

Composition Book

SBCRI

RESEARCH NOTES

80 SHEETS 10 x 7⁷/₈

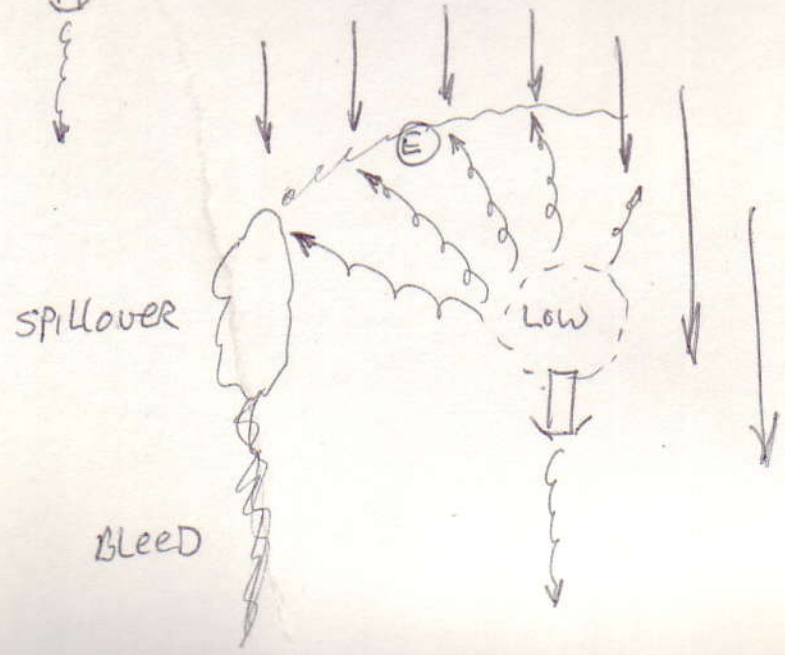
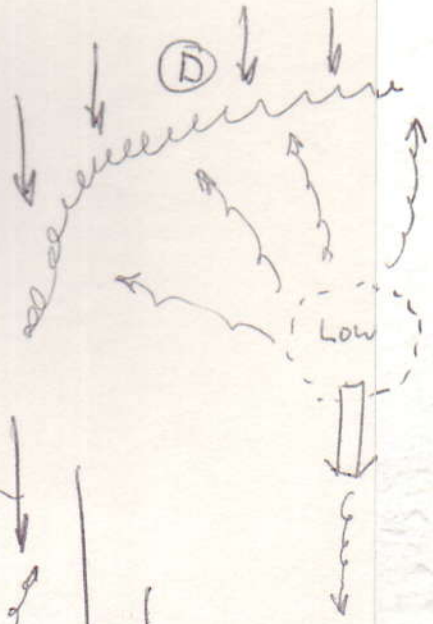
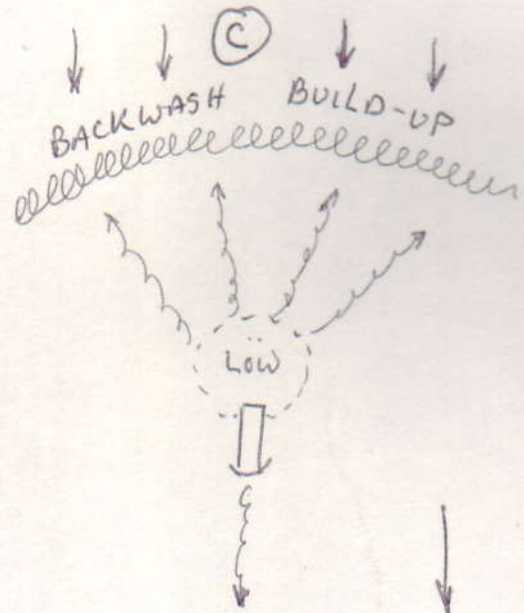
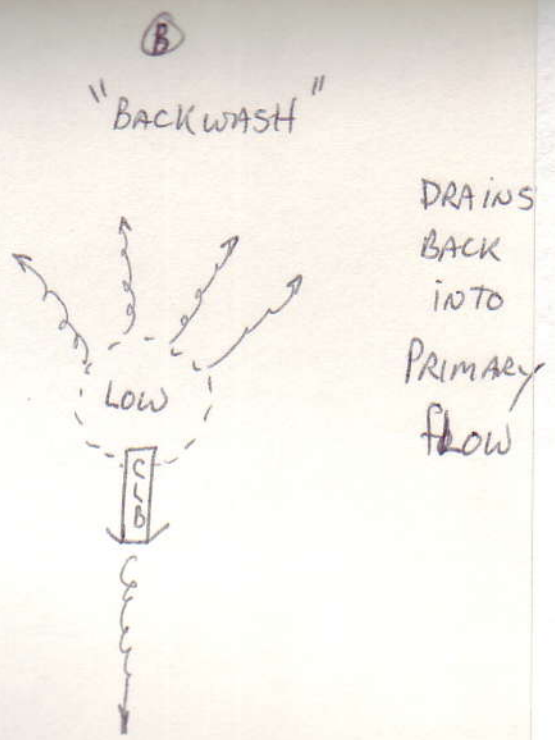
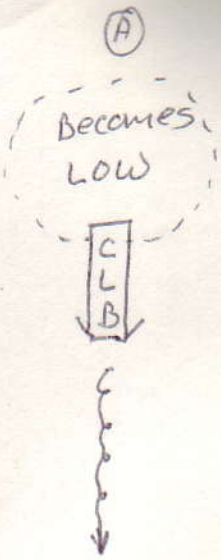
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26-252





