

APPENDIX I CONTRACTIONS

ACCRY	Accuracy	FI	Forecast Intensity (Dvorak)
ACFT	Aircraft	FLT	Flight
ADP	Automated Data Processing	FNOC	Fleet Numerical Oceanography Center
AFGWC	Air Force Global Weather Central	FT	Feet
AIREP	Aircraft Weather Report(s) (Commercial and Military)	GMT	Greenwich Mean Time
ANT	Antenna	GOES	Geostationary Operational Environmental Satellite
AOR	Area of Responsibility	HATTRACK	Hurricane and Typhoon Tracking (Steering) Program
APRNT	Apparent	HGT	Height
APT	Automatic Picture Transmission	HPAC	Mean of XTRP and CLIM Techniques (Half Persistence and Climatology)
ARWO	Aerial Reconnaissance Weather Officer	HR(s)	Hour(s)
ATT	Attenuation	HVY	Heavy
AVG	Average	ICAO	International Civil Aviation Organization
AWN	Automated Weather Network	INIT	Initial
BPAC	Blended Persistence and Climatology	INJAH	North Indian Ocean Component of TYAN
BRG	Bearing	INST	Instruction
CDO	Central Dense Overcast	IR	Infrared
CI	Cirriiform Cloud or Cirrus also Current Intensity (Dvorak)	KM	Kilometer(s)
USCINCPAC	Commander-in-Chief Pacific AF - Air Force, FLT - Fleet (Navy)	KT	Knot(s)
CLD	Cloud	LLCC	Low-level Circulation Center
CLIM	Climatology	LVL	Level
CLSD	Closed	M	Meter(s)
CM	Centimeter	M/S	Meter(s) per Second
CNTR	Center	MAX	Maximum
CPA	Closest Point of Approach	MB	Millibar(s)
CSC	Cloud System Center	MET	Meteorological
CYCLOPS	Tropical Cyclone Steering Program (HATTRACK and MOHATT)	MIN	Minimum
DEG	Degree(s)	MOHATT	Modified HATTRACK
DIAM	Diameter	MOVG	Moving
DIR	Direction	MSLP	Minimum Sea Level Pressure
DMSP	Defense Meteorological Satellite Program	MSN	Mission
DST	Distance	NAV	Navigational
EL	Elongated	NEDN	Naval Environmental Data Network
ELEV	Elevation	NEDS	Naval Environmental Display Station
EXP	Exposed		

NEPRF	Naval Environmental Prediction Research Facility	SST	Sea Surface Temperature
NESS	National Environmental Satellite Service	ST	Subtropical
NESDIS	National Environmental Satellite, Data, and Information Service	STR	Subtropical Ridge
NET	Near Equatorial Trough	STY	Super Typhoon
NM	Nautical Mile(s)	TAPT	Typhoon Acceleration Prediction Technique
N/O	Not Observed	TC	Tropical Cyclone
NOAA	National Oceanic and Atmospheric Administration	TCARC	Tropical Cyclone Aircraft Reconnaissance Coordinator
NOCC	Naval Oceanography Command Center	TCFA	Tropical Cyclone Formation Alert
NOGAPS	Navy Operational Global Atmospheric Prediction System	TCM	Tropical Cyclone Model
NWOC	Naval Western Oceanography Center	TD	Tropical Depression
NR	Number	TDO	Typhoon Duty Officer
NRL	Naval Research Laboratory	TIROS	Television Infrared Observation Satellite
NTCM	Nested Tropical Cyclone Model	TPAC	Extrapolation and Climatology blend
OBS	Observations	TS	Tropical Storm
OTCM	One-Way (Interactive) Tropical Cyclone Model	TY	Typhoon
PACOM	Pacific Command	TYAN	Typhoon Analog Program
PCN	Position Code Number	TYFN	Western North Pacific Component (Revised) of TYAN
PSBL	Possible	TUTT	Tropical Upper-Tropospheric Trough
PTLY	Partly	ULAC	Upper-level Anticyclone
QUAD	Quadrant	ULCC	Upper-level Circulation Center
RADOB	Radar Observations	VEL	Velocity
RECON	Reconnaissance	VIS	Visual
RNG	Range	VMNT	Vector Movement (ddff)
RT	Right	WESTPAC	Western (North) Pacific
SAT	Satellite	WMO	World Meteorological Organization
SFC	Surface	WND	Wind
SLP	Sea Level Pressure	WRNG(s)	Warning(s)
SPOL	Spiral Overlay	WRS	Weather Reconnaissance Squadron
SRP	Selective Reconnaissance Program	XTRP	Extrapolation
STNRY	Stationary	Z	Zulu Time (Greenwich Mean Time)

APPENDIX II DEFINITIONS

BEST TRACK - A subjectively smoothed path, versus a precise and very erratic fix-to-fix path, used to represent tropical cyclone movement.

