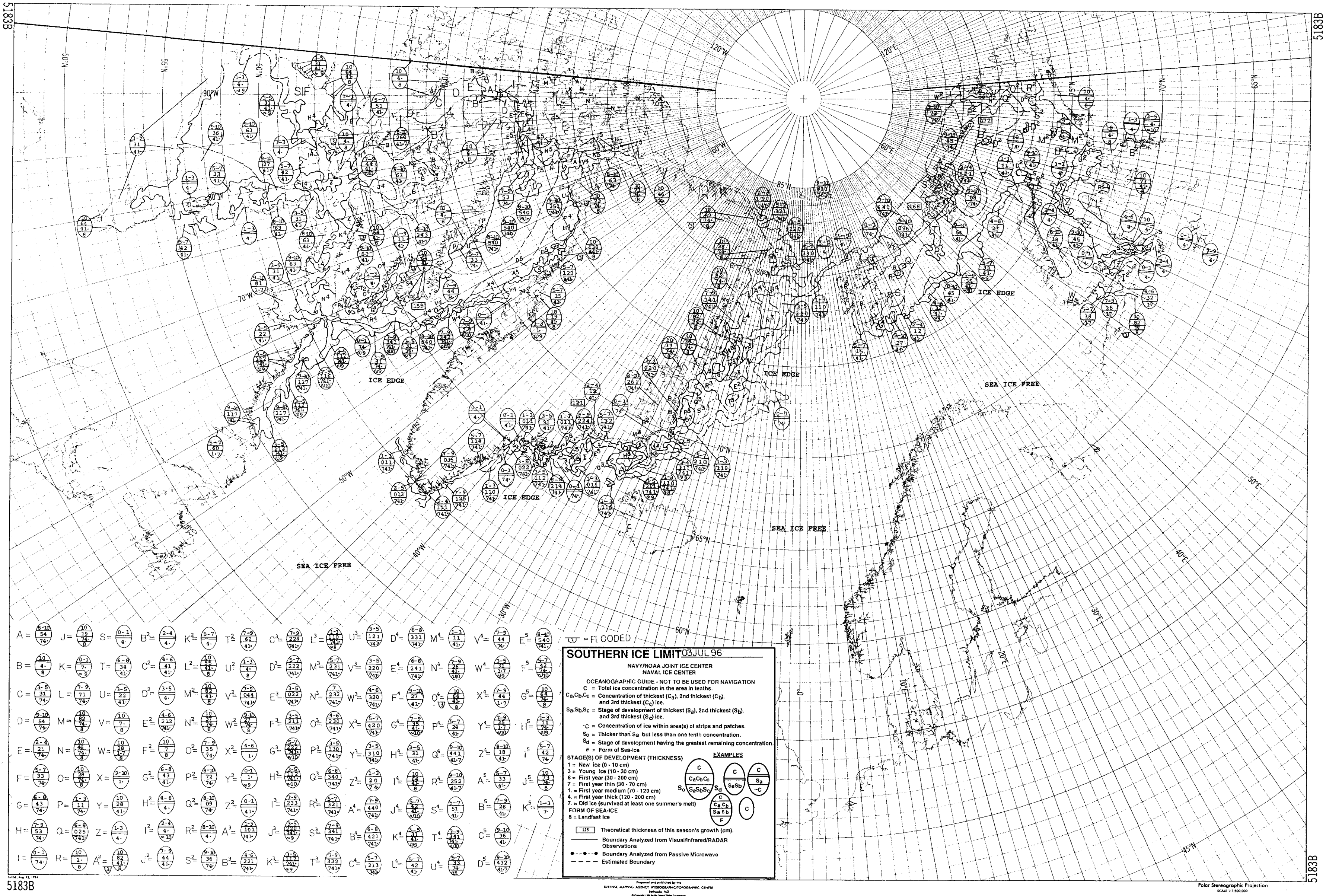
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast ice
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 02JUL 96
ICE EDGE
Polar Stereographic Projection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SOUTHERN ICE LIMIT 03 JUL 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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4. = First year thick (120 - 200 cm)
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FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
= FLOODED
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
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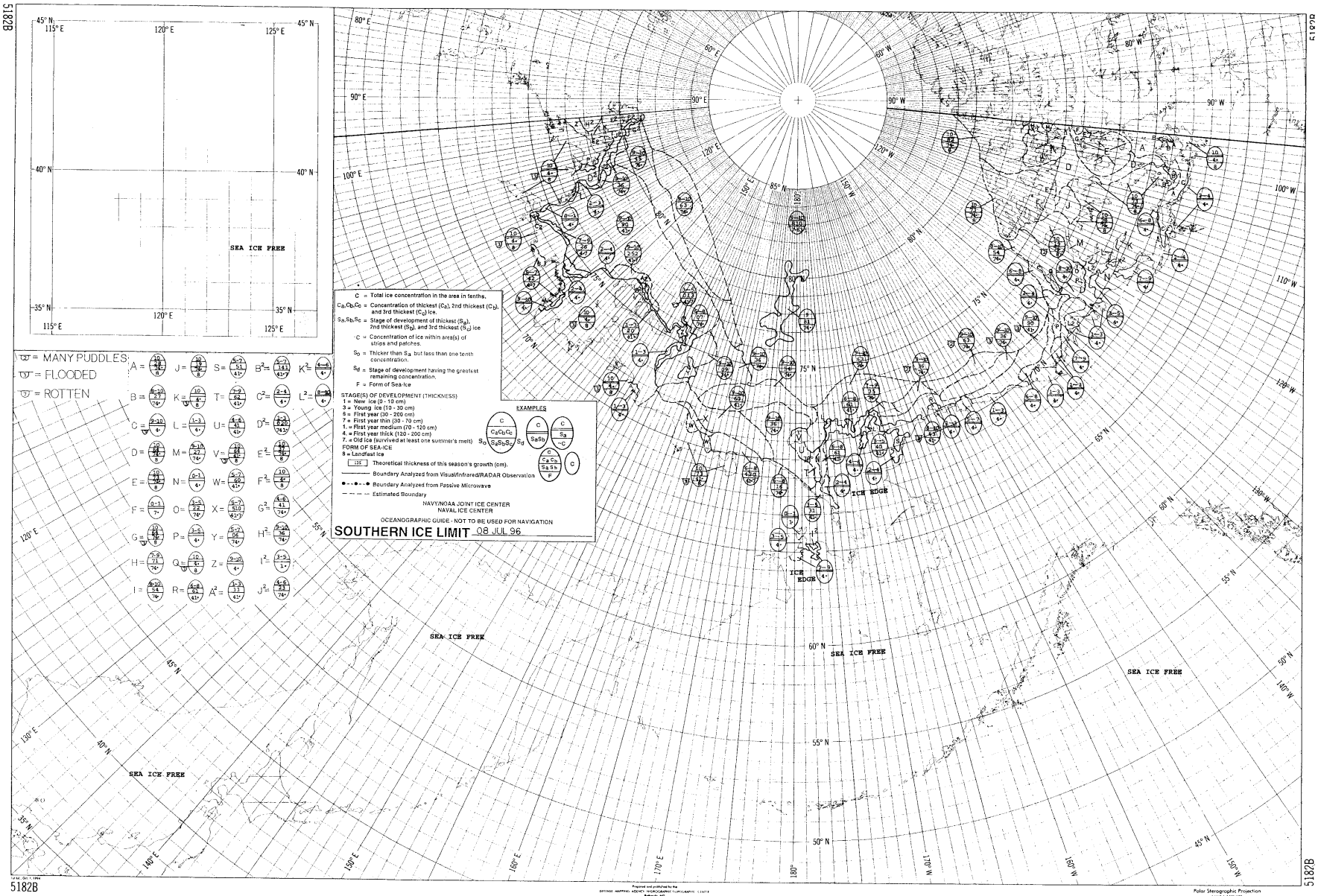
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
W = MANY PUDDLES
V = FLOODED
U = ROTTEN
C = Total ice concentration in the area in tenths.
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SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
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So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea Ice
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1 = New Ice (0 - 10 cm)
3 = Young Ice (10 - 30 cm)
4 = First year (30 - 200 cm)
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1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 08 JUL 96
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection

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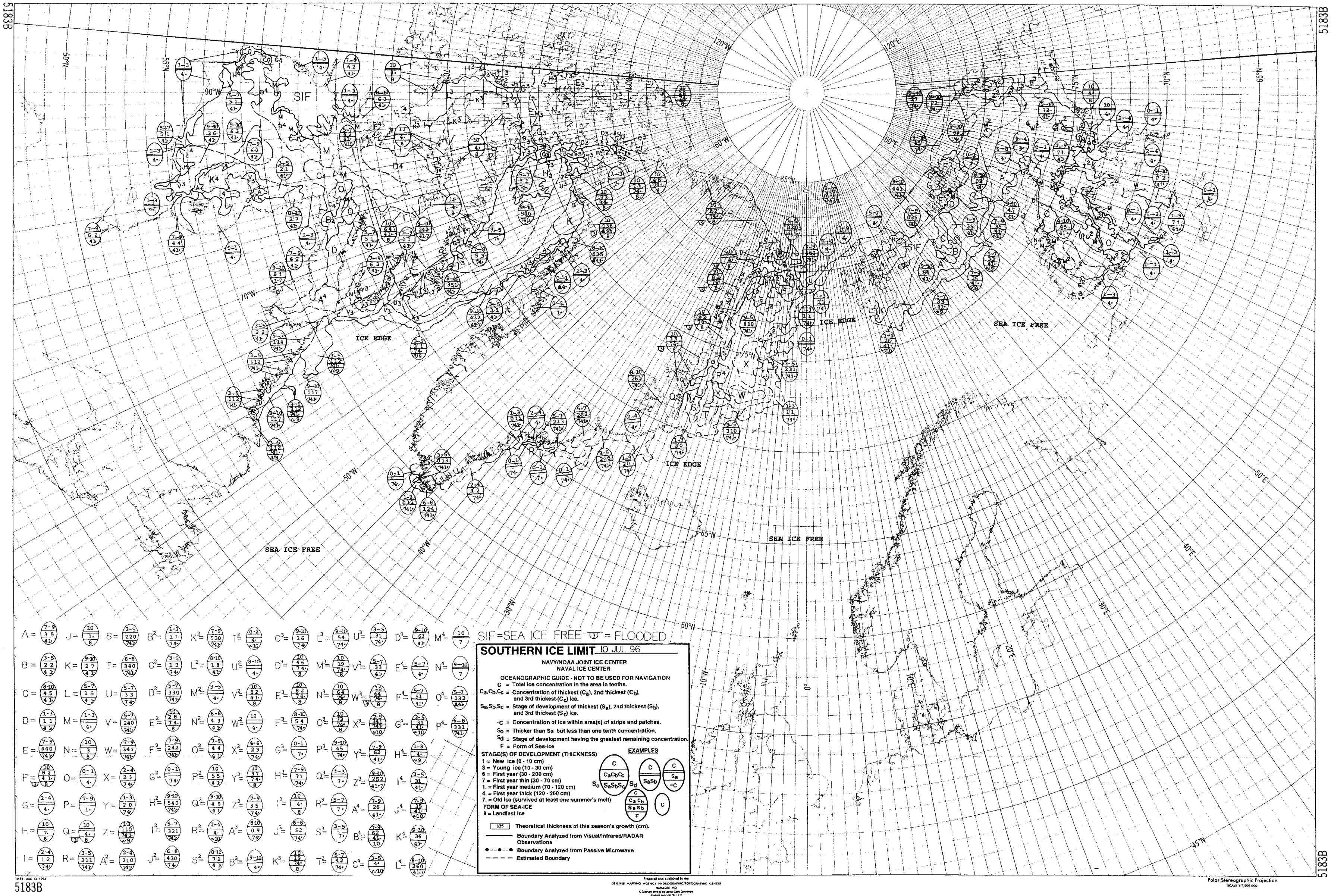
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SIF = SEA ICE FREE ⓤ = FLOODED
SOUTHERN ICE LIMIT 10 JUL 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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FORM OF SEA-ICE
8 = Landfast ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
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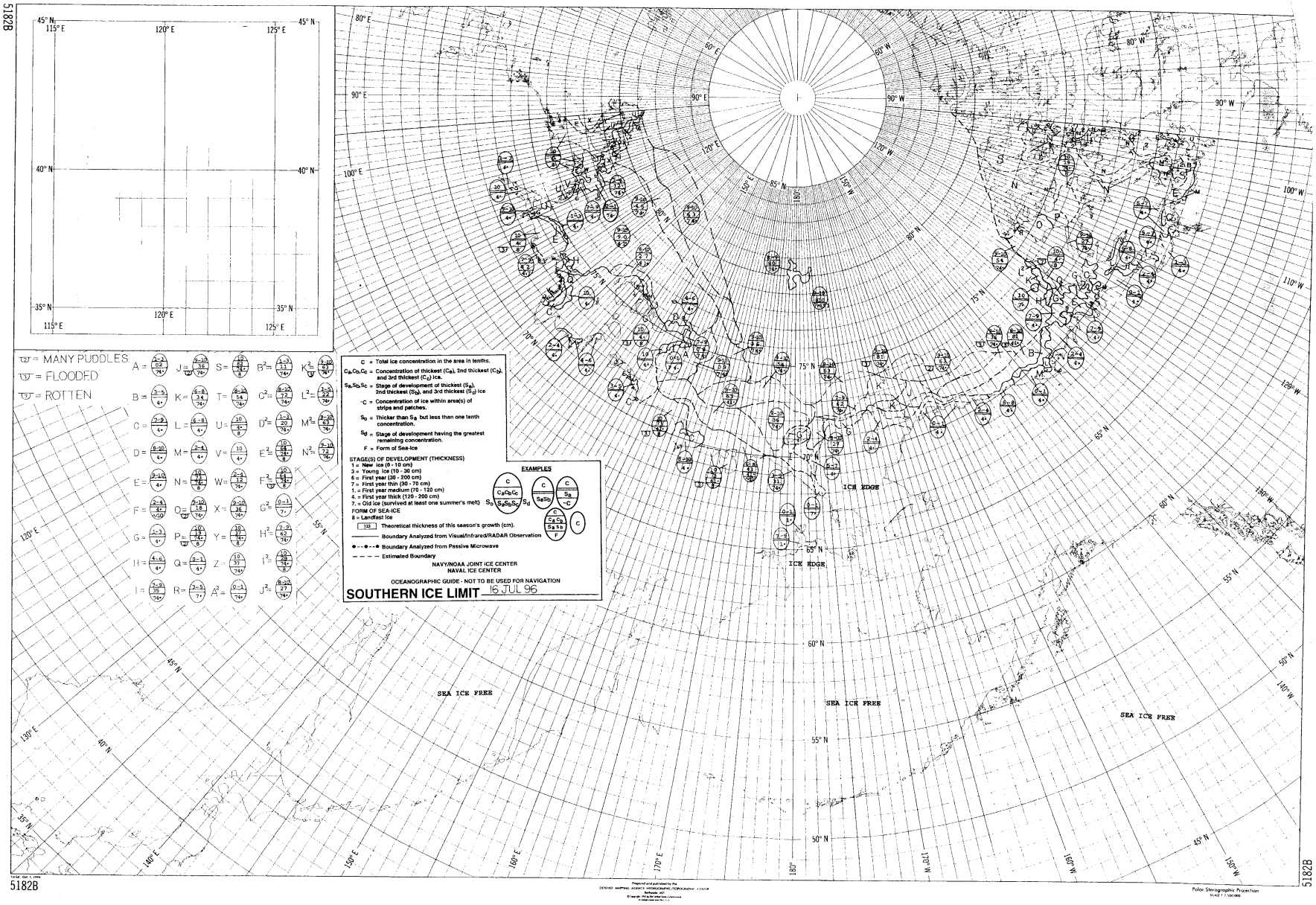
5182B
45° N
115° E
120° E
125° E
40° N
35° N
MANY PUDDLES
FLOODED
ROTTEN
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
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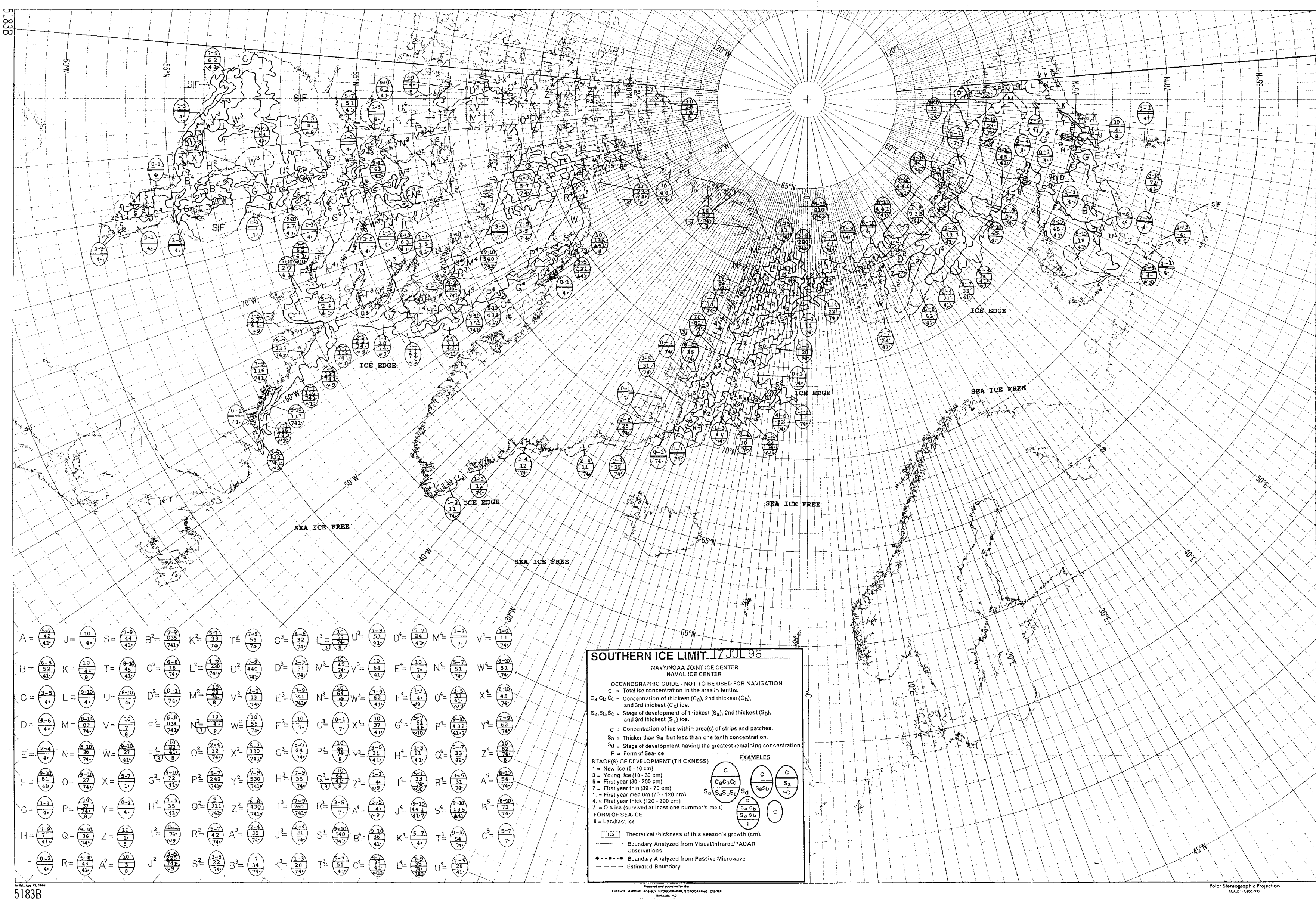
C = Concentration of ice within area(s) of strips and patches.
S_b = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 15 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
7 = First year thin (30 - 70 cm)
1 = First year medium (70 - 120 cm)
4 = First year thick (120 - 200 cm)
7 = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
132 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 16 JUL 96
ICE EDGE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
SEA ICE FREE
Polar Stereographic Projection
5182B