Primary Flow

THIS Log is a WRITTEN RECORD of THE
TECHNICAL DIRECTOR of SANTA BARBARA
CLIMATE RESEARCH INSTITUTE, Peter A. LINDEMANN.

THE WEATHER MODIFICATION PROCESSES ARE
BASED ON THE 20 YEARS OF EXPERIENCE AND
EXPERTISE DEVELOPED BY TREVOR JAMES CONSTABLE.

ALL OF THE EQUIPMENT MENTIONED IN THIS LOG
ARE DEVICES THAT HAVE BEEN DEVELOPED BY
T.J.C. THESE INCLUDE — THE SPIDER UNIT
USED TO EITHER EXPAND OR CONTRACT THE
CHEMICAL ETHER IN THE ATMOSPHERE.

THE "BLUE BELLIES" (B.B's) WHICH
ARE USED TO LOWER THE ETHERIC POTENTIAL
BEHIND THE UNITS AND CAUSE AN INTERACTION
WITH THE PRIMARY ETHERIC FLOW AS ILLUSTRATED
TO THE RIGHT. THESE UNITS BECOME ACTIVE
AS THE BAROMETER DROPS BELOW 29.85 AND
BECOME INCREASINGLY MORE ACTIVE AS THE BAROMETER
CONTINUES TO DROP.

THE "MT'S" OPERATE IN A SIMILAR MANNER
EXCEPT THAT THEY ARE ALWAYS ON.

THE EFFICACY OF THESE STATIONARY DEVICES
(BB'S + MT'S) ARE BASED ON THE FOLLOWING:

THERE ARE PRIMARY FLOW PATTERNS IN THE CHEMICAL
ETHER AND THAT NATURAL INTERACTIONS FOLLOW
ANTI-THERMODYNAMIC BEHAVIORS.

FIRST ENTRIES IN THE LOG.

THIS ANTI-THERMODYNAMIC BEHAVIOR PROVIDES FOR A SPONTANEOUS MOVEMENT OF THE CHEMICAL ETHER FROM A LOW CONCENTRATION TO A HIGH CONCENTRATION. UNDERSTANDING THIS, COUPLED WITH A KNOWLEDGE OF THE PRIMARY FLOW PATTERNS LAYS A FOUNDATION FOR THE ENGINEERING OF THE WEATHER ON A REGIONAL SCALE.

THE FUNCTION OF THE BB'S IS TO ESTABLISH AN ETHERIC LOW POTENTIAL AREA BEHIND THE UNITS. (A) WHEN THE UNITS ARE POINTED IN THE DIRECTION OF A PRIMARY FLOW, THIS LOW ETHERIC POTENTIAL FEEDS ENERGY BACK TOWARDS THE PRIMARY FLOW AS A "BACKWASH" (B). AT SOME DISTANCE BACK, THESE TWO FLOWS DEVELOPE A DYNAMIC EQUILIBRIUM WHICH BECOMES A "BACKWASH BUILD-UP" OF LOCALLY HIGHER ETHERIC POTENTIAL. (C) SINCE PERFECT BALANCE IN A DYNAMIC SYSTEM IS NOT POSSIBLE, THE "BACKWASH BUILD-UP" WILL FALL OUT TO ONE SIDE OR THE OTHER (D). AS THE HIGH POTENTIAL IS RELEASED AROUND THE BLOCKING EFFECT OF THE BACKWASH, A PRIMARY AREA OF HIGHEST ACTIVITY IS CREATED AT ABOUT RIGHT ANGLES TO THE EQUIPMENT. THIS IS CALLED THE "SPILLOVER" AREA (E). THE SPILLOVER AREA CAN BE ENGINEERED TO BE ON EITHER SIDE OF THE UNITS BY AIMING THEM SLIGHTLY OUT OF THE PRIMARY FLOW TO THE SIDE DESIRED.

BY THIS PROCESS, ENHANCED RAINFALL AMOUNTS CAN BE DELIVERED TO SPECIFIC LOCATIONS WHEN CONDITIONS ARE FAVORABLE.