CENTER - The vertical axis or core of a tropical cyclone. Usually determined by wind, temperature, and/or pressure distribution.

CYCLONE - A closed atmospheric circulation rotating about an area of low pressure (counterclockwise in the Northern Hemisphere).

EPHEMERIS - Position of a body (satellite) on space as a function of time; used for gridding satellite imagery. Since ephemeris gridding is based solely on the predicted position of the satellite, it is susceptible to errors from vehicle pitch, orbital eccentricity, and the oblateness of the earth.

EXPLOSIVE DEEPENING - A decrease in the minimum sea level pressure of a tropical cyclone of 2.5 mb/hr for 12 hrs or 5.0 mb/hr for six hrs (ATR 1971).

EXTRATROPICAL - A term used in warnings and tropical summaries to indicate that a cyclone has lost its "tropical" characteristics. The term implies both poleward displacement from the tropics and the conversion of the cyclone's primary energy sources from release of latent heat of condensation to baroclinic processes. The term carries no implications as to strength or size.

EYE - A term used to describe the central area of a tropical cyclone when it is more than half surrounded by wall cloud.

FUJIWHARA EFFECT - An interaction in which tropical cyclones within about 700 nm (1296 km) of each other begin to rotate about one another. When intense tropical cyclones are within about 400 nm (741 km) of each other, they may also begin to move closer to each other.

MAXIMUM SUSTAINED WIND - Highest surface wind speed averaged over a one-minute period of time. Peak gusts over water average 20 to 25 percent higher than sustained winds.

RAPID DEEPENING - A decrease in the minimum sea level pressure of a tropical cyclone of 1.25 mb/hr for 24 hrs (ATR 1971).

RECURVATURE - The turning of a tropical cyclone from an initial path toward the west or northwest to a path toward the northeast.

RIGHT ANGLE ERROR - The distance described by a perpendicular line from the best track to a forecast position. (See figure 4-1).

SIGNIFICANT TROPICAL CYCLONE - A tropical cyclone becomes "significant" with the issuance of the first numbered warning by the responsible warning agency.

SUPER TYPHOON/HURRICANE - A typhoon/hurricane in which the maximum sustained surface wind (one-minute mean) is 130 kt (67 m/s) or greater.

TROPICAL CYCLONE - A non-frontal low pressure system of synoptic scale developing over tropical or subtropical waters and having a definite organized circulation.

TROPICAL CYCLONE AIRCRAFT RECONNAISSANCE COORDINATOR - A USCINCPACAF representative designated to levy tropical cyclone aircraft weather reconnaissance requirements on reconnaissance units within a designated area of the PACOM and to function as coordinator between USCINCPACAF, aircraft weather reconnaissance units, and the appropriate typhoon/hurricane warning center.

TROPICAL DEPRESSION - A tropical cyclone in which the maximum sustained surface wind (one-minute mean) is 33 kt (17 m/s) or less.

TROPICAL DISTURBANCE - A discrete system of apparently organized convection---generally 100 to 300 nm (185 to 556 km) in diameter---originating in the tropics or subtropics, having a non-frontal migratory character, and having maintained its identity for 24 hours or more. It may or may not be associated with a detectable perturbation of the wind field. As such, it is the basic generic designation which, in successive stages of intensification, may be classified as a tropical depression, tropical storm or typhoon (hurricane).

TROPICAL STORM - A tropical cyclone with maximum sustained surface winds (one-minute mean) in the range of 34 to 63 kt (17 to 32 m/s) inclusive.

TROPICAL UPPER-TROPOSPHERIC TROUGH (TUTT) - "A dominant climatological system, and a daily synoptic feature, of the summer season over the tropical North Atlantic, North Pacific and South Pacific Oceans," from Sadler, J.C., Feb. 1976: Tropical Cyclone Initiation by the Tropical-Upper Tropospheric Trough (NAVENVPREDRSCHFAC Technical Paper No. 2-76).

