A QUICK REFERENCE GUIDE FOR OPERATIONAL FORECASTING PAPERS

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I. INTRODUCTION

There has been a cornucopia of operational forecasting papers written on a wide variety of topics in recent years. It is very arduous for the operational forecaster to keep track of scattered binders, pamphlets, journals, and notebooks of meteorological and hydrological papers and studies within the individual's office. This is the first revision of the paper that was originally published as Central Region TSP 98-01. Due to many requests, the manuscript now has been consolidated to include both hyperlinked texts and non-hyperlinked texts. Many topics have been expanded, such as CSI, MCS, tornadoes, and the WSR-88D. In addition, many new topics, such as microphysics, dynamic cooling, gust fronts, and several case studies have been added.

This guide will help fill the gap for the operational forecaster by indexing the various topics by season and author. Older rules of thumb and techniques were included, such as the Magic Chart (Chaston 1989), Forecasting Ground Blizzards (Van Ess 1985), and Improving Over MOS Guidance (Hendrickson 1983). Additional references are included on newer operational techniques, such as Estimating the VIL of the Day (Wilken 1994), Heavy Rain Forecasting Techniques (Funk, 1993), and Rotational Shear Nomograms (Falk, 1998).

II. SOURCES OF INFORMATION

Scientific Services Divisions (SSD) from Central, Eastern, Southern, and Western regions provided indices for all Technical Attachments (TA), Applied Research Papers (ARP), and Technical Memoranda (TM) for the last 10 years. In addition, various internet home pages were perused, both civilian and military, for more material. Finally, conference preprints and post-prints were obtained to complete this guide. This guide is by no means a complete list of the various subjects, but rather attempts to give the forecaster several perspectives from different authors.

This guide is separated by subject matter, and attempts to cover most weather phenomena that affect the operational field forecaster. A few of the authors topics are listed under two different subject titles. For example, "Composite 500 mb Arctic Outbreak Patterns" by Van Ess, is listed under both ARCTIC and 500 MB.

The material can be used in two ways. If the forecaster wants to prepare for an upcoming weather season, he or she can look through the references on a particular subject. Secondly, if a forecaster is writing a paper or forecast study, they have a quick and easy list of references right at their fingertips from which to begin. Due to large number of subjects, the guide has been broken down into five parts: spring, summer, fall, winter, and general topics. The links provided in this document will take the reader to those papers that are available online. For a paper that is
not available online, the link will connect you to the bibliography line. It is hoped that this guide will help you to become a better operational forecaster.

III. SPRING SEASON and THUNDERSTORMS


BOOKEND VORTEX - Pfost and Gerard (1997)


BOW ECHO - Przybylinski (1995)


BOW ECHO: METEOROLOGICAL CONDITIONS - Johns (1993)


CAPPING INVERSION & THUNDERSTORMS - Emlaw (1991)

CHECKLIST - Gordon and Albert (2000), Miller (1972)

DERECHO: SPRING CASE STUDIES - Rose and Troutman (1998)

DERECHO: WSR-88D CASE STUDY - Small (1996)

DOWNBURSTS - Ladd (1992)


EHI - Davies (1993)

ELEVATED CONVECTION: EVALUATING WIND SHEAR - Jungbluth and Kula (1997)


Lanicci (1985)

EQUILIBRIUM LEVEL - Liles (1983)

GUST FRONT - Chapman and Holmes (1998)

HAIL - Smith (1996), Moore and Pino (1990), Shanklin (1989)


HELMHOLTZ INSTABILITY - Kingsmill (1993)


HP SUPERCELLS - Moller and Przybylinski (1990)


JET STREAM - Glass (1993), Uccellini (1990)

LEFT MOVER SEVERE THUNDERSTORM - Phillips (1994)

LIGHTNING: FORECASTING CONVECTIVE WEATHER - Lewis (1989)

LIGHTNING: RADAR OBSERVATIONS - Elson and Margraf (1996)


LOW TOPPED THUNDERSTORMS - Boyne (1995), Murphy and Woods (1992)

MACROBURST ON RADAR - Achtemeier et al., (1993)

MESOSCALE PREDICTION - Fujita (1992)

MICROBURST - Byrd (1990), Ellis and Oakland (1989)

MIXING RATIO - Weinbrecht (1987)

MOISTURE COVERAGE - Bothwell (1986)

NOCTURNAL JET - Belles (1993)

NOCTURNAL SEVERE OUTBREAKS - Fike (1996)

NON-SUPERCCELL TORNADOES - Britt and Miller (1999), Smith (1996)

NORTHWEST FLOW - Johns (1984)
OUTBREAKS: BOW ECHOES VERSUS SUPERCELLS - Johns and Hart (1993)

OUTBREAKS: COLD CORE - Goetsch (1988)

PROFILER - Rich (1992)

REAR FLANK DOWNDRAFT - Pfost et al., (1997), Lemon and Doswell (1979)

SATELLITE - Goetsch (1987), Purdom (1986)


SATELLITE: ENHANCED V SIGNATURE - McCann (1981)

SATELLITE: IR - Byrd (1987)