5183B
SOUTHERN ICE LIMIT 17 JUL 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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EXAMPLES
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Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
SIF
Polar Stereographic Projection
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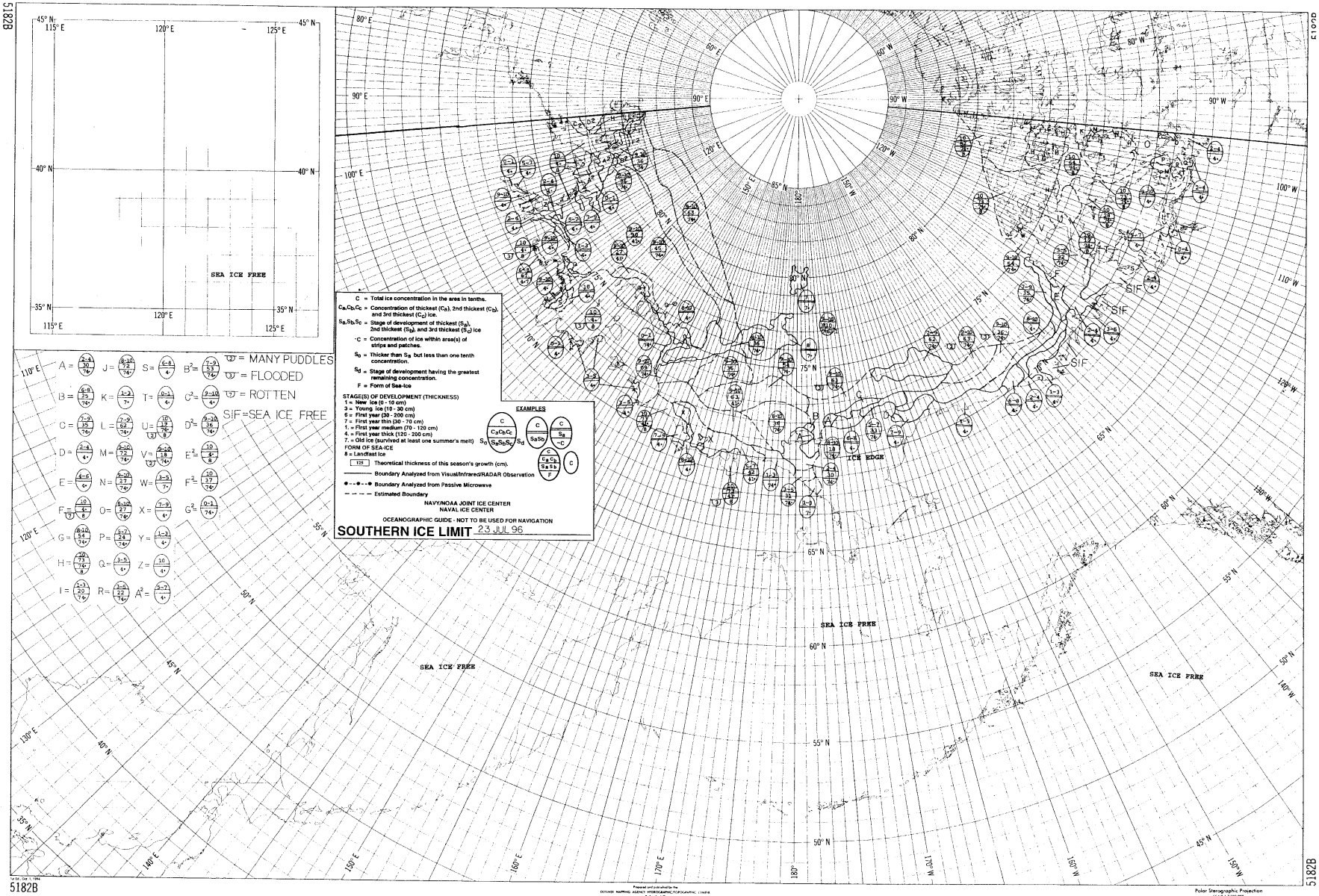
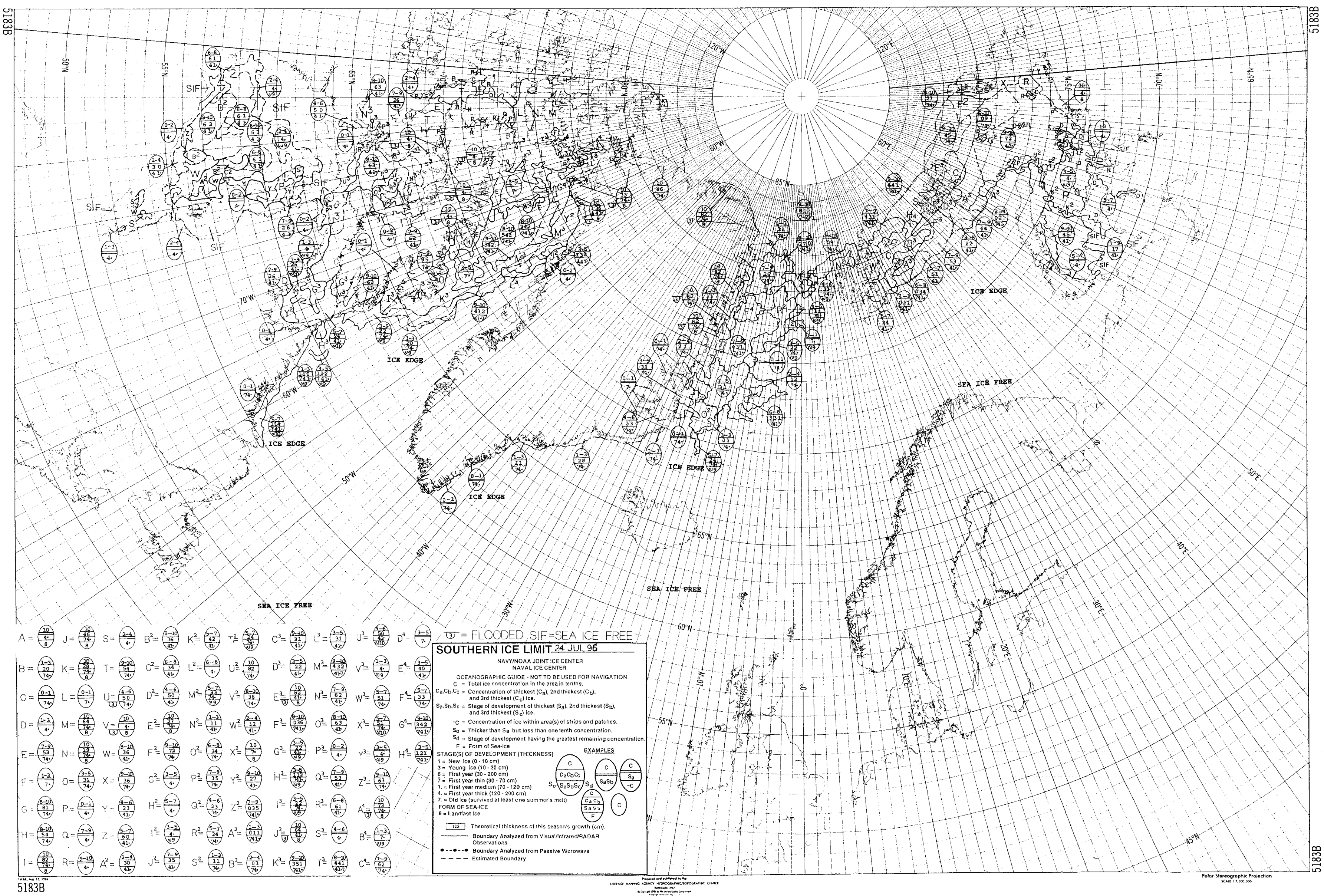
Bethesda, MD


5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
c = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
2 = Young Ice (10 - 30 cm)
3 = First year (30 - 200 cm)
6 = First year thin (30 - 70 cm)
7 = First year medium (70 - 120 cm)
4 = First year thick (120 - 200 cm)
7. = Old Ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 23 JUL 96
MANY PUDDLES
FLOODED
ROTTEN
SIF=SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
SEA ICE FREE
SIF
SIF
SIF
Polar Stereographic Projection
5182B


5183B
= FLOODED SIF=SEA ICE FREE
SOUTHERN ICE LIMIT 24 JUL 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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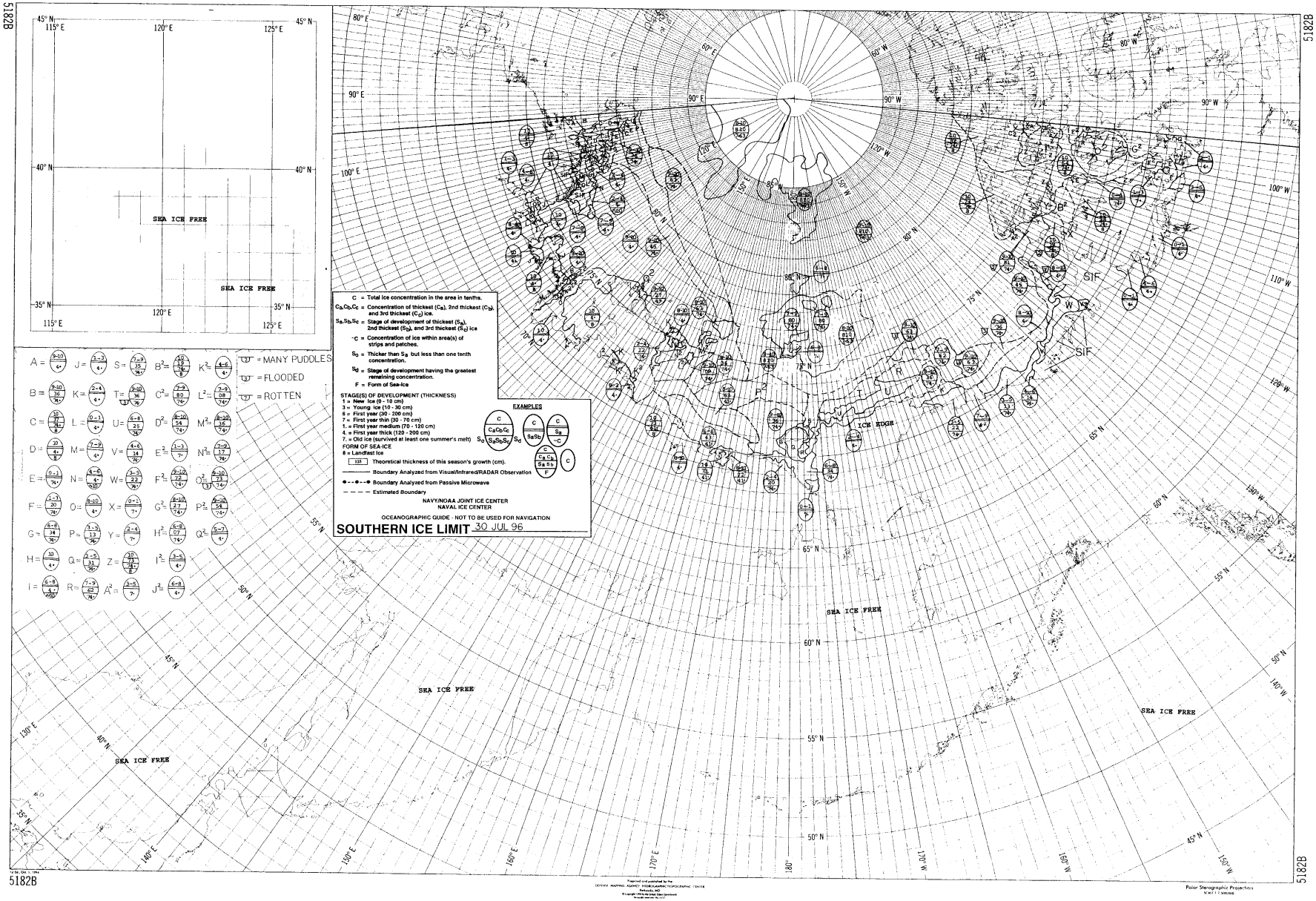
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER Bethesda, MD