TYPHOON/HURRICANE - A tropical cyclone in which the maximum sustained surface wind (one-minute mean) is 64 kt (33 m/s) or greater. West of 180 degrees longitude they are called typhoons and east of 180 degrees they are called hurricanes. Foreign governments use these or other terms for tropical cyclones and may apply different intensity criteria.

VECTOR ERROR - The distance described by a straight line from the forecast position to the position at verification time as found on the best track. (See Figure 4-1).

WALL CLOUD - An organized band of cumuliform clouds immediately surrounding the central area of a tropical cyclone. The wall cloud may entirely enclose or only partially surround the center.

APPENDIX III
NAMES FOR TROPICAL CYCLONES

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>
ANDY	ABBY	ALEX	AGNES
BRENDA	BEN	BETTY	BILL
CECIL	CARMEN	CARY	CLARA
DOT	DOM	DINAH	DOYLE
ELLIS	ELLEN	ED	ELSIE
FAYE	FORREST	FREDA	FABIAN
GORDON	GEORGIA	GERALD	GAY
HOPE	HERBERT	HOLLY	HAL
IRVING	IDA	IKE	IRMA
JUDY	JOE	JUNE	JEFF
KEN	KIM	KELLY	KIT
LOLA	LEX	LYNN	LEE
MAC	MARGE	MAURY	MAMIE
NANCY	NORRIS	NINA	NELSON
OWEN	ORCHID	OGDEN	ODESSA
PEGGY	PERCY	PHYLLIS	PAT
ROGER	RUTH	ROY	RUBY
SARAH	SPERRY	SUSAN	SKIP
TIP	THELMA	THAD	TESS
VERA	VERNON	VANESSA	VAL
WAYNE	WYNNE	WARREN	WINONA

NOTE:

Names are assigned in rotation, alphabetically. When the last name (WINONA) has been used, the sequence will begin again with "ANDY".

Source: CINCPACINST 3140.1 (series)

APPENDIX IV REFERENCES

- Atkinson, G. D., and C. R. Holliday, 1977: Tropical Cyclone Minimum Sea Level Pressure - Maximum Sustained Wind Relationship for the Western North Pacific. Monthly Weather Review, Vol. 105, No. 4, pp. 421-427.
- Dunnavan, G. M., 1981: Forecasting Intense Tropical Cyclones Using 700 MB Equivalent Potential Temperature and Central Sea Level Pressure. NAVOCEANCOMCEN/JTWC TECH NOTE: JTWC 81-1, 12 pp.
- Dvorak, V. F., 1973: A Technique for the Analysis and Forecasting of Tropical Cyclone Intensities from Satellite Pictures. NOAA Technical Memorandum NESS 45, 19 pp. (Note: Updated info in May 1982 Training Notes and Appendix: Tropical Cyclone Intensity Analysis and Forecasting from Satellite Visible or Enhanced Infrared Imagery).
- Holland, G. J., 1980: An Analytic Model of the Wind and Pressure Profiles in Hurricanes. Monthly Weather Review, Vol 108, No. 8, pp. 1212-1218.
- Sadler, J. C., 1976: Tropical Cyclone Initiation by the Tropical Upper-Tropospheric Trough. NAVENVPREDRSCHFAC Technical Paper No. 2-76, 103 pp.
- Sikora, C. R., 1976: An Investigation of Equivalent Potential Temperature as a Measure of Tropical Cyclone Intensity. FLEWEACEN TECH NOTE: JTWC 76-3, 12 pp.
- Weir, R. C., 1982: Predicting the Acceleration of Northward-moving Tropical Cyclones Using Upper-Tropospheric Winds. NAVOCEANCOMCEN/JTWC TECH NOTE: NOCC/JTWC 82-2.