5" MT" BAZOOKAS ON REMOVABLE ROOF RACK

FIRST ENTRIES in THE LOG.

11-17-90

MONDAY 10:10 AM
1 PM - Left Home - Leaving SB By 1:30 PM
MILEAGE 86452.8 START - 86619.2 END

CONDITIONS - Completely overcast
FIRST RUN of completed MOBILE UNIT
5 M-T BAZOOKAS ON ROOF of CAR
SB TO SANTA MARIA AND BACK
ON US 101

CRUISING SPEED 5.5 MPH, RETURN 65 MPH
TURNED AROUND AT MAIN ST 3:06 PM
PARKED AT PAPPY'S RESTAURANT TIL.

LEAVING SM SPIDER UNIT IN BACK 3:42 PM
ARRIVE SB BACKWIDE ROAD AT 5:03 PM

NO NOTICEABLE CLOUD FORMATIONS
DUE TO OPERATION

FIRST REAL CHANCE TO RUN MOBILE
POSSIBLE LOW CUMULUS CLOUDS IN
FRONT AND TO THE LEFT of CAR AS WE
CAME INTO SANTA MARIA.

START 10:50 AM
MILEAGE 86645.0
CRUISE SPEED 45 MPH
S.B. WEST ON 101 TO GAVIOTA RESTAURANT
END 11:35 AM

NO NOTICEABLE CHANGES DUE TO MOBILE UNIT
CONDITIONS AT GAVIOTA, TOTAL OVERCAST WITH
CLOUD CEILING HIGHER THAN AT SB.

MONDAY

10:10 AM

11-19-90

~~SPIDER UNIT~~

CONDITIONS

— completely overcast

ceiling Below MT. Summit

Cold front approaching

from the north —

"Chance of showers this afternoon
and early tonight" LA Times

OPERATIONS

1) started spider unit in backyard

clockwise rotation at 5 VOLTS

2) Mobile unit on car

First real chance to run mobile
unit into an on-coming front
with the possibility of rain

START: 10:50 AM

Mileage 86645.0

CRUISE SPEED 45 MPH

S.B. West on 101 to Gaviota Rest Area

END: 11:35 AM

NO noticeable changes due to mobile unit
conditions at Gaviota, total overcast with
cloud ceiling higher than at S.B.

MONDAY 90
11-19-90

Next Leg - GAVIOTA NORTH TO SANTA MARIA
NORTH - NORTHWEST ON 101

START 11:40 AM

LOS ALAMOS - 12:12 PM

DARK SKY TO THE NORTH
CLOUDS BREAKING UP TO PATCHY IN WEST

END 12:45 PM

SANTA MARIA - DONOVAN Rd
TURN AROUND -

CONDITIONS SANTA MARIA 12:45 PM

TOTAL OVERCAST TO THE EAST
AND SOUTH

PATCHY CLOUDS TO THE NORTHWEST
AND WEST

Next Leg SANTA MARIA ~~TO~~ SOUTH EAST ON 101
TO 154 TURN-OFF.

START 1:00 PM

CRUISE SPEED 55 MPH

A FEW DROPS ON THE WINDSHIELD

AT 1:30 PM AT APPROXIMATELY
101 AND ZACA STATION Rd.

STOPPED - TURNED AROUND

WENT BACK UP Rd 1 mile -

1:36 PM PARKED WITH TUBES FACING NORTH

1:40 PM PROCEEDED BACK DOWN 101 TO 154

11-19-90

NEXT LEG

154 S.E. THROUGH
SANTA YNEZ VALLEY

START 1:48 PM

CRUISE SPEED 45

A few LARGE DROPS of RAIN on
WINDSHIELD AT 154 AND

SANTA YNEZ River Bridge 2:06 PM
RAIN covered WINDSHIELD AT 2:16 PM

A LAKE CACHUMA

TURNED BACK TOWARD Los OLIVOS 2:25 PM
AT 154 - SB - 18.45 Rd sign

RAIN Begins AT 2:29 PM
154 AT 246 AT 2:39

DRIZZLING in SANTA YNEZ 2:51 PM

Heading WEST to Los OLIVOS
on Highway

STEADY LIGHT RAIN in LOS OLIVOS 3:02 PM

PARKED with TUBES facing NORTH - NOT RAINING
3:11 PM TO 3:24 PM
TO EAT LUNCH

NO-RAIN

Heading TOWARD SB on 154 3:24 PM
154 AT 100 in SB 4:04 PM

~~Heading TOWARD SB on 154~~

RAINED AT the Summit

APPARENTLY NO RAIN in SB

69-11-11

Grounded "SPIDER" unit with waterproof Power
supply underneath, Reversible, 0-45 RPM



SPIDER UNIT in BACKYARD AT
CHINO STREET S.B. 11-90

SPIDER UNIT -

Clockwise CAUSES Compression of ETHER
Anti-clockwise CAUSES Expansion of ETHER

H-19-90

PROCEEDING EAST ON 101 4:13 PM

WENT MAIN ST VENTURA AND 101 4:45 PM

A FEW SPRINKLES ALONG THE WAY
RADIO SAID IT WAS SPRINKLING IN SB.