SATELLITE: TRAINING CASE STUDY - Weaver et al., (1999)

SATELLITE: WATER VAPOR - Ellrod (1990)

SEVERE PULSE THUNDERSTORMS - Konvicka (1989)

SINGLE THUNDERSTORM POTENTIAL - Falk et al., (1998)

SMALL/MINI SUPERCELLS - Grant and Prentice (1996), Davies (1993)


SQUALL LINES - Schafer (1996), Bluestein and Jain (1985)

STORM RELATIVE WIND - Thompson (1998)

SUPERCELLS - Moller et al., (1994)


TORNADIC SQUALL LINE - Wolf (2000)


TORNADO CASE STUDY: PLAINFIELD, IL 8/28/90 - Fujita (1991)
TORNADO: FORECASTING SHEAR MAGNITUDES AND HODOGRAPHS - Davies (1989)
TORNADO: RAPID SCAN - Purdom and Weaver (1992)
VERY LARGE HAIL (4" & GREATER) - Polston (1996)
WET BULB ZERO - Shanklin (1989)
WET MICROBURST - Atkins and Wakimoto (1991)
WIND AND INSTABILITY - Davies (1993)
WIND GUSTS - Frazier (1994)
WINDEX - McCann (1994)
WSR-88D: BOW ECHO - Gerard (1997)
WSR-88D: DEEP CONVERGENCE ZONE - Lemon and Burgess (1993)

WSR-88D: MARC SIGNATURE - Wally (1998)

WSR-88D: MESOCYCLONE CHARACTERISTICS DURING AN OUTBREAK - Turnage et al., (2000)

WSR-88D: NOMOGRAMS - Brown (1997)


WSR-88D: SPECTRUM WIDTH - Buller and Mentzer (1998)

WSR-88D: TVS - Trapp and Mitchell (1995b)


WSR-88D: VIL VERSUS ROTATIONAL RELOCITY - Murphy et al., (1994)


IV. SUMMER SEASON

CONVECTIVELY INDUCED VORTICITY CENTER (CIVC) - Imy (1985)

DERECHOS - Johns et al., (1990)

DERECHO: SUMMER CASE STUDY - Miller and Johns (2000)

FLASH FLOOD DECISION TREE - Johnson and Moser (1993)

FLASH FLOOD FORECASTING - Doswell et al., (1995)

HAZE - Corfidi (1996)

HEAT CHECKLIST - Falk and Christmas (1989)

HEAT INDEX - Rothfusz (1990)
HEAVY RAINFALL FORECASTING - Funk (1993), Junker (1992)

HEAVY RAINFALL & FLASH FLOOD FORECASTING - Maddox (1979b), Maddox et al., (1979)

HEAVY RAINFALL: BIG THOMPSON CANYON, CO (7/76), & RAPID CITY, SD (6/72) - Maddox et al., (1978)


HEAVY RAINFALL: CHEYENNE, WY 8/1/95 - Glancy and Daseler (1986)

HEAVY RAINFALL: CLIMATOLOGICAL FAVORED THICKNESS - Rose et al., (1999)


HEAVY RAINFALL: JOHNSTOWN, PA 7/19/77 - 7/20/77 - US Department of Commerce (1977)


HEAVY RAINFALL: USING PROFILER & SATELLITE DATA - Smith (1993)


MCS: DAYTIME SURFACE GEOSTROPHIC WIND MAXIMUM - Augustine (1992)


MCS: LATE AFTERNOON TROPOSPHERIC SIGNALS - Augustine and Caracena (1993)


MONSOONAL CHECKLIST - Haro (1998)

MVC - Schmidt (2000)


TROPICAL CYCLONE: COASTAL FRONT TORNADOES - Hudgins and Frederick (1997)

WESTERN USA THUNDERSTORM GUST POTENTIAL - McDonald (1976)

WSR-88D HEAVY RAIN CASE STUDY - Egger and Vasiloff (1998)

WSR-88D MESO-VORTICES IN HURRICANE BERTHA (1996) - Wright and Bennett (1997)

V. COOL SEASON

COLD AIR FUNNELS - Cooley (1978)

COLD CORE THUNDERSTORMS - Grant (1995)

CLOUDS - Walawender (1994)

ELEVATED CONVECTION - Banitt (1999), Colman (1990a), Colman (1990b)


INDICES - Rogash (1994)

LIGHTNING AND TORNADO RELATIONSHIP - Carle and Orville (1995)

POPS - Lulofs (1994)

SATELLITE FOG PRODUCT - Canepa and Strobin (2000)


TORNADO - COOL SEASON CONDITIONS - Vescio and Thompson (1998)

TORNADO - NORTHERN CALIFORNIA - Blier and Batten (1993)


WSR-88D SUPERCELL - Calianese et al., (1996)

VI. WINTER SEASON


BLIZZARD CASE STUDY - Holsten and Hendricks (1997), Sykes (1966)
CHECKLIST - Gordon (1997)

COMPOSITE CHART - Janish et al., (1996)

COUPLED JET CASE STUDY - Shea and Przybylinski (1995)


CSI: EQUIVALENT POTENTIAL VORTICITY - Moore and Lambert (1993)