APPENDIX V PAST ANNUAL TROPICAL CYCLONE REPORTS

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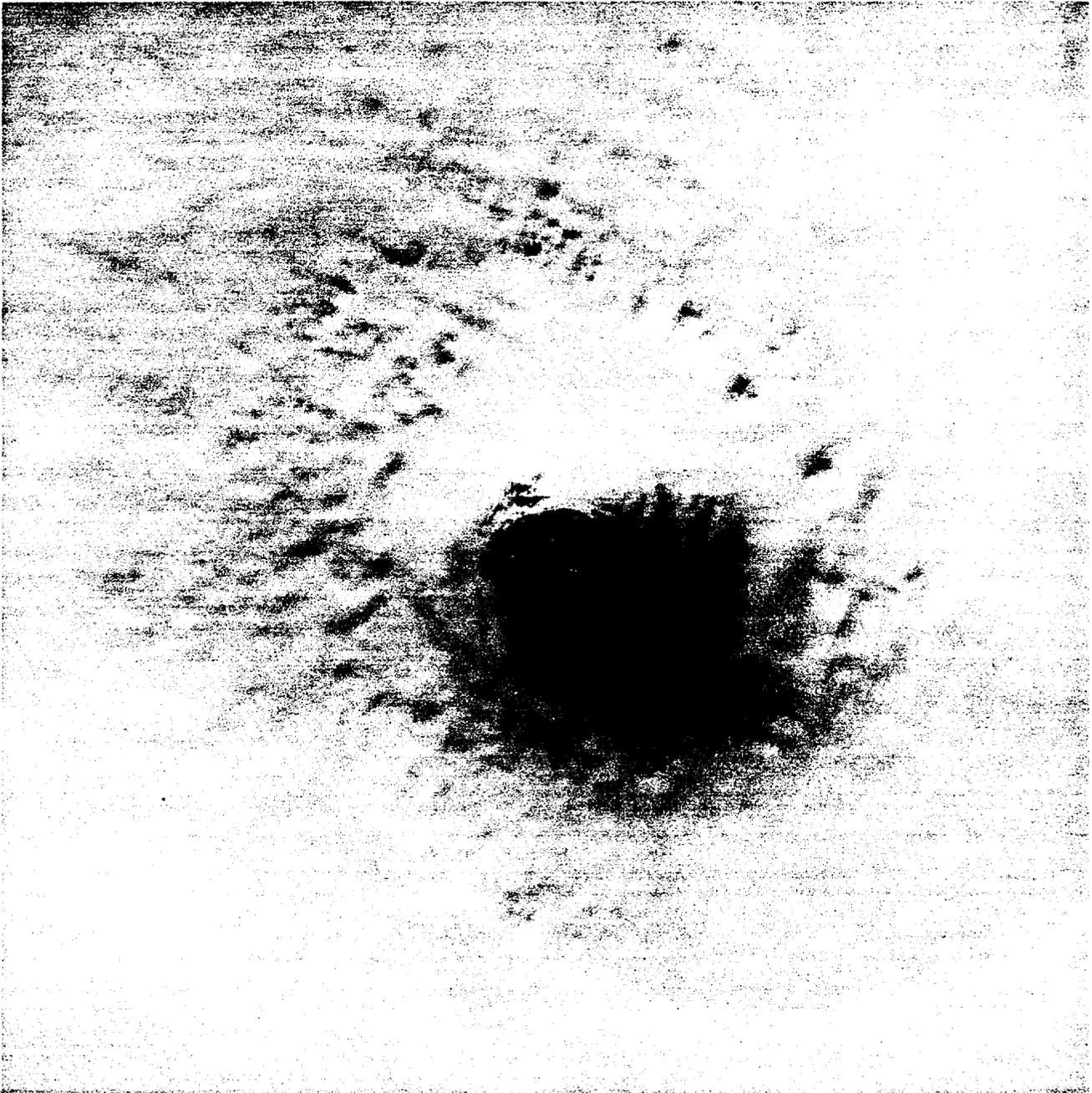
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)												
Annual publication summarizing the tropical cyclone season in the western North Pacific, Bay of Bengal and Arabian Sea. A brief narrative is given on each significant tropical cyclone including its best track. All reconnaissance data used to construct the best tracks are provided. Forecast verification data and statistics for the JTWC are summarized.												

Block 19, (Continued)

Dynamic tropical cyclone models
Typhoon analog model
Tropical cyclone steering model
Climatology/persistence techniques



Tropical Cyclone 30S (Kamisy) on 9 April 1984, one day after the front cover photograph. Mission 41C orbit was directly over the storm. This nadir view was taken with a 250 mm lens. To give a sense of size, the picture is approximately 55 by 55 nm (102 by 102 km). The eye diameter is 10 nm (19 km). Note the overshooting tops through the tropopause in the eyewall convection. The resolution with this lens is 40 to 50 meters. (Photograph provided by LCDR W. T. Aldinger, NAVPOLAROCEANCEN Detachment, Johnson Space Center, Texas).