WEST ON 101 TOWARD SB. 4:48 PM

NOT RAINING IN VENTURA

RAINING IN CARP.

5:04 PM

CAN SEE
LOTS OF RAIN
OVER OCEAN OFF
THE COAST OF MONTECITO

OLIVEMILL RD AT 101 5:16 PM

HAS RAINED HERE BUT

IS NOT RAINING NOW

GOING NORTH TO THE TOP OF HOT SPRINGS RD.

HOT SPRINGS + MOUNTAIN 5:22 PM

LIGHT DRIZZLE TO LIGHT RAIN

WEST ON MOUNTAIN TO FOOTHILL 5:47

LIGHT RAIN TO FAIRVIEW

WEST ON FOOTHILL - CATHEDRAL OAKS

TO GLEN ANNIE AT 10 VOLT 6:08

NOT RAINING NOW

BUT HAS RAINED HERE

101 EAST TO CARRILLO + HOME

6:30 PM

TALKED TO TREVOR

SUGGESTED INCREASE THE RPM
OF THE SPIDER

INCREASED RPM AND THE

RAIN INCREASED IN INTENSITY
ABOUT 15 SECONDS LATER

10:15 PM

STILL RAINING LIGHTLY -

TURNOED SPIDER UNIT TO SLOWER SPEED

FRIDAY 11-23-90

WENT TO SAN PEDRO AND PICKED UP

7 BLUE BELLIES - DONATED BY

TREVOR.

SUNDAY 11-25-90

2:20 PM

COMPLETELY OVERCAST WITH COLD FRONT
DUE THROUGH S.B. LATER THIS EVENING
NO RAIN PREDICTED FOR S.B.

OPERATION.

- 1) SPIDER UNIT TURNED ON
CLOCKWISE AT 10 VOLTS
- 2) 4 BLUE BELLIES AT LOW ANGLE
POINTED TO THE NORTH.
- 3) (MOBILE UNIT) 5 M.T.'S POINTING
SOUTH AT ABOUT 35°

ALL UNITS IN MY BACK YARD

2:38 PM

TURNED SPIDER UNIT UP TO 13 VOLTS

8:15 PM

TURNED SPIDER UNIT OFF.

TURNED M.T.'S TO S.E.

BLUE BELLIES STILL TO THE NORTH

Monday
Sunday 11-25-90

- 9:30 PM — STARTED RAINING
9:45 PM — RESTARTED SPIDER UNIT
CLOCK-WISE AT 10 VOLTS
10:30 PM — SKI CLEAR — WINDY
TURNED OFF SPIDER
4:00 AM — Tied Down SPIDER TO PREVENT
WIND DAMAGE
— Took Down M.T.'s from
S.E. — Wind seemed to subside some.
— Blue Bellies REMAIN N.
-

in CONVERSATIONS WITH JOHN, DRIZZLE
STARTED in Montecito sometime AROUND 8:30
MPL. SAID IT HAD RAINED AT HIS APT WHEN
HE GOT HOME AT MID-NIGHT
Roger JAHUKE SAID IT RAINED in ELLWOOD

10:10 AM MONDAY 11-26-90

CONVERSATION WITH TREVOR —

- DID NOT RAIN in SAN PEDRO LAST NIGHT
— get ALL OBSERVER MESSAGES FROM SS MAUI
since OCT 1, 1990 FROM NOAA DATA BANK
— He will get us Time, LOCATION PLOTS on
his next run out.

Monday

12-10-90

10:50 Am

WITH ~~FRONTS~~ 2 COLD FRONTS Predicted
Through SANTA BARBARA in the next 4-5 days
AND LIGHT RAIN Predicted from BOTH —

AN OFF CYCLE LEFT UNIT OFF AFTER

STARTED SPIDER UNIT ROTATING CLOCKWISE
AT 5 VOLTS AND SET UP ALL 7 B.B.'s
in my BACKYARD ON A MAGNETIC NORTH HEADING.

AFTER CHECKING CAMPUS AND MAP, NORTH
HEADING FROM HERE POINTS TO BOTANIC GARDENS
AND GENERALLY EAST OF THE BURN AREA
AND IS THEREFORE CONSIDERED SAFE

STO. ANGELES L.A. TIMES WEATHER SECTION SUGGESTS

THE FRONT HAS NOT MOVED THROUGH YET



DISCUSSION WITH TREVOR 12:15 PM

STILL WORKING OUT PROCEDURES ON MAUI
WITH NEW EQUIPMENT —

NEW RAIN OPERATION STARTING 12-11-90
AT DESERT HOT SPRINGS "WATCH FOR CHANGES"

UNIT ON MAUI IN OPERATION NOW (LONG BEACH
HARBOR.) ALL THIS SHOULD ENHANCE FRONTS
COMING THROUGH THIS WEEK

NEW "HIGH VACUUM SYSTEMS" AT DESERT HOT SPRINGS
WILL BRING NEW MOBILE UNIT UP TO S.B. IN
JANUARY SOMETIME

SUGGESTED PUTTING SPIDER ON ON/OFF TIMER WITH
1 HOUR CYCLES — I DID THIS AT 10:30 PM.