5182B
45° N
115° E
120° E
125° E
40° N
35° N
SEA ICE FREE
SEA ICE FREE
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-C = Concentration of ice within area(s) of strips and patches.
Sb = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New Ice (0 - 10 cm)
3 = Young Ice (10 - 30 cm)
6 = First year (30 - 200 cm)
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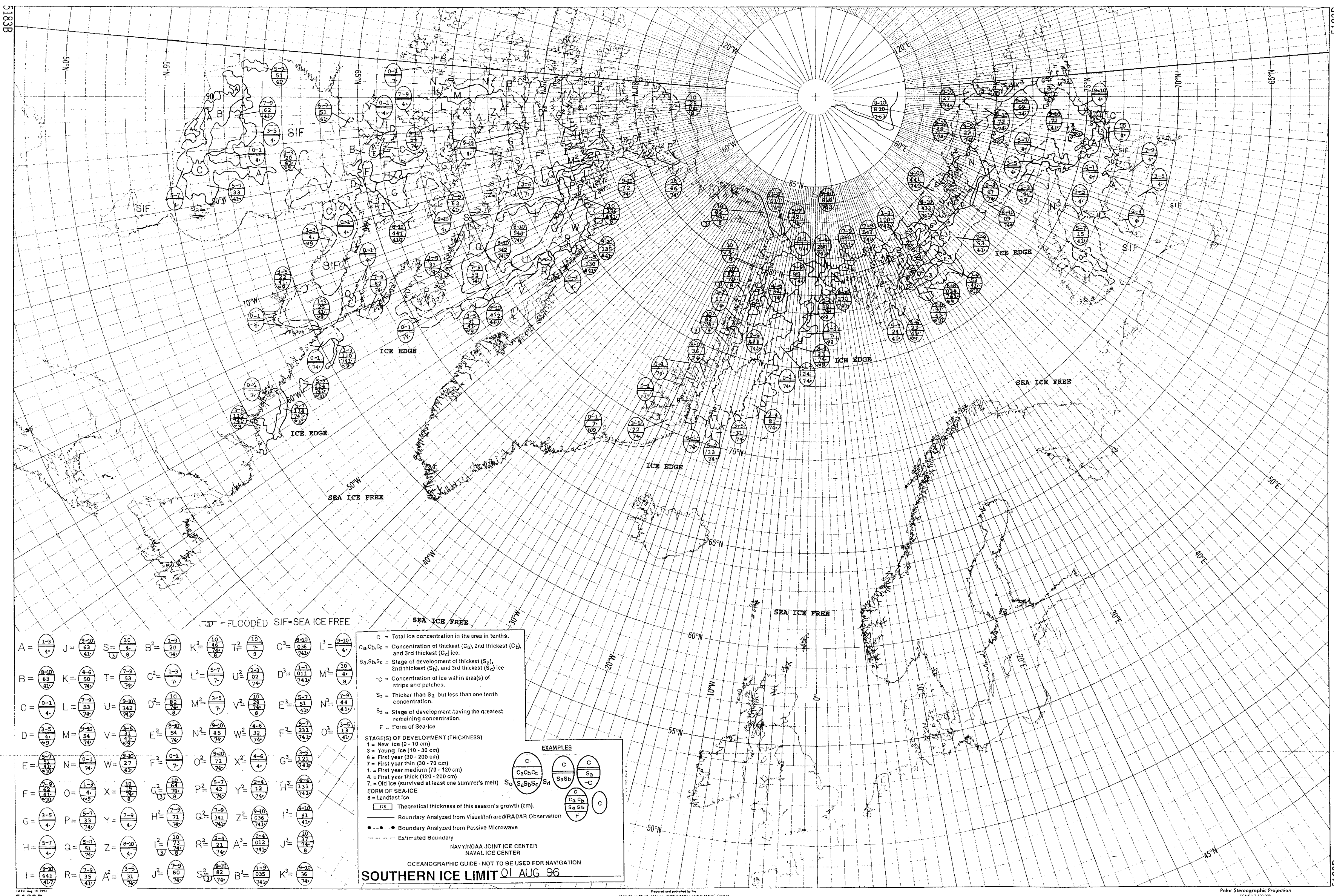
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
135 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 30 JUL 96
= MANY PUDDLES
= FLOODED
= ROTTEN
ICE EDGE
SIF
SEA ICE FREE
Polar Stereographic Projection
5182B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SIF
SEA ICE FREE
ICE EDGE
(3) = FLOODED SIF=SEA ICE FREE
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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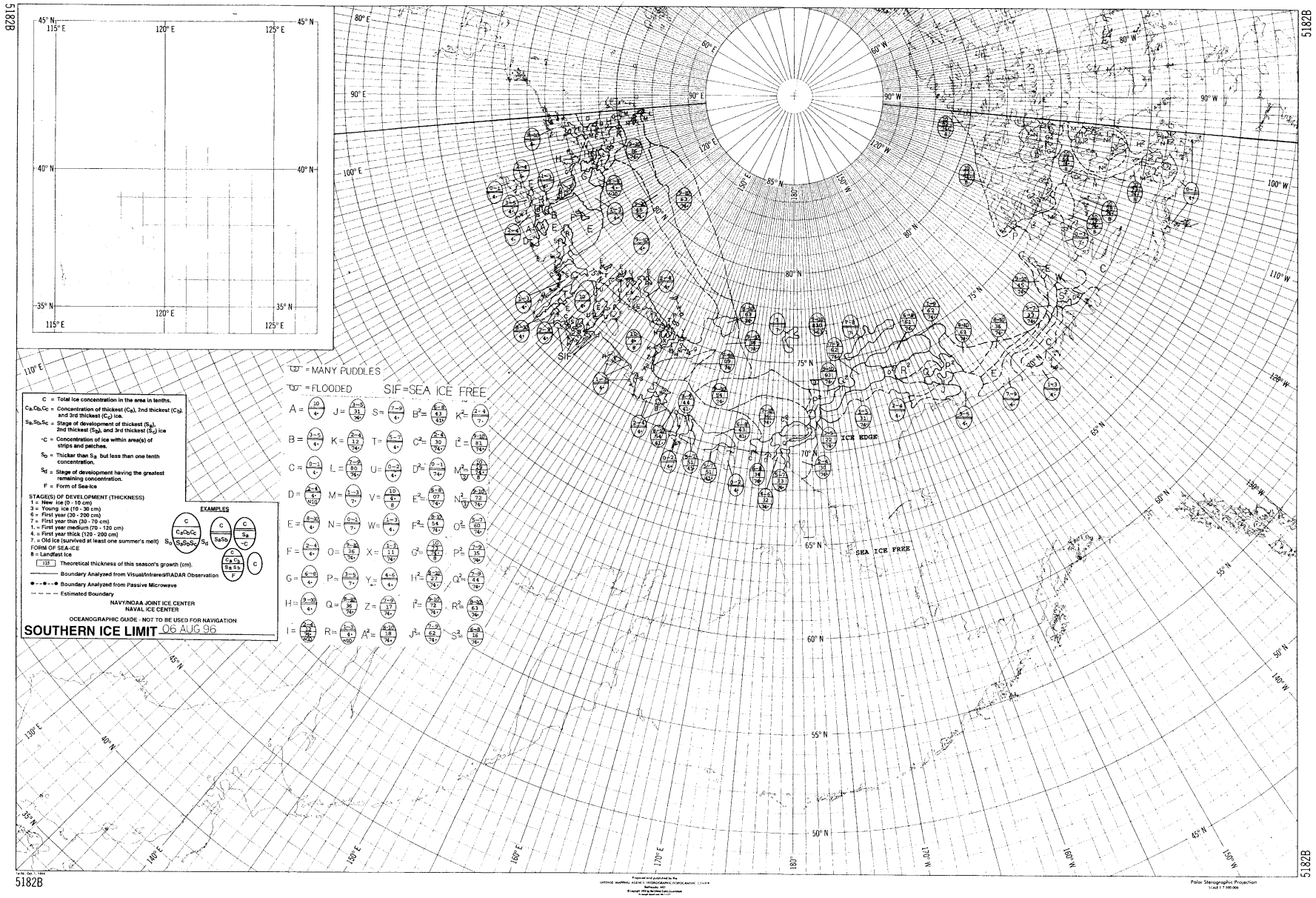
FORM OF SEA-ICE
8 = Landfast Ice
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 01 AUG 96
Polar Stereographic Projection


5182B
45° N
115° E
120° E
125° E
40° N
35° N
C = Total ice concentration in the area in tenths.
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Sa,Sb,Sc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice
·C = Concentration of ice within area(s) of strips and patches.
Sb = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-ice
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
3 = Young ice (10 - 30 cm)
4 = First year (30 - 200 cm)
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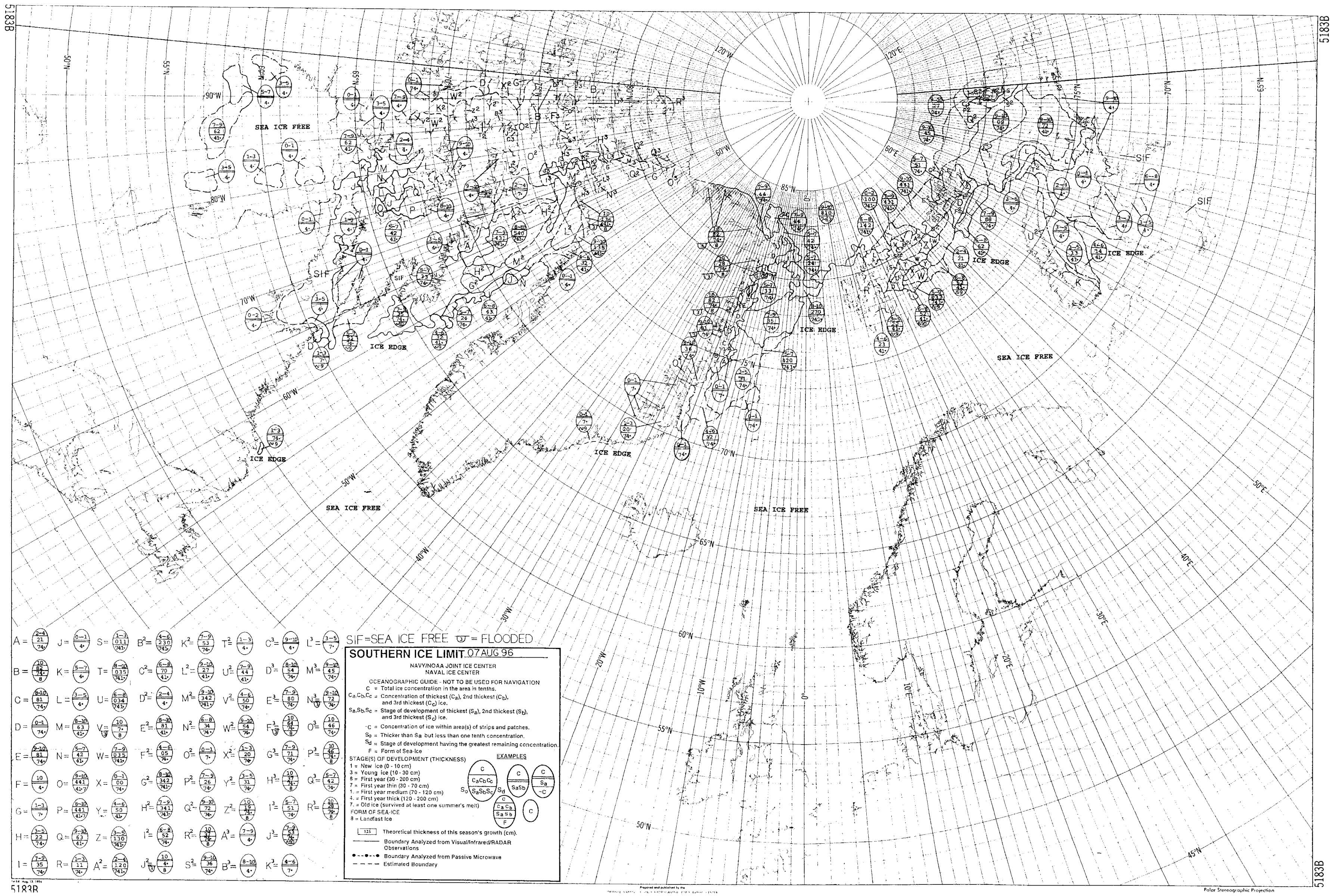
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
SOUTHERN ICE LIMIT 06 AUG 96
= MANY PUDDLES
= FLOODED
SIF=SEA ICE FREE
ICE EDGE
SEA ICE FREE
80° E
90° E
100° E
110° E
120° E
130° E
140° E
150° E
160° E
170° E
180°
170° W
160° W
150° W
140° W
130° W
120° W
110° W
100° W
90° W
80° W
60° E
60° W
85° N
80° N
75° N
70° N
65° N
60° N
55° N
50° N
45° N
40° N
35° N
Polar Stereographic Projection
SCALE 1:7,500,000
5182B


5183B
SIF=SEA ICE FREE (3)=FLOODED
SOUTHERN ICE LIMIT 07 AUG 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
Ca,Cb,Cc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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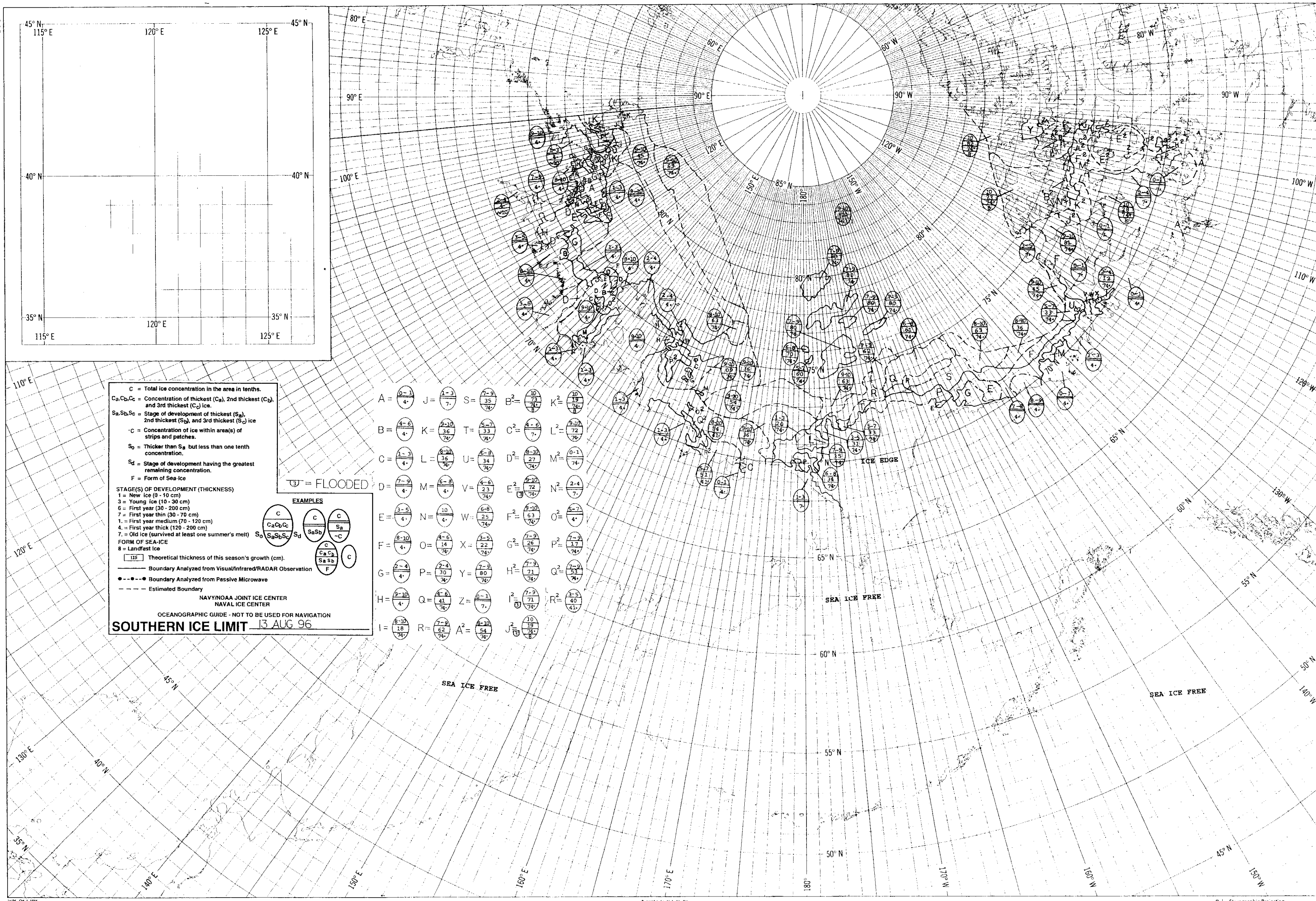
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
Prepared and published by the



5182B

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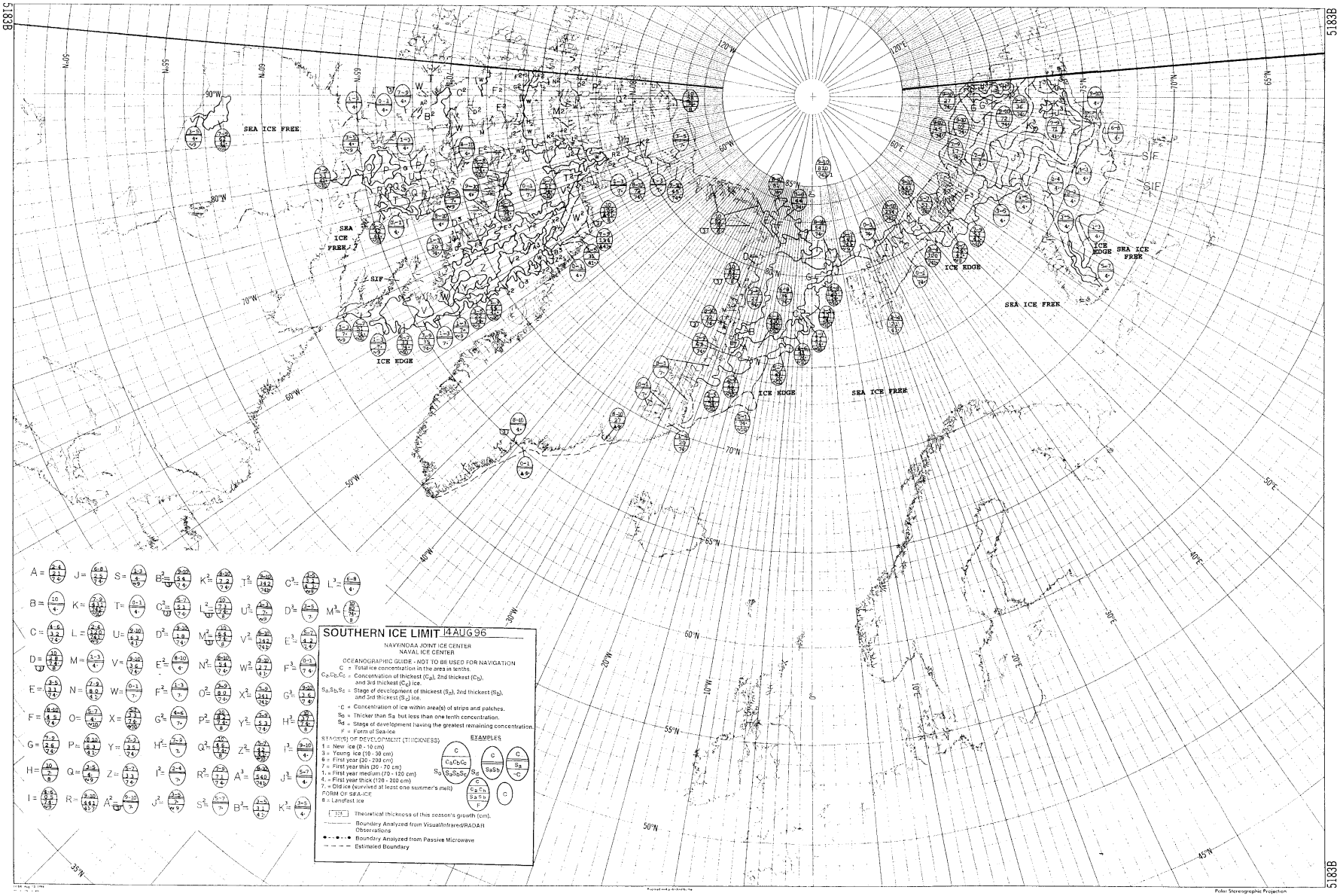
Bethesda, MD