CSI: FORECAST TECHNIQUES - Snook (1992)

CSI: RELATIONSHIP TO THUNDER AND HEAVY SNOW - Bradshaw (1994)


DYNAMIC COOLING - Steigerwaldt (1998)

EAST COAST SNOWSTORMS - Kocin and Uccellini (1984)


EXPLOSIVE CYCLOGENESIS CHECKLIST - Gurka et al., (1995)

FLOOD - Naglic (1990)


HEAVY SNOW CASE STUDY - Cobb and Albright (1995)

HIGH WIND DECISION TREE FOR W TX & SE NM - Murdoch and Deberry (1999)

INSTABILITY BURST - Scofield and Robinson (1990), Scofield (1989)

INSTABILITY BURST: CASE STUDY - Medlin (1993)

ISENTROPIC - Garcia (1999), Wilken (1990)


LAKE EFFECT SNOW: HOURLY FORECAST SOUNDINGS - Niziol and Mahoney (1997)

LAKE EFFECT SNOW: 850 TEMP, 850/700 UVV, 850/700 RH - Evans (1996)


LOW LEVEL WIND SHEAR - Faught and Rosemark (1992)

MAGIC CHART - Outlaw (1994), Kirkpatrick (1990)

MICROPHYSICS - Staudenmaier Jr. (1999), Baumgardt (1999)

MOISTURE FLUX CONVERGENCE - Bodner (1996)


PROFILERS - Schumacher (1993)

SATELLITE - Scofield and Robinson (1990), Beckman (1989)

SATELLITE (IR) & SNOW BAND WIDTH - Morrison (1989)

SATELLITE TECHNIQUES FOR FORECASTING HEAVY SNOW - Johnson (1995)

SEA FOG and STRATUS - Johnson and Graschel (1992)

SNOW ACCUMULATION VERSUS SOIL TEMPERATURE - Brown (1989)


SNOWSTORM: LOUISVILLE 1/94 - Funk and Moore (1993)


SQUALL LINE - Trayers and Riordan (1996)

STRATOCUMULUS - Bilke (1994)


SYNOPTIC REGIMES - Mathewson and Nouhan (1999)

TEMPERATURE & SNOW COVER - Jensen (1997), Richardson (1990), CRH (1973)

TORNADO - Herlad and Morgan (1998)

WINDEX - Lundstedt (1993)


WSR-88D FREEZING RAIN & OVERRUNNING - Prater and Borho (1992)

WSR-88D & LIGHTNING - Gremillion and Harms (1999)

925 MB - Figurskey (1994)

500 MB - Van Ess (1997), Steigerwaldt (1991)

200 MB - Schumacher (1996)

VII. GENERAL TOPICS


AVIATION: LOW LEVEL SHEAR - Johnson (1994)

AVIATION: "OCCASIONAL" - Felton (1993)

AVIATION: PIREPS - Arkell (1991)

AVIATION: PROFILER DATA - Thaler (1992)

BARNES OBJECTIVE ANALYSIS - Cook (1999), Cook (1999)

COASTAL FLOOD FORECASTING - Sobien and Paxton (1998)

CONVEYOR BELTS - Kubina (1997)

DAM FAILURE - Kane et al., (1996)


DOWNSLOPE WIND - Dunn (1999), Tesar and Keighton (1997)

FIRE WEATHER - Lyster and Murdoch (1999)

FORECAST STUDY - Nastrom (1990)
GOES SOUNDER - Schrab (1997)


HYDROLOGY - Stewart (1991)


LIGHTNING - Holle and Lopez (1993)

LOW LEVEL JET - Beckman (1995)

MESOHIGHS - Charney and Fritsch (1996)


MODEL: RUC - Myers (1996)


MOUNTAIN WAVE - WRH SSD (1985)

OROGRAPHIC - Huston (1990)

PATTERN RECOGNITION - Togstad (1989), Browning (1986)

PRECIPITABLE WATER - Schultz (1982)

PRESSURE - Leblang (1989), Sangster (1985)


PUBLIC FORECASTING - Truett (1996)


SATELLITE: EXTRATROPICAL CYCLONES - Scofield and Spayd Jr. (1983)

SATELLITE: FORECAST FUNNEL - Scofield (1993)
SATELLITE: HEAVY PRECIP CONVICTIVE CATEGORIES - Scofield (1985)

SATELLITE: HEAVY PRECIP ESTIMATES - Scofield (1985)

SATELLITE: SUBTLE HEAVY RAINFALL SIGNATURES - Spayd Jr. and Scofield (1983)

SATELLITE: USERS MANUAL - Bader et al., (1992)

SKEW-T - Hart and Korotky (1991)

STATEMENTS - Smith (2000), Tipton and Hamen (1999)

THETA E - Baker (1992)

VORTICITY & UPPER LEVEL FRONTS - Gibson (1995)

WAKE LOW - Voelker (200)

WATERSPOUT FORECASTING - Brown and Rothfuss (1998)

WATER VAPOR PLUME - Scofield and Robinson (1990), Beckman (1987)


WSR-88D: PRECIPITATION ESTIMATES - Sampson (1995)


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