10:15

SET UP MTS ON A NNE HEADING

Tues Day

12-11-90

4:00 AM

Woke up and noticed the beginning of a DRIZZLE

RAISED speed of SPIDER UNIT - WAS ON AN OFF cycle. Left unit OFF after RAISING speed setting.

5:00 AM

7:40 AM SKY WITH PATCHY CLOUDS - (FRONT HAS MOVED THROUGH ALREADY)
TURNING SPIDER UNIT BACK DOWN TO 5 VOLTS, LEAVING ON INTERMITTENT cycle.

9:20 AM L.A. Times WEATHER section suggests THE FRONT HAS NOT MOVED THROUGH YET AND IS STILL PREDICTING RAIN THIS AFTERNOON AND EVENING.

10:10 AM SPOKE WITH IVOR JOHN, HE SAYS THE CONSENSUS of LOCAL METEOROLOGISTS IS THAT THE FRONT WENT THROUGH THIS MORNING AND THAT ANOTHER WEAK FRONT IS DUE SOMETIME ON THURSDAY.

He SAYS RAY STRANGE, INDEPENDENT METEOROLOGIST IN MONTECITO, SAYS THAT THIS COULD BE A VERY DRY YEAR WITH RAIN TOTALS NEAR 9 INCHES FOR THE SEASON.

(NORMAL RAINFALL IS ABOUT 20 INCHES)

10:25

SET UP MT'S ON A NNE HEADING

Tues Day
12-11-90

Left everything as set up ALL DAY

Wednesday
12-12-90

5:00 Am

Woke up to DRIZZLING RAIN -
GROUND is wet so it HAS BEEN DRIZZLING
for A WHILE

TURNED ON SPIDER UNIT AND RAISED SPEED

3:30 PM —

ALL systems De-ACTIVATED AT Joe's Request.



SATURDAY 12-22-90

3:20 PM

4 BLUE BELLIES ON A NORTH VECTOR AND
SPIDER ~~R~~ INSTALLED AT GILDEA RESOURCE CENTER
SPIDER ROTATING CLOCKWISE AT 6 VOLTS

ANS

THURSDAY
12-27-90

3:30 PM

- INSTALLED Timer on
SPIDER UNIT AND RAISED SPEED
TO 10 VOLTS

~~Monday~~
SATURDAY
12-29-90

10 AM

INSTALLED 3 more ALCHEMIST units from
AUN JOHNSON on the WATERLINE of my
APARTMENT AT 1214 CHINO ST.

Monday
12-31-90

2:30 PM

- RESET SPIDER for Counter-
clockwise ROTATION AT 10 VOLTS
WITH ON/OFF Timer still in
the system