Polar Stereographic Projection
SCALE 1:7,500,000



SOUTHERN ICE LIMIT 14 AUG 96

NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

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S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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FORM OF SEA ICE
8 = Landfast ice

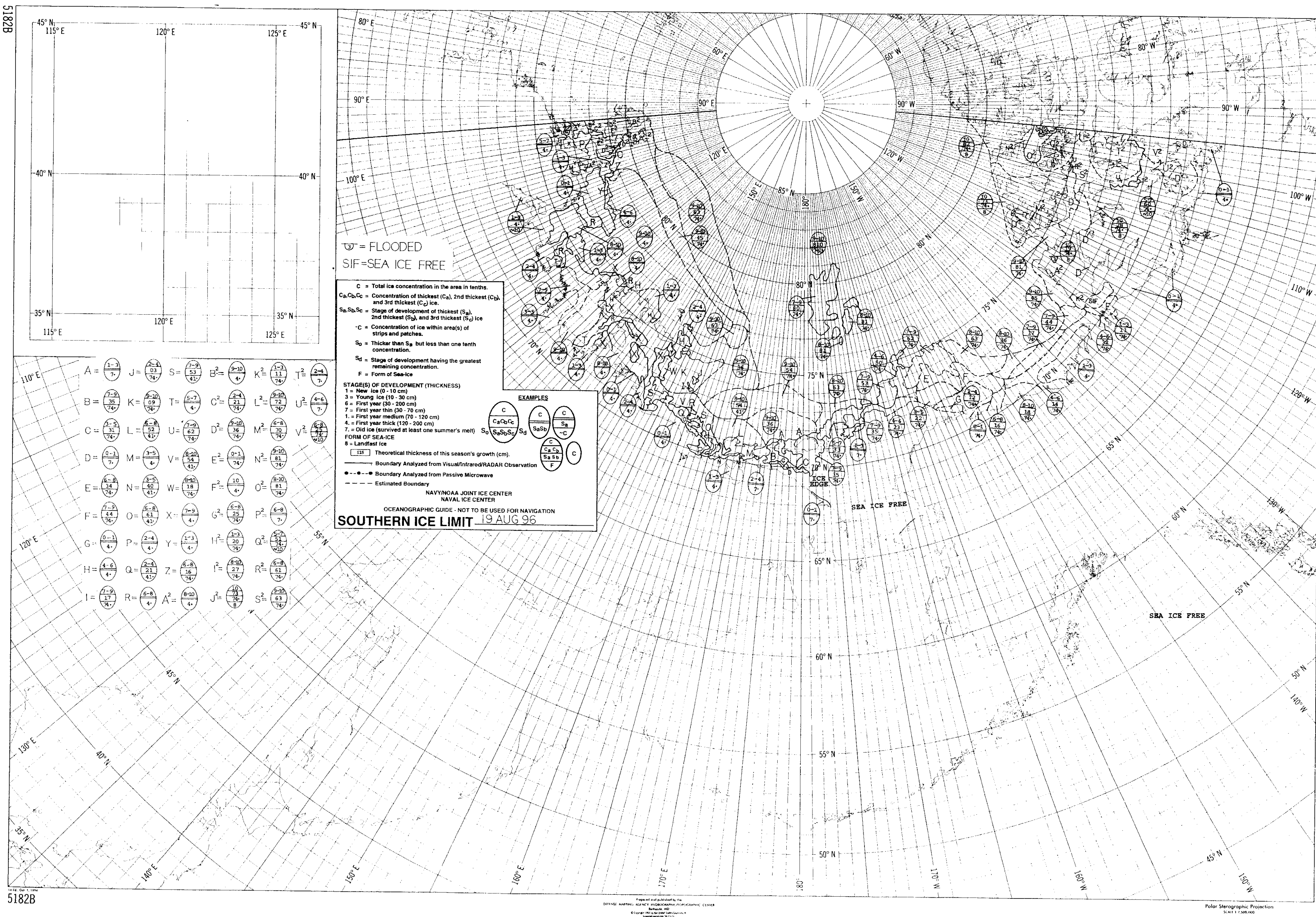
EXAMPLES

123 Theoretical thickness of this season's growth (cm).

Boundary Analyzed from Visual/Infrared/RADAR Observations

Boundary Analyzed from Passive Microwave

Estimated Boundary


5182B
SOUTHERN ICE LIMIT 19 AUG 96
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
= FLOODED
SIF=SEA ICE FREE
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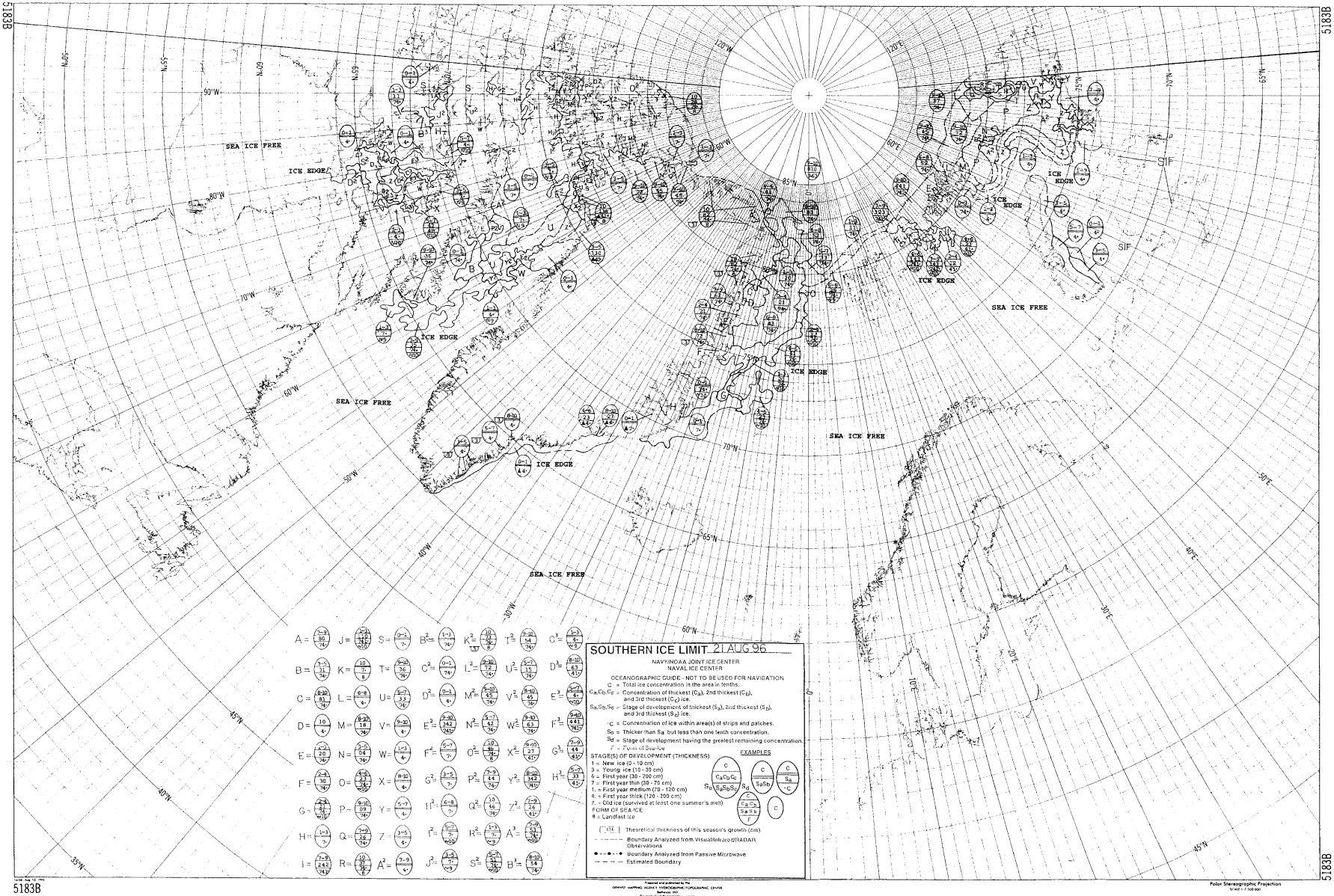
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast ice
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observation
Boundary Analyzed from Passive Microwave
Estimated Boundary
EXAMPLES
SEA ICE FREE
ICE EDGE
Polar Sterographic Projection



5183B

5183B

5183B

SOUTHERN ICE LIMIT 21 AUG 96

NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

^{C} = Concentration of ice within area(s) of strips and patches.

S_o = Thicker than S_a but less than one tenth concentration.

S_d = Stage of development having the greatest remaining concentration.

F = Form of Sea-Ice

STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice

EXAMPLES

[170] Theoretical thickness of this season's growth (cm)

Boundary Analyzed from Visual/Infrared/RADAR Observations

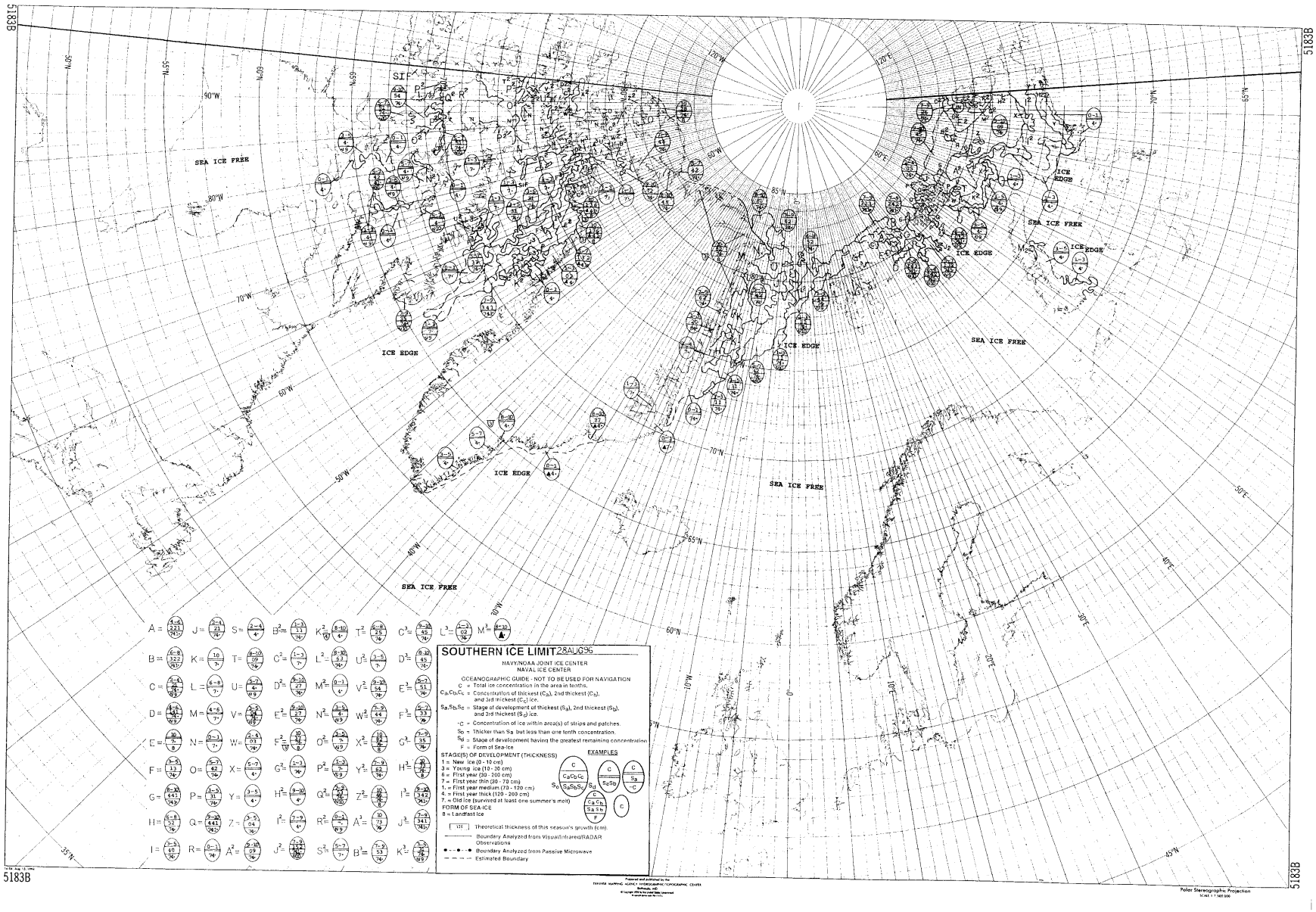
Boundary Analyzed from Passive Microwave

Estimated Boundary

Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC CENTER
Washington, D.C.

Polar Stereographic Projection
SCALE 1:7,500,000

Refer to 1996 Special Arctic Supplement for this Chart


5183B
SEA ICE FREE
ICE EDGE
SEA ICE FREE
ICE EDGE
ICE EDGE
SEA ICE FREE
ICE EDGE
SEA ICE FREE
SEA ICE FREE
SOUTHERN ICE LIMIT 28AUG96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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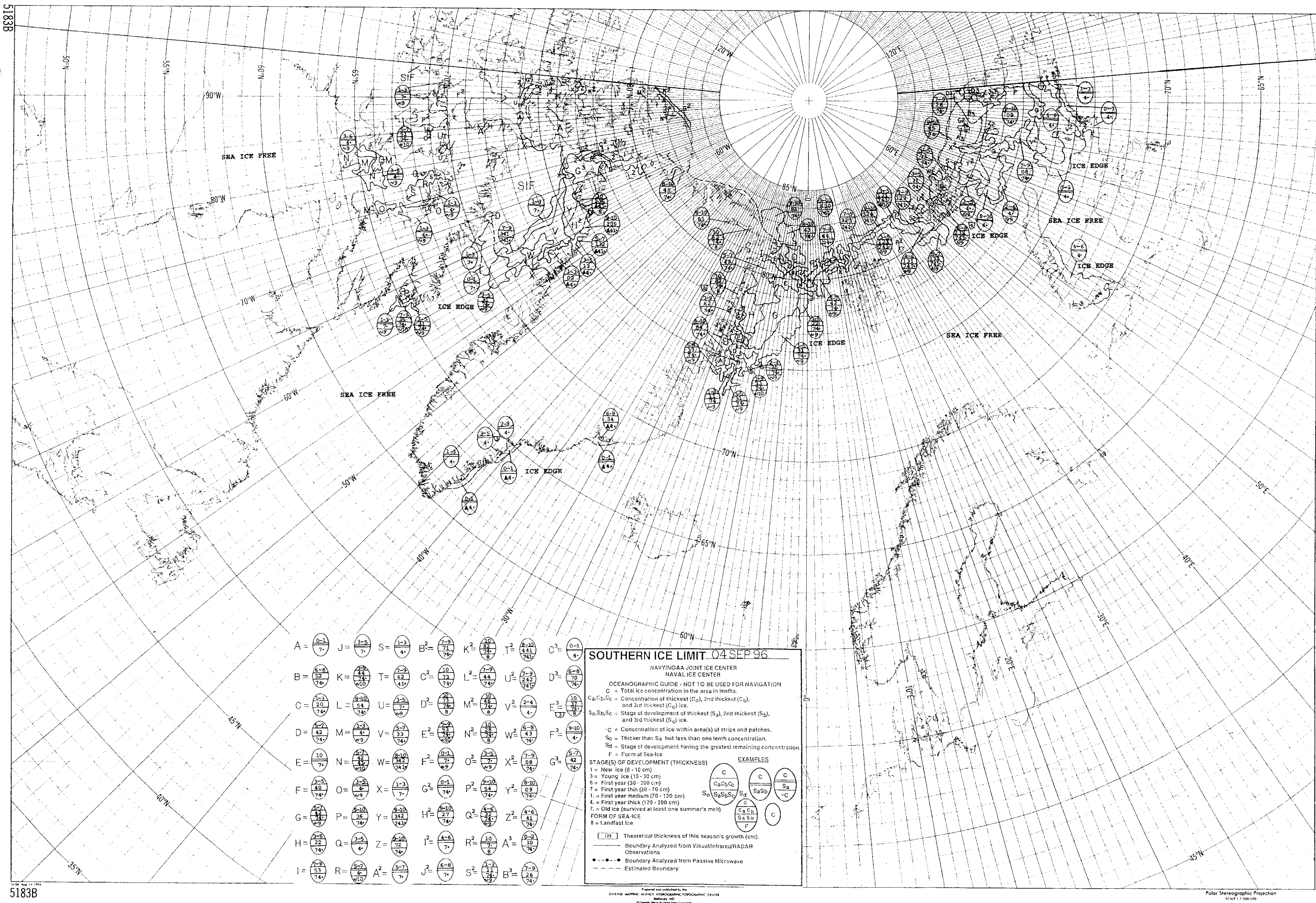
FORM OF SEA ICE
8 = Landfast Ice
EXAMPLES
Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Polar Stereographic Projection
5183B