THURSDAY
1-3-91

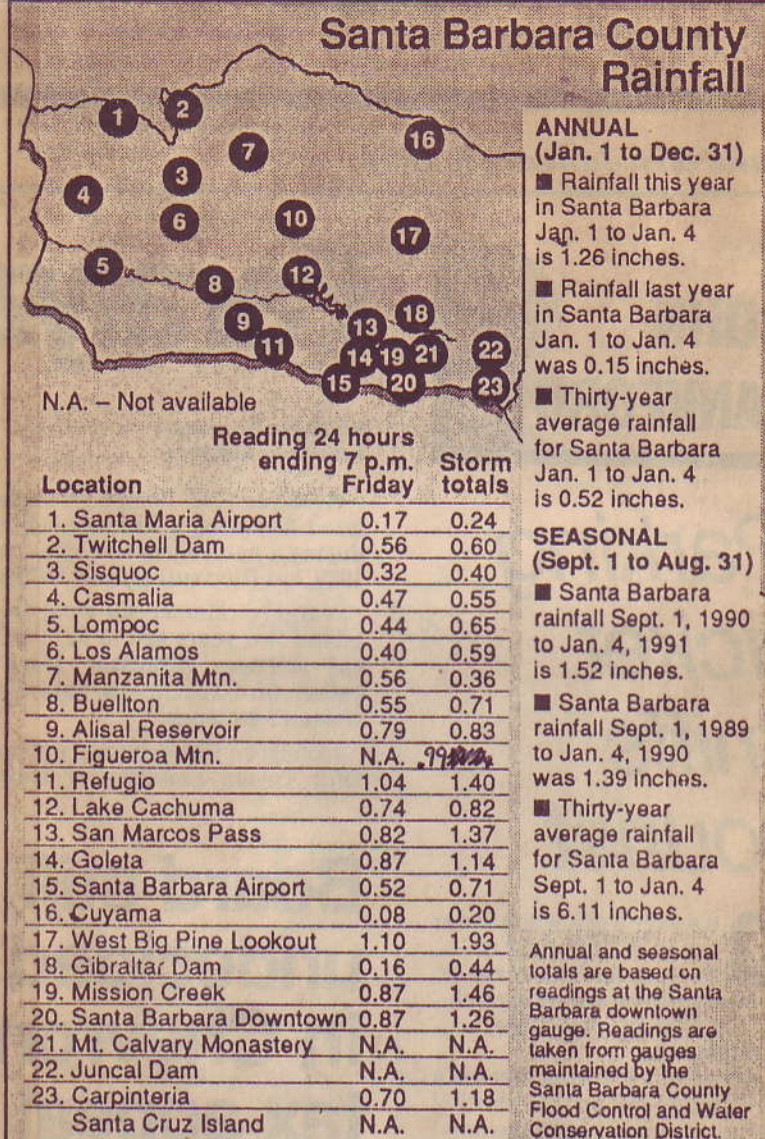
6:00 AM

- STARTED RAINING (EARLIER THAN 6AM)
LA Times says Rain Due By
THIS AFTERNOON.

8:17 AM

- RESET SPIDER for Clock-wise spin
AT 10 VOLTS WITH ON/OFF Timer
still in the system

News Press
JAN 5, 1991



Source: Accu-Weather Inc.

News-Press graphic

Tuesday HT 1-8-91

SPOKE WITH TREVOR - He's still working out procedures with his new equipment and will take 2 more round trip runs on USS MAUI - and will be finished on FEB 4TH. I suggested some tests using pressure bulbs instead of vacuum bulbs and he said he had never tried it, so that I should.

THURSDAY (CONT.)

1-3-91

THIS RAIN IS COMING FROM A PACIFIC STORM THAT IS APPROACHING SO.CAL. FROM THE SOUTH-WEST.

THE NORTH TO SOUTH SEASONAL FLOW HAS NOT ESTABLISHED ITSELF YET THIS SEASON, giving us THE DRIEST year yet in 5 consecutive DRY SEASONS.

FRIDAY

1-4-91

6:40 PM

REVERSED THE SPIDER UNIT FOR INTERMITTANT COUNTER-CLOCKWISE ROTATION

- HOPEFULLY TO STRENGTHEN A SECOND FRONT THAT IS DUE TO ARRIVE SATURDAY NIGHT.

- THIS STORM DROPPED ABOUT 1.2 INCHES IN THE YARD.

TUESDAY

~~1-8-91~~
1-8-91

11:15 AM

SMALL FRONT DUE ON SAT (5TH) DID NOT PRODUCE ANYTHING IN SB.

Tues
~~Weds~~. (CONT.)
1-8-91

11:30 AM

INSTALLED MTs facing EAST in a
DAMMING operation TO PROMOTE more RAIN in
Goleta TO THE West

New front Due in THIS Afternoon or
THIS evening coming from THE West
RAIN Showers Predicted

SPIDER SET FOR INTERMITTANT CLOCKWISE [ICW]
AT 6 VOLTS

6:20 PM KEYT TV WEATHER MAN (PHIL MANN) SAYS
"RAIN WILL REACH SB BY DAWN TOMORROW;
COULD GET $\frac{1}{4}$ INCH"

~~Weds~~ Wed.

1-9-91

7:15 AM

Woke up TO RAIN, GROUND WET, WITH
PUDDLES - [PROBABLY STARTED AROUND DAWN 5 AM]

7:50 AM

INCREASED SPEED ON SPIDER TO 12 VOLTS.

[HEARD ON RADIO NEWS - RAIN IS EXPECTED TO
CONTINUE UNTIL 3 PM, EXPECTING UP TO $\frac{1}{2}$ "]

4:30 PM

[RAIN STOPPED BY 1:30 PM]

RAIN HAS STOPPED, WE GOT

RESET SPIDER ICCLW AT 6 VOLTS

.50 inches

KEYT
WEATHER
REPORT

JAN 10, 1991

Santa Barbara News-Press,

Santa Barbara County Rainfall



N.A. — Not available

Reading 24 hours
ending at 7 p.m.
Wednesday

Location	
1. Santa Maria Airport	0.49
2. Twitchell Dam	0.51
3. Sisquoc	0.44
4. Casmalia	0.59
5. Lompoc	0.48
6. Los Alamos	0.39
7. Manzanita Mtn.	0.43
8. Buellton	0.31
9. Alisal Reservoir	0.32
10. Figueroa Mtn.	0.71
11. Refugio	0.79
12. Lake Cachuma	0.28
13. San Marcos Pass	0.63
14. Goleta	0.19
15. Santa Barbara Airport	N.A.
16. Cuyama	0.36
17. West Big Pine Lookout	0.36
18. Gibraltar Dam	0.04
19. Mission Creek	0.39
20. Santa Barbara Downtown	0.35
21. Mt. Calvary Monastery	N.A.
22. Juncal Dam	N.A.
23. Carpinteria	0.16
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to Jan. 9
is 1.68 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to Jan. 9
was 0.10 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to Jan. 9
is 1.18 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990,
to Jan. 9, 1991,
is 1.93 inches.

■ Santa Barbara
rainfall Sept. 1, 1989,
to Jan. 9, 1990,
was 1.39 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to Jan. 9
is 6.77 inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

THURSDAY
1-10-91

9:30 AM

De-Activated MT's
Reset SPIDER ICCW AT 12 VOLTS

SATELITE PHOTOS SHOW A LARGE MOIST CLOUD MASS SOUTH AND WEST OF CALIFORNIA extending ALL THE WAY TO HAWAII - HOW CAN I DRAW THIS UP TOWARD S.B. AND SO. CAL.?

WITH THIS LAST RAIN, SEASONAL TOTALS FOR THIS RAINY SEASON NOW SURPASS LAST YEAR FOR THIS TIME ACCORDING TO S.B. NEWS PRESS.

FRIDAY
1-11-91

11:00 AM

Reset SPIDER CCW AT 4 VOLTS
Removed timer and set for slowest
CCW REVOLUTIONS POSSIBLE $1\frac{1}{2}$ RPM

2:00 PM

ACCORDING TO CNN SATELITE PHOTOS
moisture from SW HAS REACHED So. CAL.
THERE ARE CLOUDS IN SKY OVER SB.

MONDAY
1-14-91

7:45 AM

Disconnected electricity
SPIDER off.

clear

IP-01-1

MA 03.P

Blue Bellies pointing north
HELD RAIN OUT OF SB from System
BROUGHT ASHORE By TREVER (USS MAUI)

CLOUDS

N



CLOUDS

COAST

5 miles

OCEAN

DRAWING of SKY AT
ABOUT 10 AM 1-21-91
THE DAY of BRUCE'S move.

RAIN



MONDAY
1-21-91

4:30 Am

NOTICED SKY WAS PARTLY CLOUDY
WITH WIND PICKING UP.

5:30 Am

GOT A CALL FROM TREVOR "GET
CRACKING LAD" HE WAS ON AN APPROACH
TO LONG BEACH HARBOR TOWING IN 20 MILES
OF RAIN. HE NOTICED A LOT OF LIGHTNING
AROUND OXNARD AND FIGURED THERE WAS SOME
FIXED UNITS OPERATING. IF THE SPIDER WAS
OPERATING HE WOULD HAVE DIRECTED THE STORM
OUR WAY. I TOLD HIM ALL WE HAVE GOING
NOW ARE 4 BB'S POINTED NORTH DUE TO
ELECTRICAL PROBLEMS AT THE INSTALLATION.
HE SAID POINT FERMIN WAS "COVERED"

I PUT OUT MY RAIN GAUGE AND CALLED
10TH TO DO THE SAME - AS RAIN HAD STARTED
AT 6:30 AM IT IS STILL RAINING OFF AND ON
~~AND~~ WITH GUSTY WINDS.

TUESDAY
1-29-91

11:00 PM

TREVOR CALLED TO TELL ME THAT DESERT
HOT SPRINGS TEAM HAD HIT UPON A SIGNIFICANT
VARIATION AND THAT A LOW WAS FORMING NEAR THE
BAY AREA AND THAT A SERIES OF LOWS WOULD
FOLLOW AND POSSIBLY HELP ME DOWN HERE.

(GULF OF
ALASKA)?

Tues 1-29-91

He instructed me to TURN THE SPIDER ON
CLOCKWISE AT 15 RPM in an ASSISTING move.

He WAS JUST Pulling out of Honolulu as HE
CALLED.

SATURDAY
2-2-91

10: AM

Reset 4 MT UNITS AT 122° off
MAGNETIC NORTH (S-E)

TURNED ON SPIDER AT CW AT 15RPM
AS PER TREVOR'S INSTRUCTIONS 10:16 AM

STORM FRONT coming in from NORTH-WEST
is expected TO DISSIPATE before it REACHES
S.B.

11:30 AM

LIGHT SPRINKLE ~~starting~~ Here AND in
MONTICITO AT 104US

NO RAIN Predicted in SB in LATimes

12: NOON

RAIN Begins AND THEN LIGHTENS AND STOPS
within 6 minutes.