Refer to 1996 Special Arctic Supplement for this Chart


5183B
SOUTHERN ICE LIMIT 04 SEP 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
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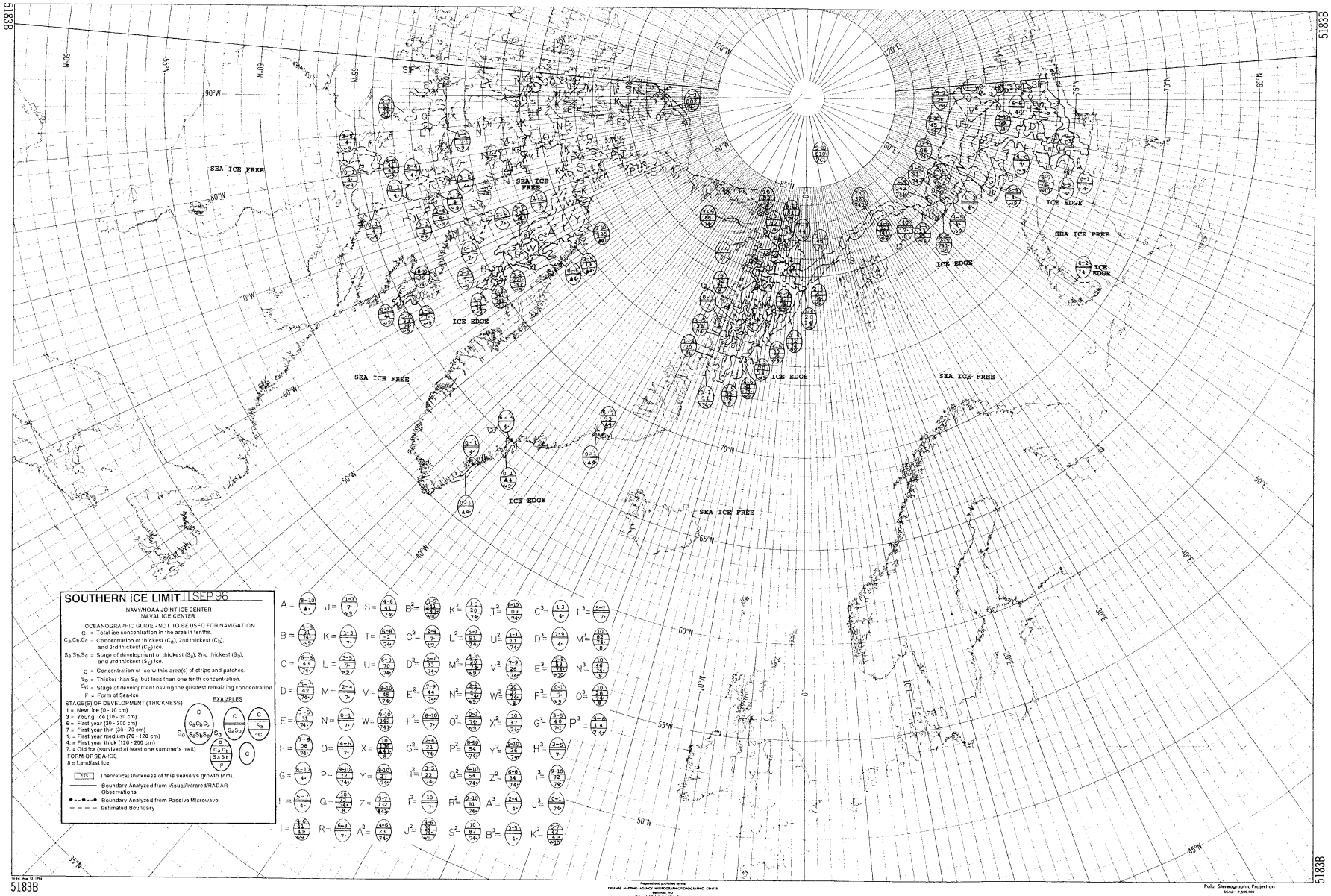
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
SIF
Polar Stereographic Projection
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, MD

Refer to 1996 Special Arctic Supplement for this Chart



SOUTHERN ICE LIMIT 11 SEP 96

NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER

OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.
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$S_a S_b S_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
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F = Form of Sea-Ice

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4. = First year thick (120 - 200 cm)
7. = Old Ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice

EXAMPLES

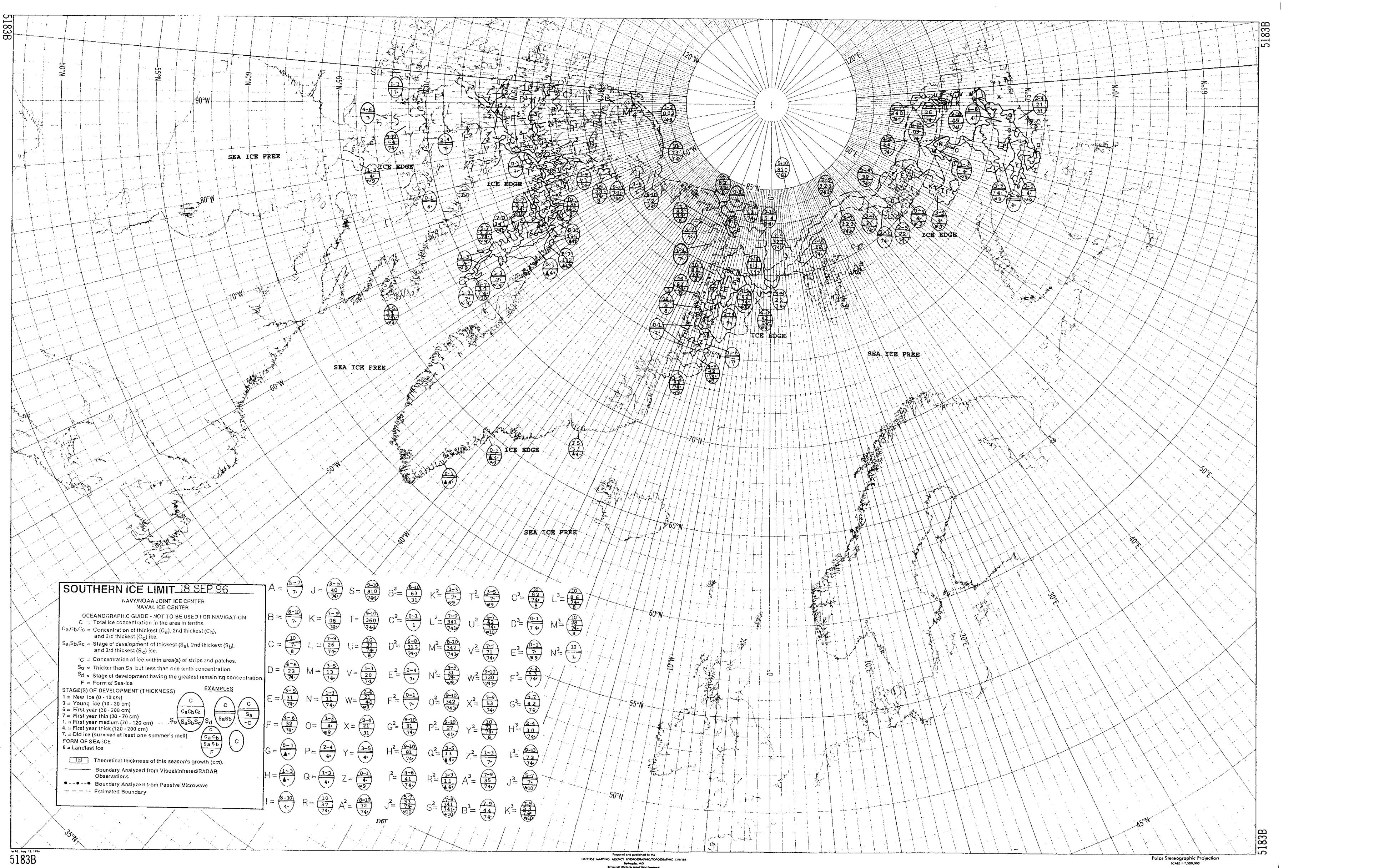
123 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary

Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER

Polar Stereographic Projection
SCALE 1:7,500,000

5183B

Refer to 1996 Special Arctic Supplement for this Chart


5183B
SOUTHERN ICE LIMIT 18 SEP 96
NAVY/NOAA JOINT ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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~C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice
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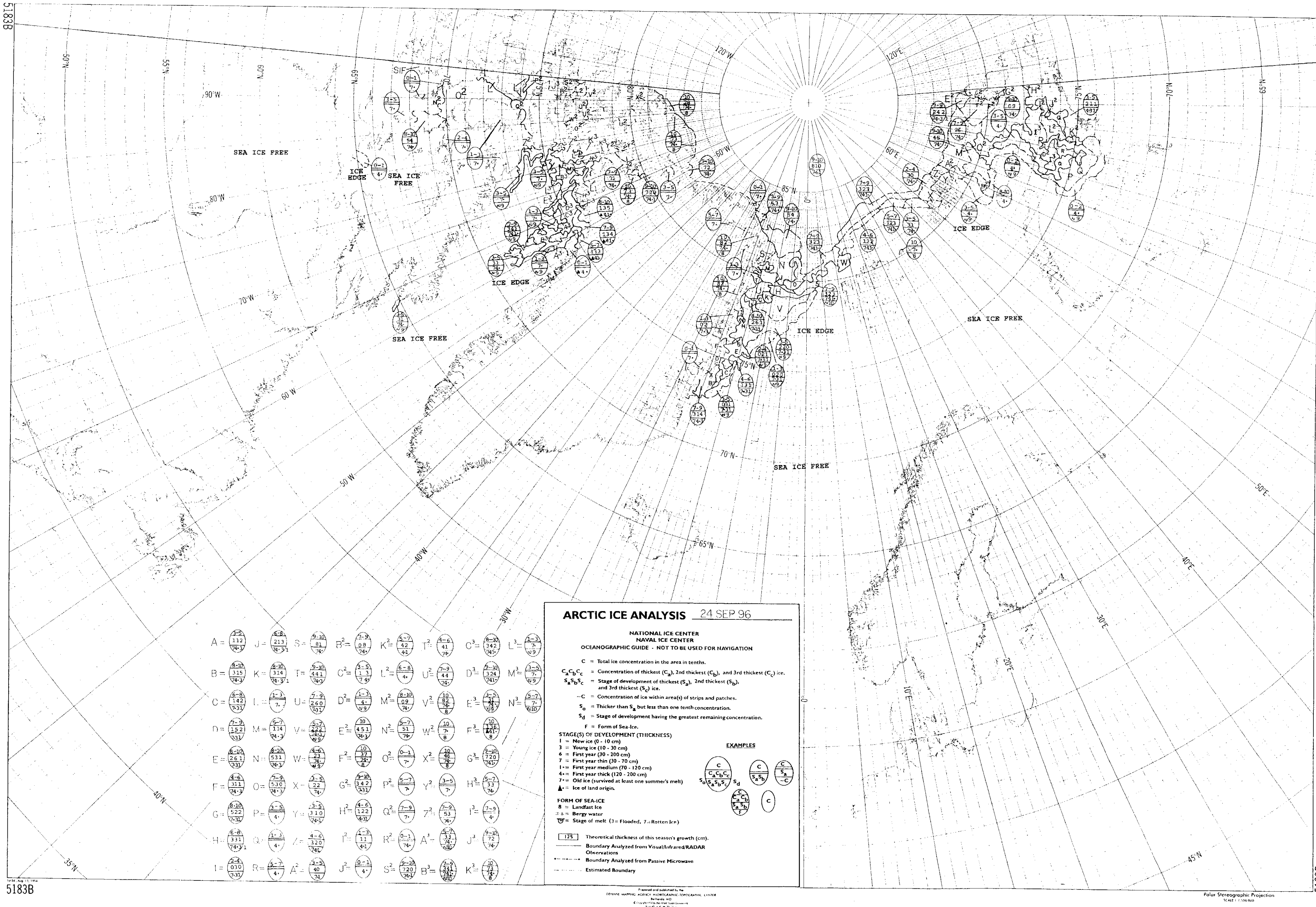
1. = First year medium (70 - 120 cm)
4. = First year thick (120 - 200 cm)
7. = Old ice (survived at least one summer's melt)
FORM OF SEA-ICE
8 = Landfast Ice
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
5183B

Refer to 1996 Special Arctic Supplement for this Chart


5183B
ARCTIC ICE ANALYSIS 24 SEP 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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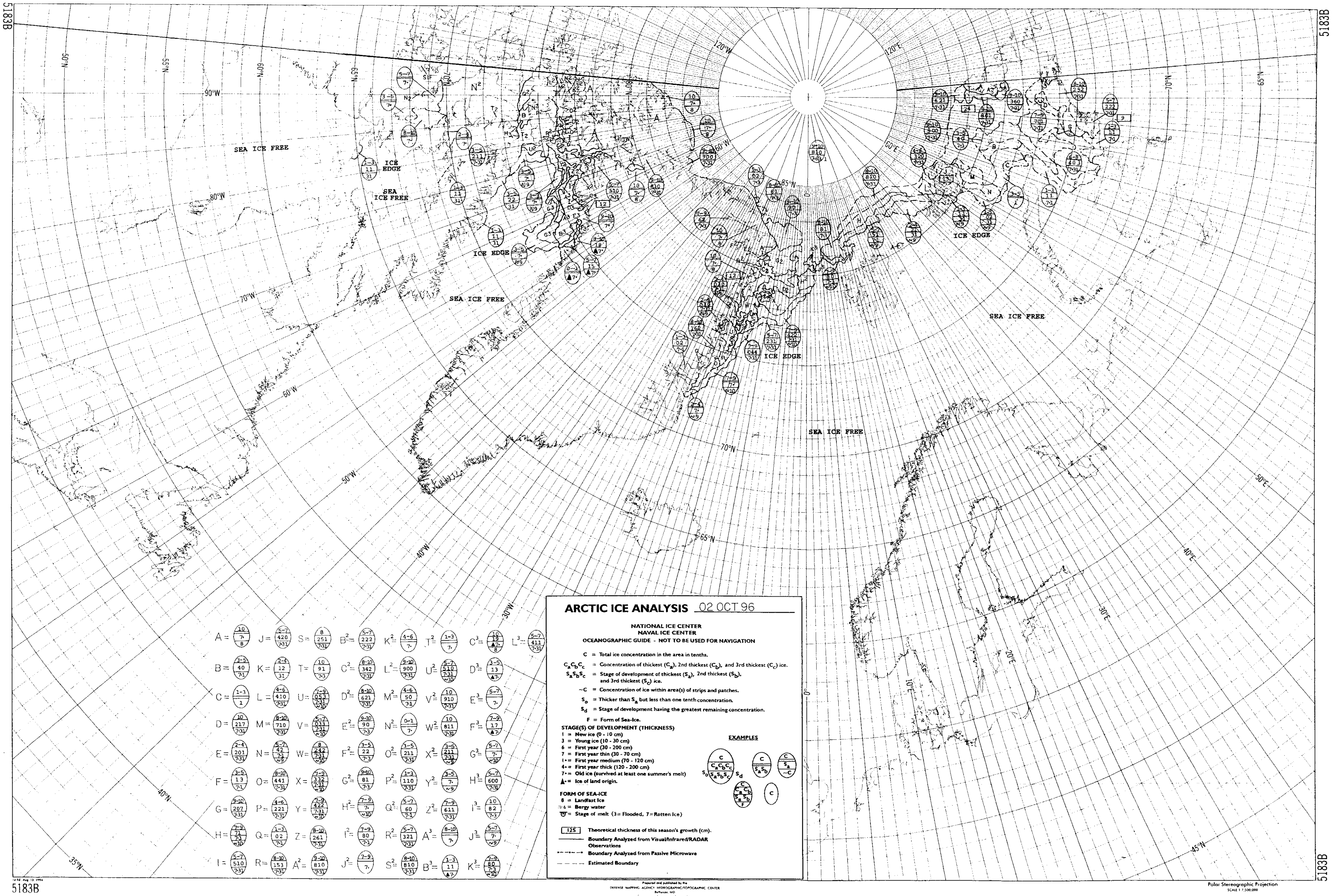
7 = First year thin (30 - 70 cm)
1• = First year medium (70 - 120 cm)
4• = First year thick (120 - 200 cm)
7• = Old ice (survived at least one summer's melt)
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
Bergy water
Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection

Refer to 1996 Special Arctic Supplement for this Chart


5183B
ARCTIC ICE ANALYSIS 02 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
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~C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
Sd = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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1• = First year medium (70 - 120 cm)
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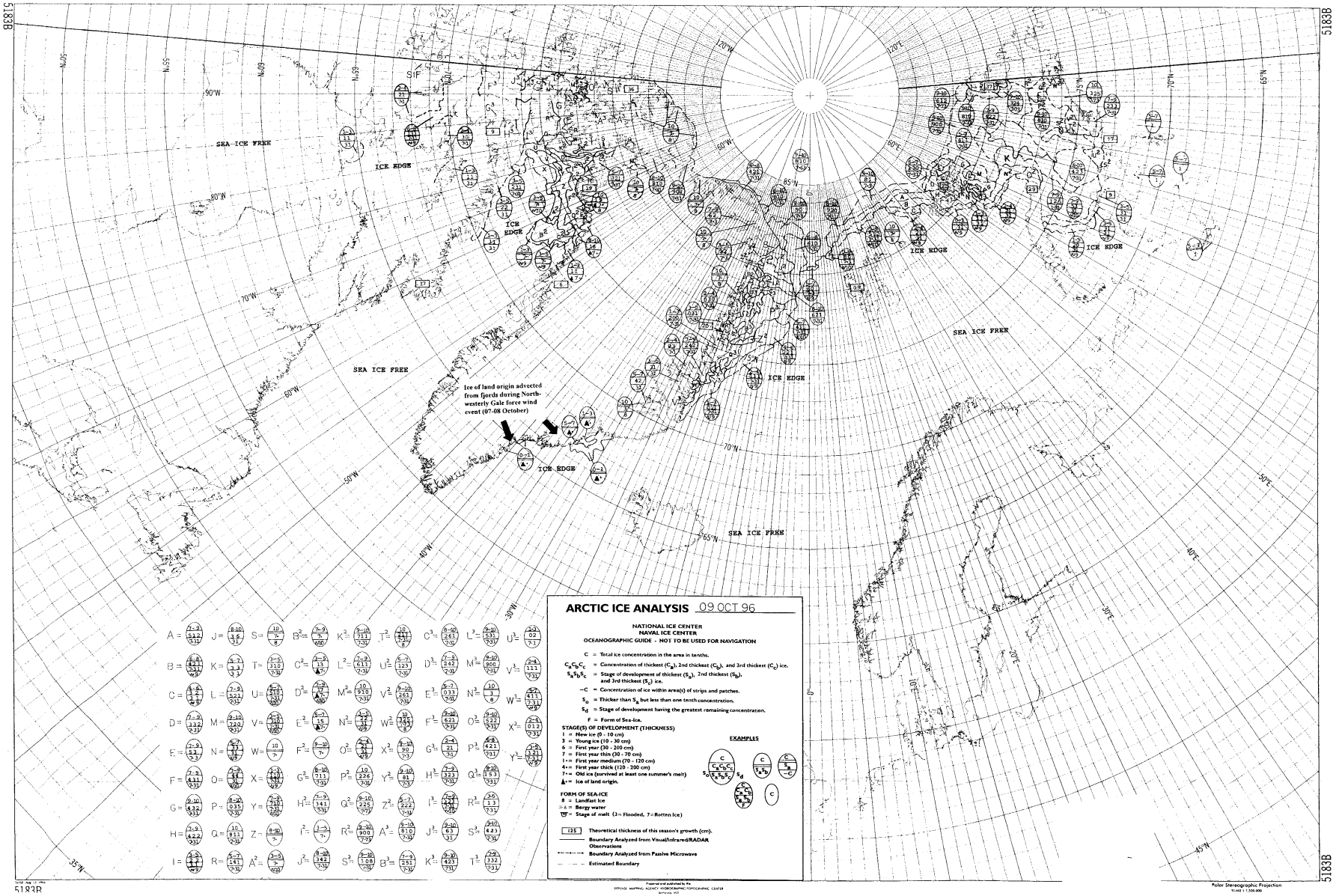
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
6 = Bergy water
= Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, MD
Polar Stereographic Projection

Refer to 1996 Special Arctic Supplement for this Chart


SEA ICE FREE
ICE EDGE
Ice of land origin advected from fjords during North-westerly Gale force wind event (07-08 October)
ARCTIC ICE ANALYSIS 09 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
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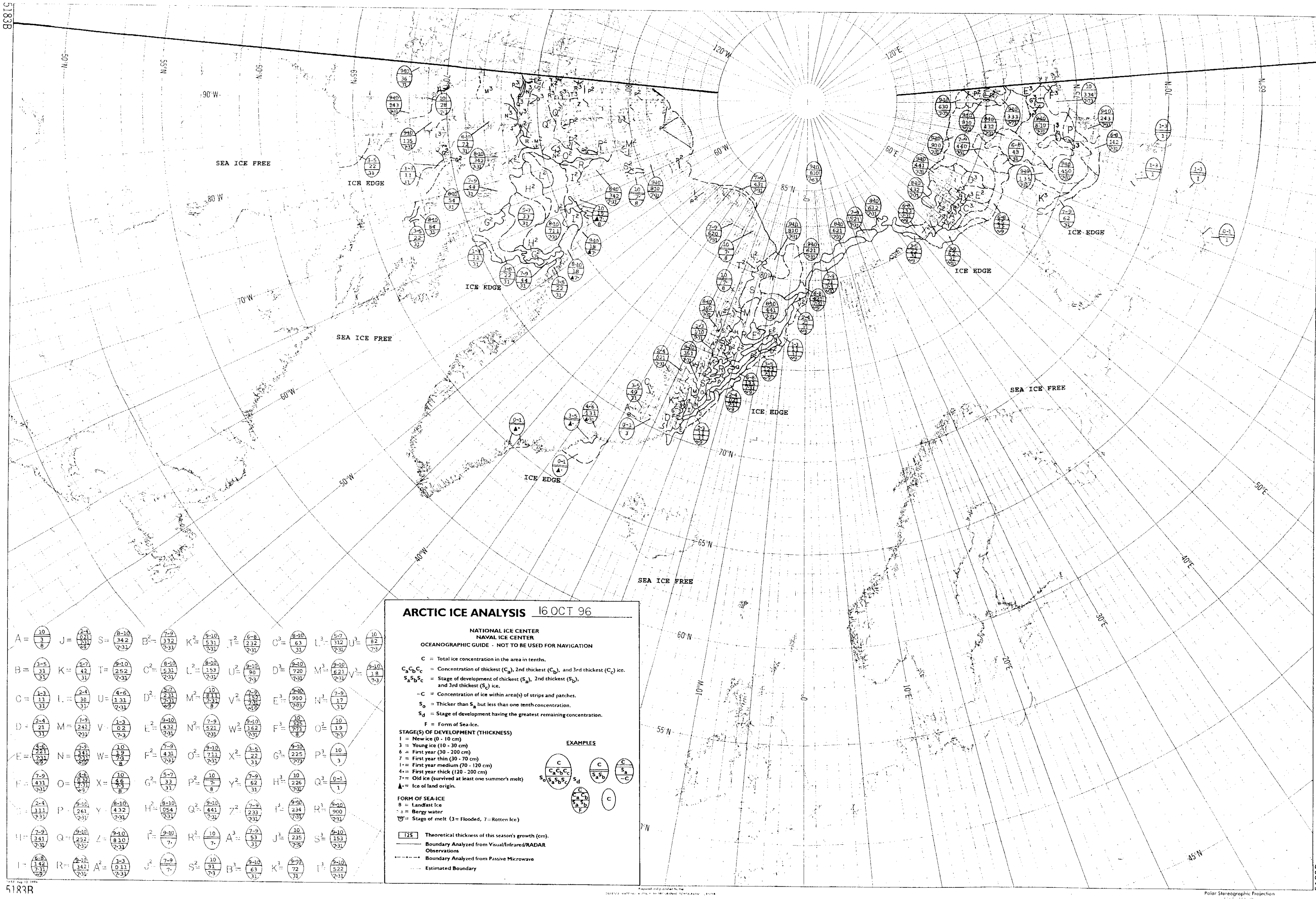
8 = Old ice (survived at least one summer's melt)
9 = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
1 = Landfast Ice
2 = Bergy water
3 = Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Polar Stereographic Projection

Refer to 1996 Special Arctic Supplement for this Chart


5183B
ARCTIC ICE ANALYSIS 16 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
−C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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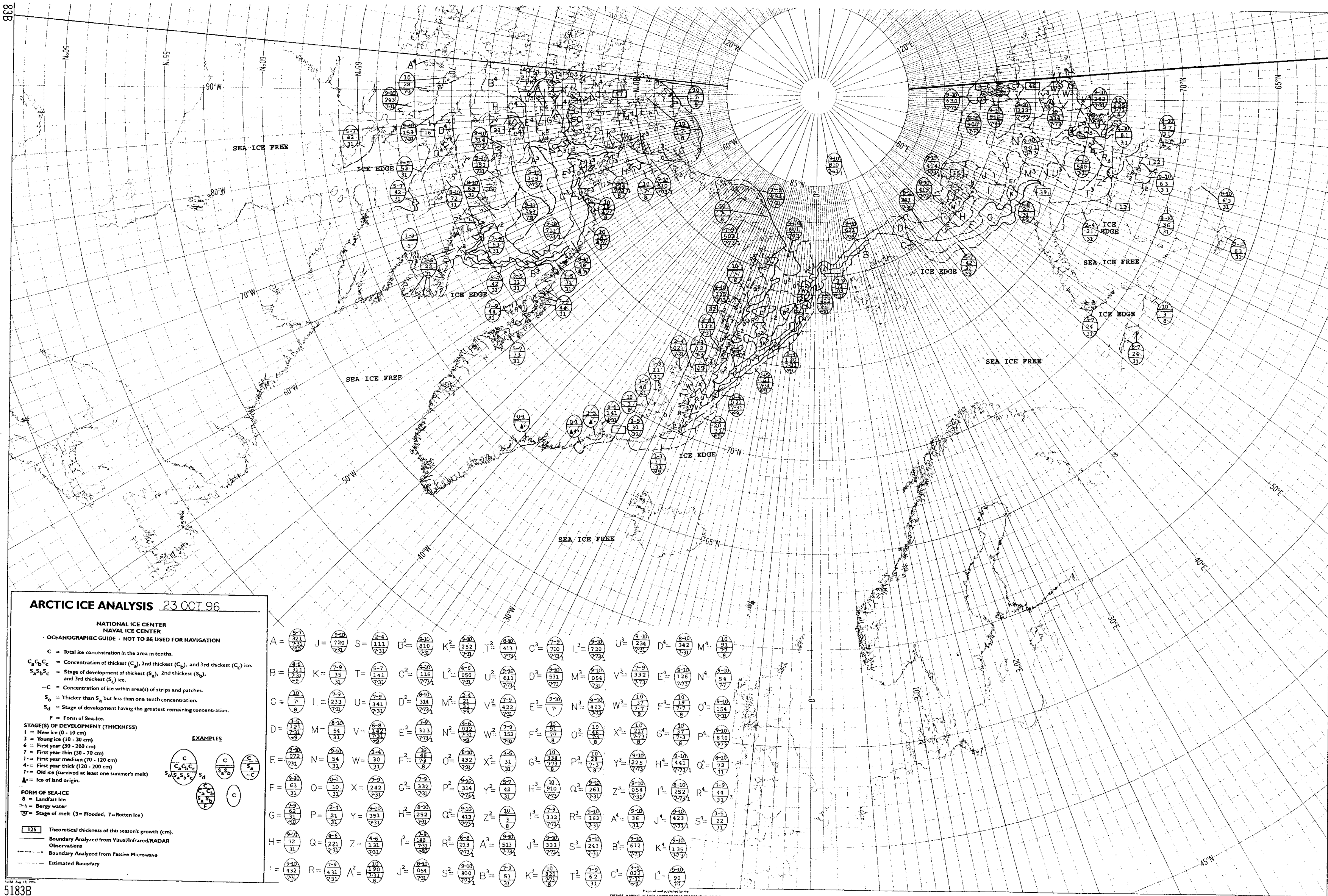
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
Bergy water
Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection

Refer to 1996 Special Arctic Supplement for this Chart


ARCTIC ICE ANALYSIS 23 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
· OCEANOGRAPHIC GUIDE · NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
~C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
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1• = First year medium (70 - 120 cm)
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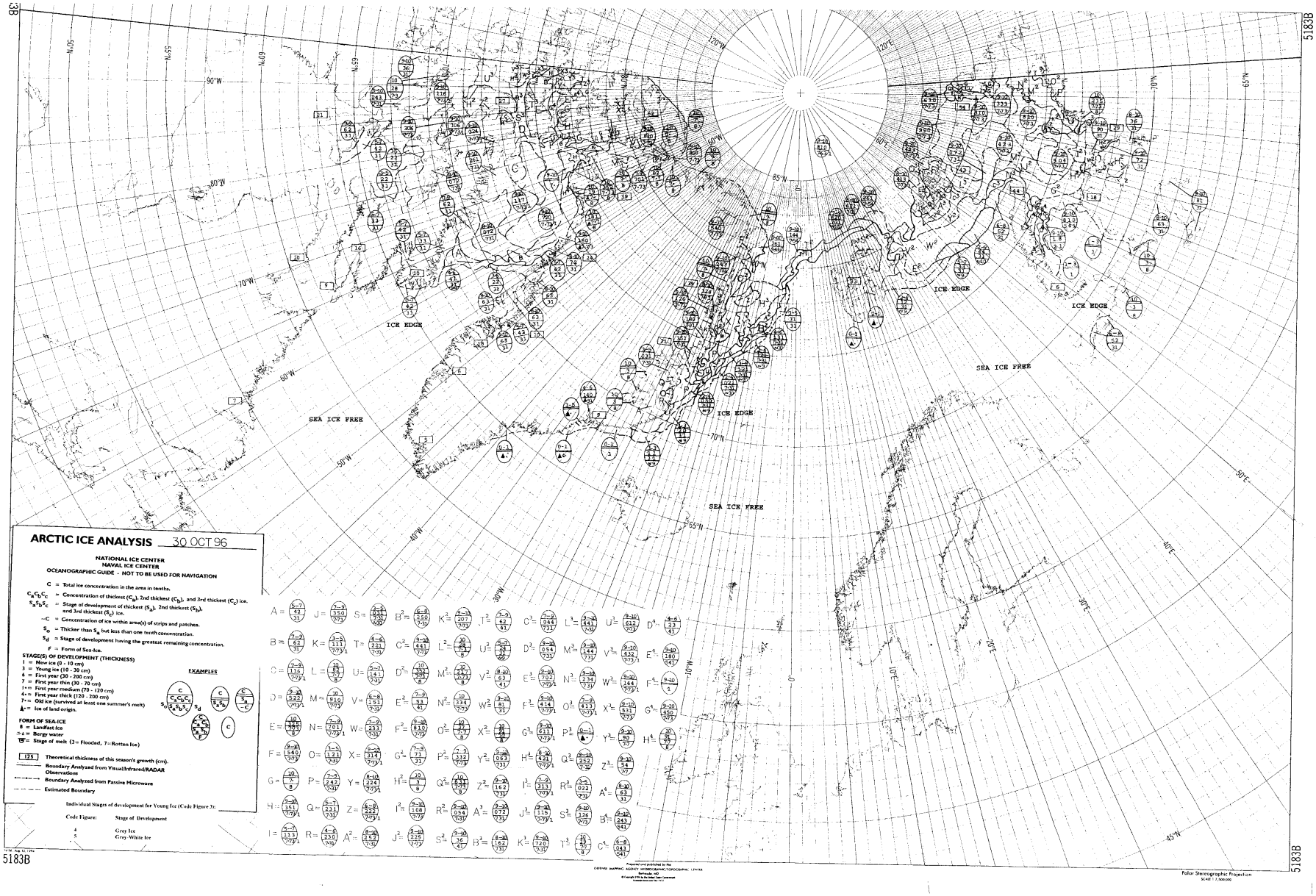
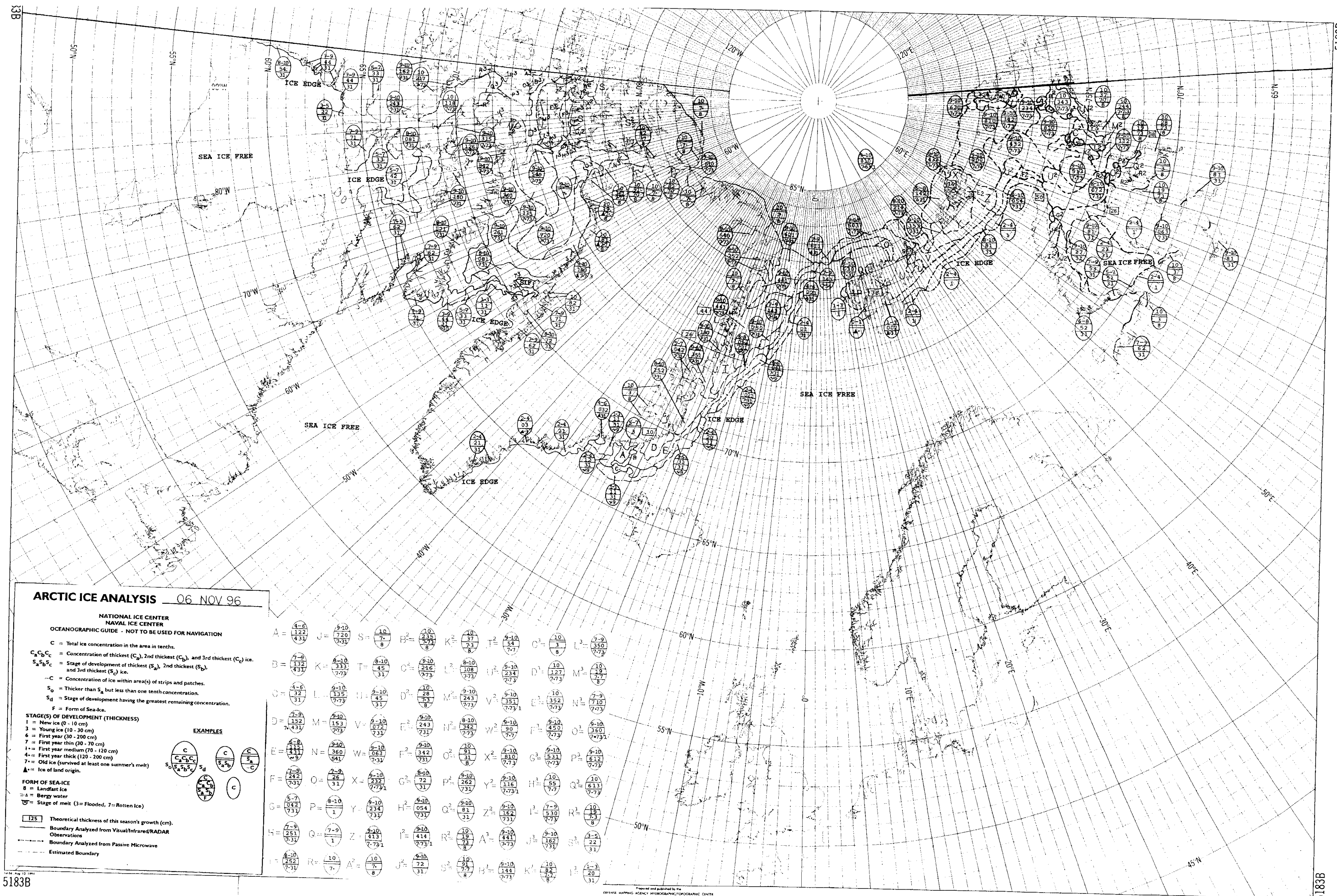
7• = Old ice (survived at least one summer's melt)
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
= Bergy water
= Stage of melt (3= Flooded, 7=Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
5183B

Refer to 1996 Special Arctic Supplement for this Chart


ARCTIC ICE ANALYSIS 30 OCT 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
–C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
1 = New ice (0 - 10 cm)
2 = Young ice (10 - 30 cm)
3 = First year (30 - 200 cm)
4 = First year thin (30 - 70 cm)
1+= First year medium (70 - 120 cm)
4+= First year thick (120 - 200 cm)
7+= Old ice (survived at least one summer's melt)
▲= Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
= Bergy water
= Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Individual Stages of development for Young Ice (Code Figure 3):
Code Figure: Stage of Development
4 Grey Ice
5 Grey White Ice
ICE EDGE
SEA ICE FREE
Polar Stereographic Projection
5183B
5183B

Refer to 1996 Special Arctic Supplement for this Chart


ARCTIC ICE ANALYSIS 06 NOV 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
~C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
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7• = Old ice (survived at least one summer's melt)
▲• = Ice of land origin.
FORM OF SEA-ICE
8 = Landfast Ice
=▲ = Bergy water
= Stage of melt (3 = Flooded, 7 = Rotten Ice)
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
5183B
Polar Stereographic Projection
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER

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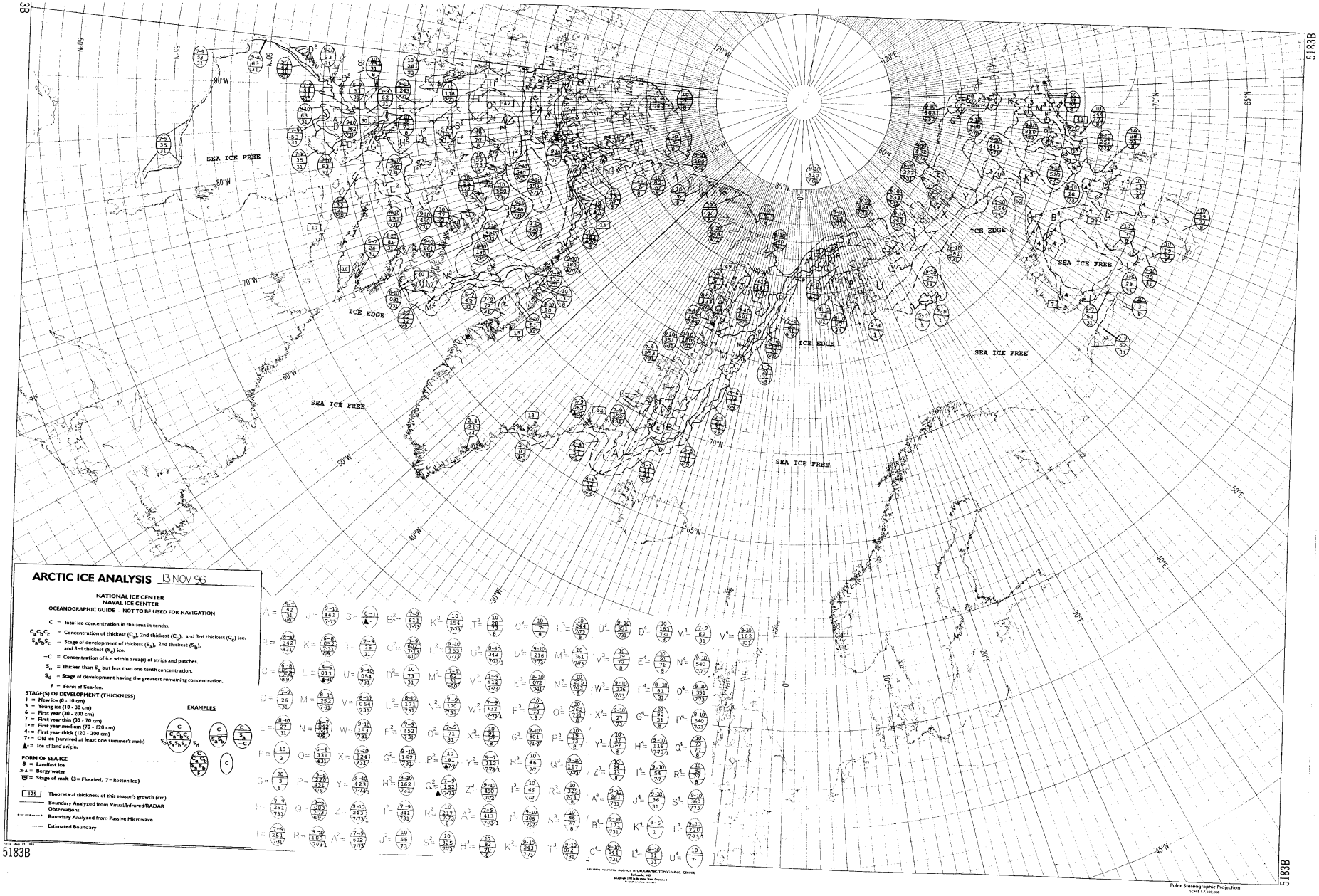

ARCTIC ICE ANALYSIS 13 NOV 96

NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION

C = Total ice concentration in the area in tenths.

$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.

$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.

–C = Concentration of ice within area(s) of strips and patches.

S_d = Thicker than S_a but less than one tenth concentration.

S_g = Stage of development having the greatest remaining concentration.

F = Form of Sea-Ice.

STAGE(S) OF DEVELOPMENT (THICKNESS)

1 = New ice (0 - 10 cm)
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4 = First year (30 - 200 cm)
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1• = First year medium (70 - 120 cm)
4• = First year thick (120 - 200 cm)
7• = Old ice (survived at least one summer's melt)
▲• = Ice of land origin.

FORM OF SEA-ICE

0 = Landfast Ice
2 = Bergy water
9 = Stage of melt (3= Flooded, 7=Rotten Ice)

EXAMPLES

175 Theoretical thickness of this season's growth (cm).

Boundary Analyzed from Visual/Infrared/RADAR Observations

Boundary Analyzed from Passive Microwave

Estimated Boundary

Polar Stereographic Projection
SCALE 1:7 500 000

5183B

5183B

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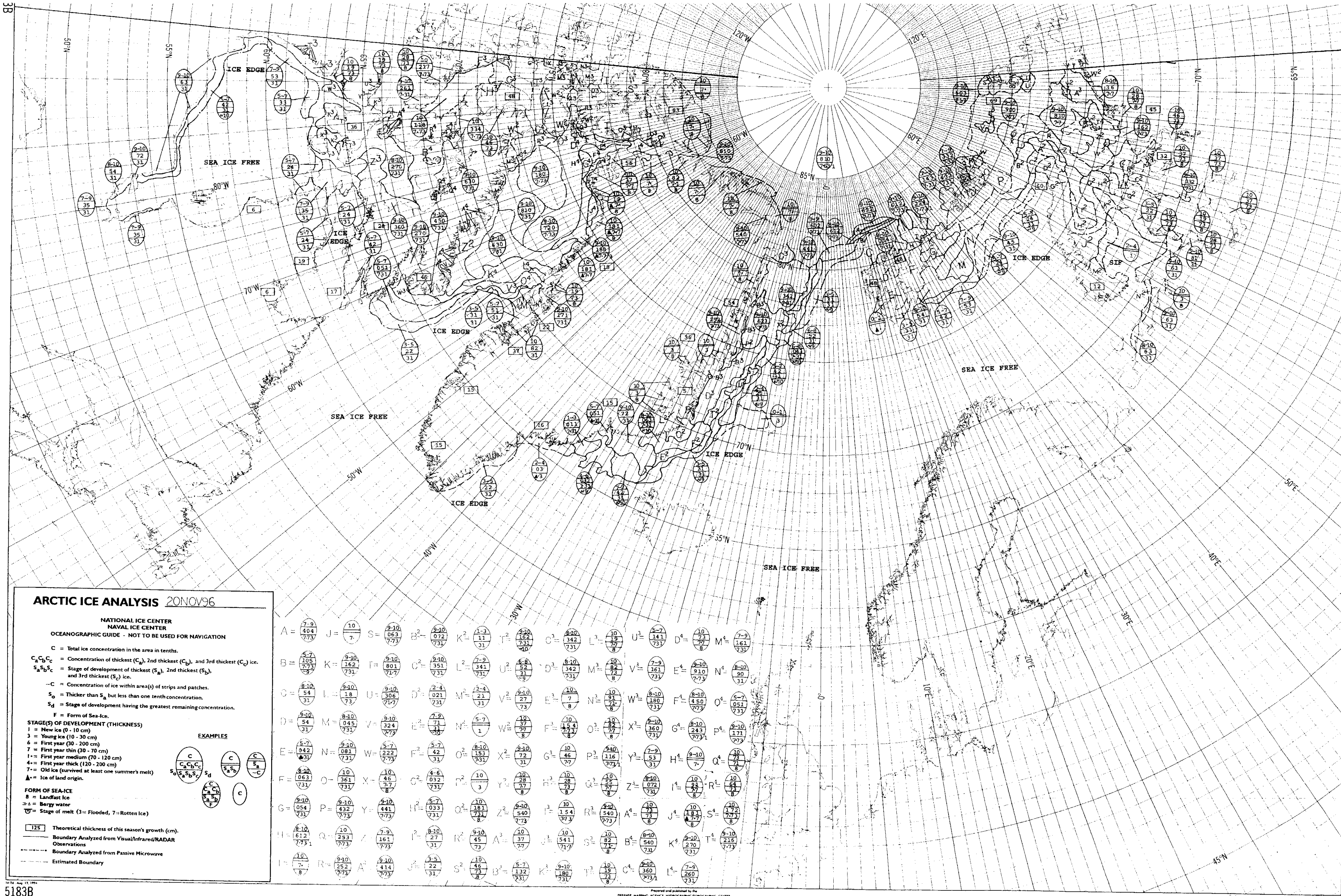
ARCTIC ICE ANALYSIS 20NOV96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
~C = Concentration of ice within area(s) of strips and patches.
S_o = Thicker than S_a but less than one tenth concentration.
S_d = Stage of development having the greatest remaining concentration.
F = Form of Sea-Ice.
STAGE(S) OF DEVELOPMENT (THICKNESS)
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1• = First year medium (70 - 120 cm)
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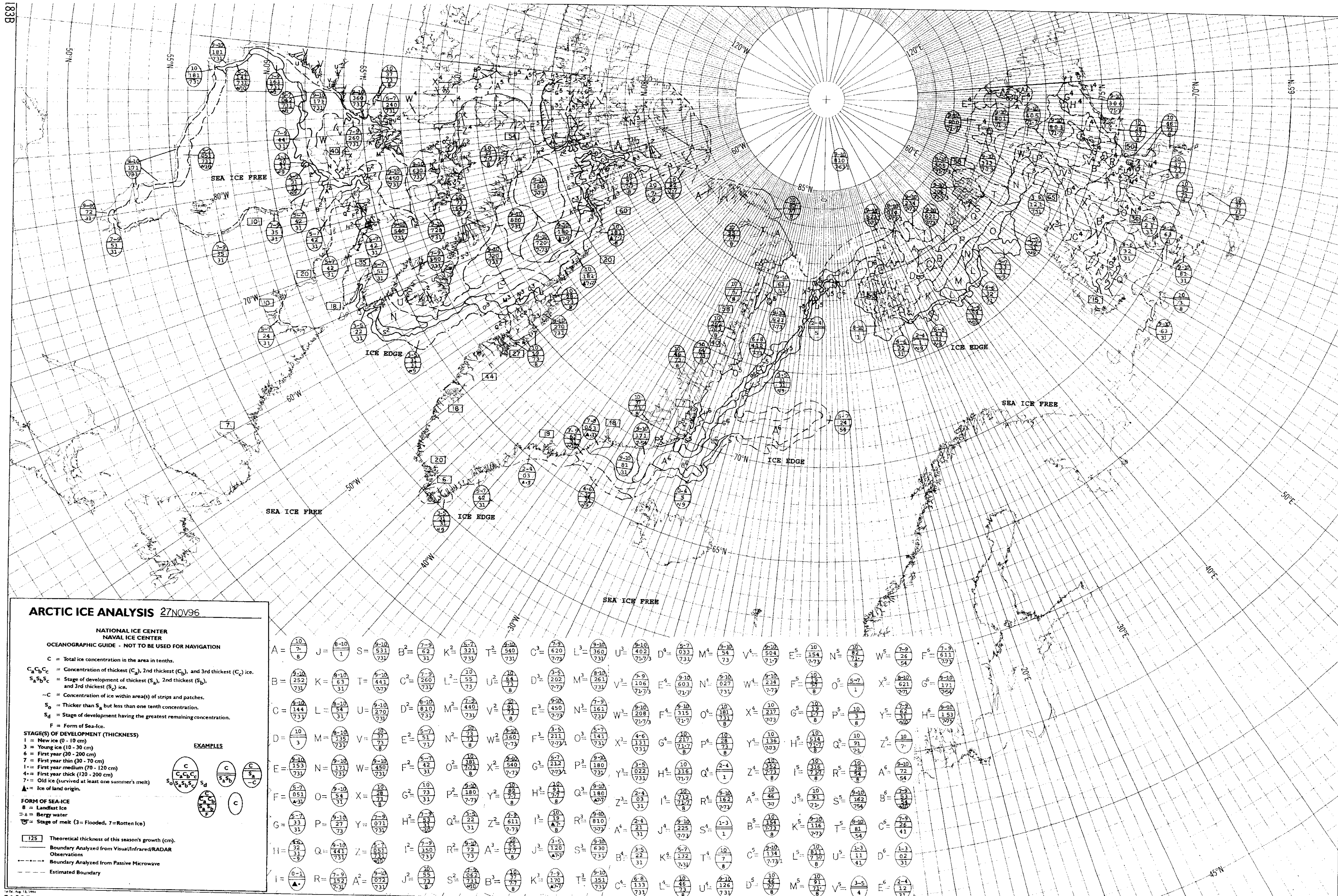
7• = Old ice (survived at least one summer's melt)
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
=Δ = Bergy water
Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
1st Ed. Aug. 15, 1994
5183B
5183E
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection

Refer to 1996 Special Arctic Supplement for this Chart


ARCTIC ICE ANALYSIS 27NOV96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
$C_aC_bC_c$ = Concentration of thickest (C_a), 2nd thickest (C_b), and 3rd thickest (C_c) ice.
$S_aS_bS_c$ = Stage of development of thickest (S_a), 2nd thickest (S_b), and 3rd thickest (S_c) ice.
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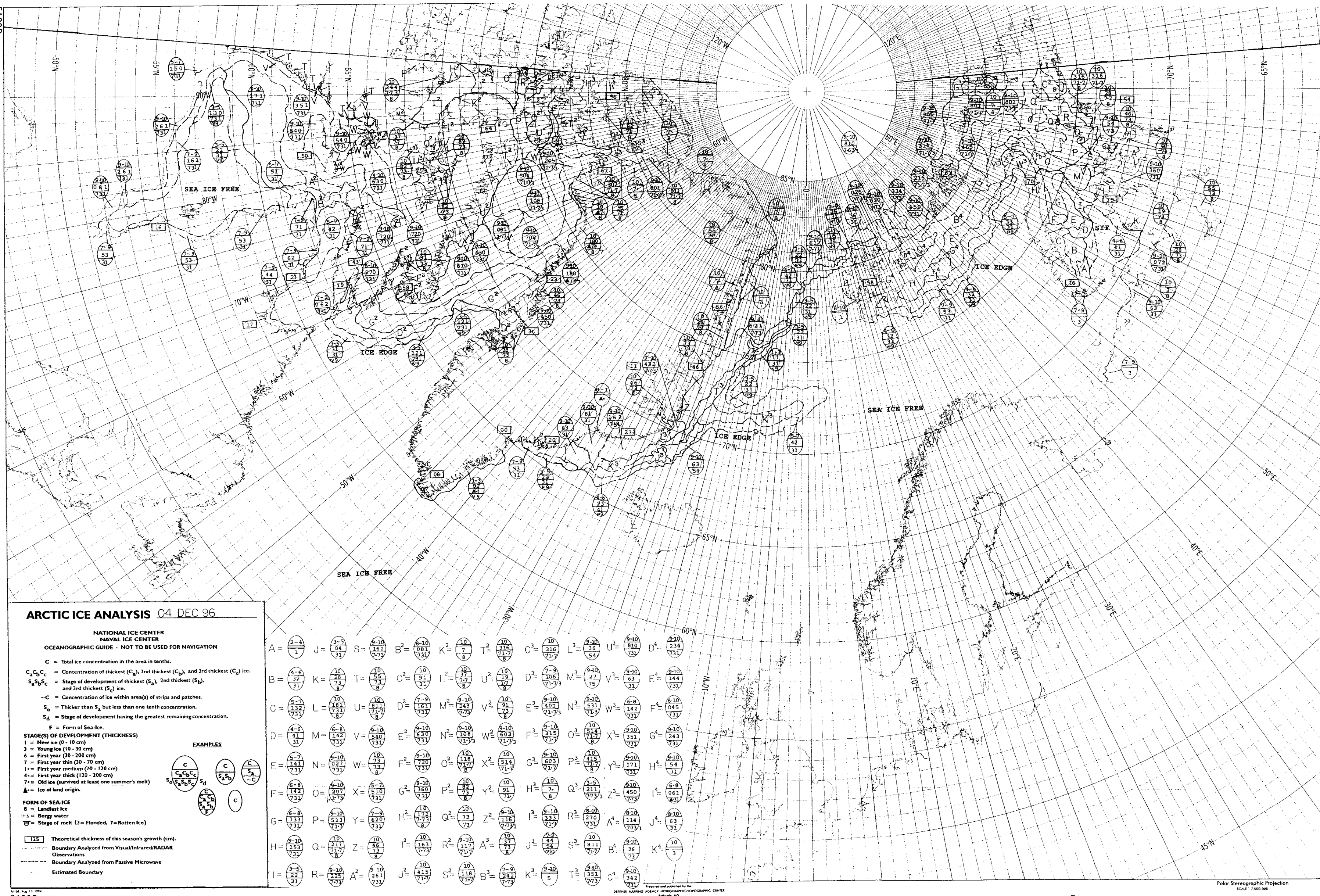
8 = Landfast Ice
=Δ = Bergy water
Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
1st Ed., Aug. 13, 1994
5183B

Refer to 1996 Special Arctic Supplement for this Chart



ARCTIC ICE ANALYSIS 04 DEC 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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F = Form of Sea-Ice.
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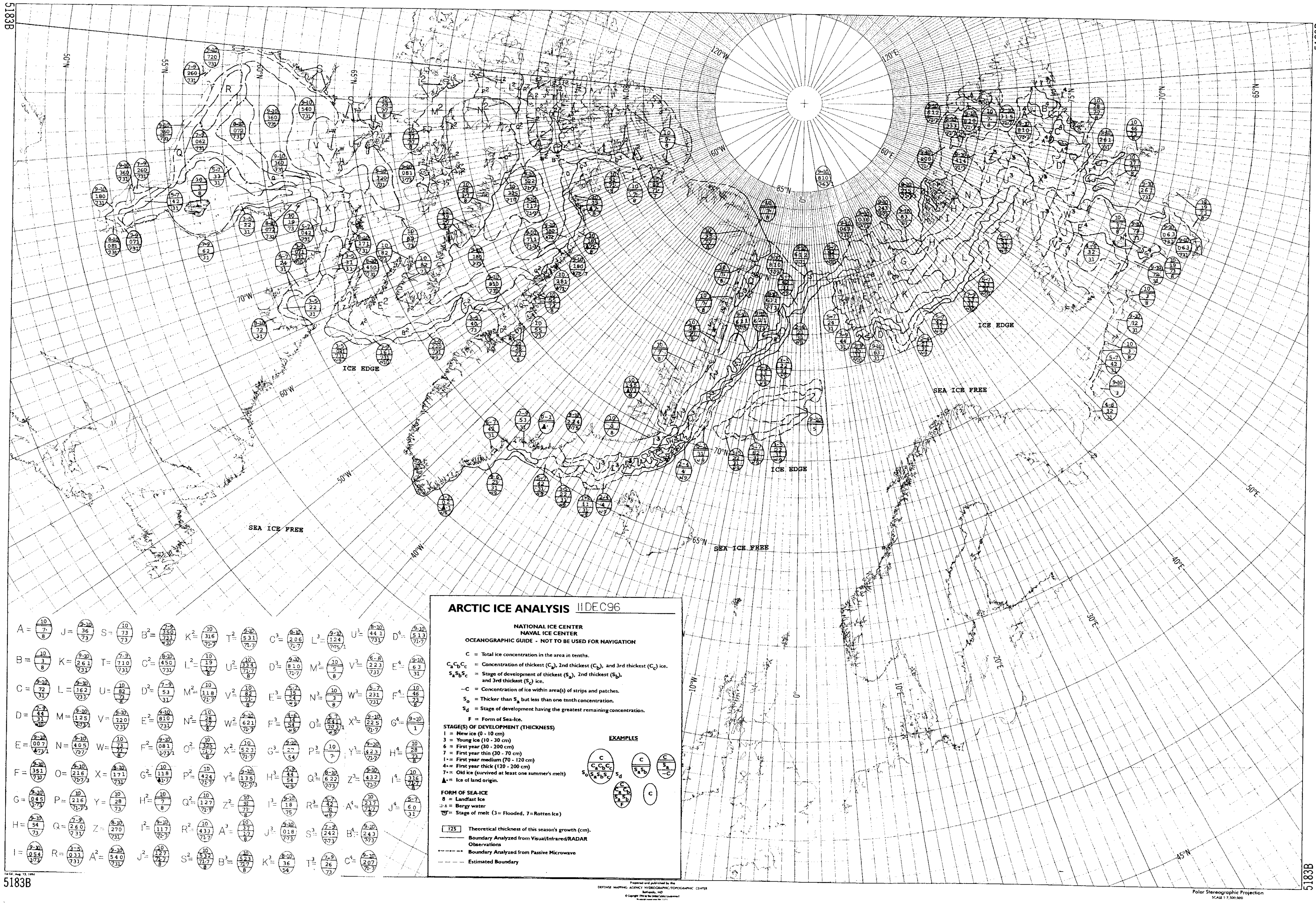
FORM OF SEA-ICE
8 = Landfast Ice
Bergy water
Stage of melt (3= Flooded, 7=Rotten Ice)
EXAMPLES
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
5183B

Refer to 1996 Special Arctic Supplement for this Chart


ARCTIC ICE ANALYSIS 11DEC96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
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EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
Bergy water
Stage of melt (3= Flooded, 7=Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
ICE EDGE
SEA ICE FREE
5183B
Polar Stereographic Projection
Prepared and published by the
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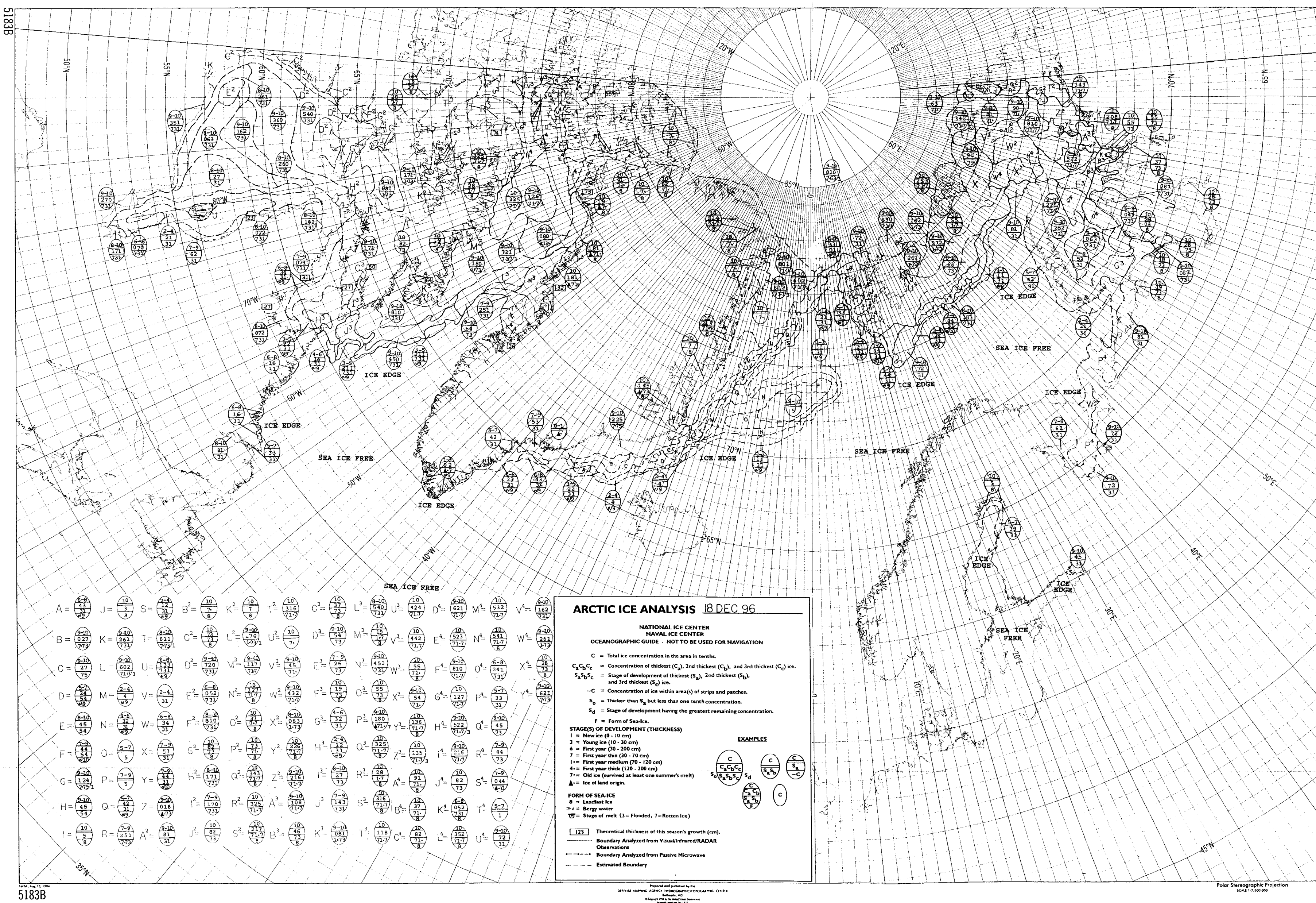
5183B
ARCTIC ICE ANALYSIS 18 DEC 96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
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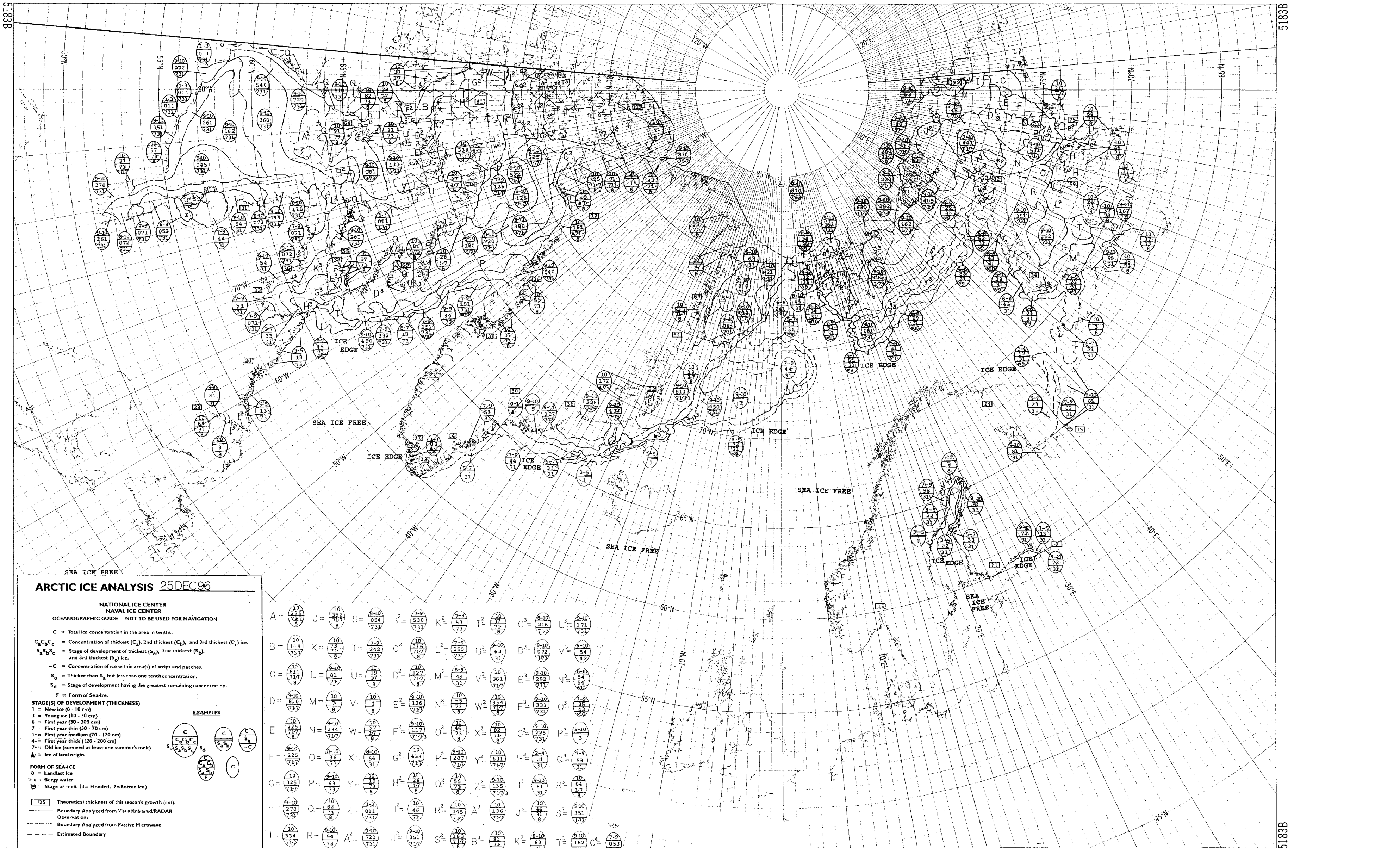
▲• = Ice of land origin.
EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
= Bergy water
= Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
Prepared and published by the
DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER
Bethesda, MD
Polar Stereographic Projection
SEA ICE FREE
ICE EDGE

Refer to 1996 Special Arctic Supplement for this Chart


5183B
ARCTIC ICE ANALYSIS 25DEC96
NATIONAL ICE CENTER
NAVAL ICE CENTER
OCEANOGRAPHIC GUIDE - NOT TO BE USED FOR NAVIGATION
C = Total ice concentration in the area in tenths.
CaCbCc = Concentration of thickest (Ca), 2nd thickest (Cb), and 3rd thickest (Cc) ice.
SaSbSc = Stage of development of thickest (Sa), 2nd thickest (Sb), and 3rd thickest (Sc) ice.
~C = Concentration of ice within area(s) of strips and patches.
So = Thicker than Sa but less than one tenth concentration.
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EXAMPLES
FORM OF SEA-ICE
8 = Landfast Ice
Bergy water
Stage of melt (3 = Flooded, 7 = Rotten Ice)
125 Theoretical thickness of this season's growth (cm).
Boundary Analyzed from Visual/Infrared/RADAR Observations
Boundary Analyzed from Passive Microwave
Estimated Boundary
SEA ICE FREE
ICE EDGE
Polar Stereographic Projection
Prepared and published by the DEFENSE MAPPING AGENCY HYDROGRAPHIC/TOPOGRAPHIC CENTER