WEDNESDAY
2-6-91

12:47 PM

Steve AND I finished installing BARRIED power cord
TO SPIDER UNIT - Set SPIDER ICCW AT 15RPM

1P-5-1 2007

He instructed me to turn the spider on
clockwise at 12 PM in an assisting wave.
He was just pulling out of Honolulu as he
called.

SATURDAY

1P-5-1

10:41

Reset 11 MT units at 12:00 off

(3-2) ITAN SITONAM

Turned on spider at CW at 12 PM

as per previous instructions 10:15 AM

System fault coming in from North-West

is expected to dissipate before it reaches

⊗ This setting is for ~~breaking~~ breaking the
High Pressure system in So. Cal by
EXPANDING IT FURTHER on an intermittent
schedule

⊕ Source: Channel 12 KCOY WEATHERMAN
6:00 news 2-26-91

SATURDAY

2-9-91

1:00 PM

Re-set SPIDER ICW AT 15 RPM

4 BLUE BELLIES SET AT 45° off M.N.

5 MT'S SET AT 45° off M.N. (NORTHEAST)

This set up is according to instructions from Trevor.

FRIDAY

2-15-91

5:15 PM

Receives fax from TREVOR TODAY AND SPOKE TO HIM OVER THE PHONE

⊗ Re-set SPIDER ICCW AT 15 RPM

Re-set 4 BB'S AT 65°

5 MT'S AT 65°

These settings in cooperation with his other operations south of here to try to bring some rain to So. CAL this weekend from S.W.

(NO RAIN fell.)

TUESDAY

2-26-91

6:15 PM

TALKED TO TREVOR —

⊕ 3 Low Pressure fronts approaching CAL-COAST
Prediction of a few 100ths of rain tonight
AND AS MUCH AS 1 inch or more tomorrow afternoon.
Reset SPIDER ICW AT 15 RPM

Wednesday
2-27-91

7:12 Am

Light Rain Begins

10:00 Am

(*) Reset SPIDER CW @ 30 RPM

Reset S MT's @ 85°

RAINING STEADILY

11:00 Am

RAINING STEADILY

RAIN AS of 11 Am .15 inches AT CHINO

1:00 PM

RAINING STEADILY

RAIN AS of 1 PM .32 inches AT CHINO

2:30 PM

RAIN AS of 2:20 PM .45 inches AT CHINO

4:00 PM

RAIN AS of 4:00 PM .71 inches AT CHINO

7:00 PM

RAIN AS of 7:00 PM 1.3 inches AT CHINO

9:10 PM

RAIN AS of 9:10 PM 1.45 inches AT CHINO

STILL RAINING off AND ON.

THURSDAY
2-28-91

3:10 AM

RAIN HAS STOPPED

RAIN TOTAL AS of 3:10 AM 1.6 inches AT CHINO

Wednesday
5-55-51

7:15 AM

Light rain begins

10:00 AM

Rest 2 miles to 28

Rain steadily

RAIN TOTALS from 7 AM Wed → 4 PM Thurs

CHINO 3.1 inches

MPL 3.4 inches

TORO CYN 4.7 inches

GIBRALTER DAM 6.73 inches

HILLS BEHIND OJAI 6-8 inches

5:30 PM

Rain as of 5:30 PM

7:00 PM

Rain as of 7:00 PM

7:00 PM

Rain as of 7:00 PM

9:10 PM

Rain as of 9:10 PM

Still raining off and on

THURSDAY
5-58-51

3:10 AM

Rain total as of 3:10 AM
RAIN HAS STOPPED

THURSDAY
2-28-91

4:20 AM

RAIN STARTED AGAIN ABOUT 4:00 AM AND HAS INCREASED TO A STEADY, FAIRLY HEAVY RAIN

7:15 AM

NOT RAINING AT THIS MOMENT, BUT RAIN HAS BEEN INTERMITTENT AND HEAVY

RAIN AS OF 7:15 AM 2.5 INCHES (24 HOUR TOTAL)

9:00 AM

RAIN CONTINUES TO BE INTERMITTENT

RAIN AS OF 9:00 AM 3.0 INCHES AT CHINO

12:40 PM

RAIN ON AND OFF

RAIN AS OF 12:40 PM 3.1 INCHES AT CHINO

9:45 AM

WENT TO IN INSTALLATION - FOUND SPIDER UNPLUGGED - TURNED BACK ON

RESET SPIDER CW @ 15 RPM

4:15 PM

RAIN HAS STOPPED - NO RAIN SINCE 1 PM STILL OVERCAST WITH MORE RAIN FORECAST FOR TONIGHT AND TOMORROW.

3.1 INCHES IN DOWNTOWN SB. IS WAY ABOVE THAT PREDICTED

3.4 INCHES AT VIA LUCERO (M.L.)

4.7 INCHES AT TORO CANYON (R.F.)

5:00 PM

RESET SPIDER CW @ 20 RPM

4 BB'S @ 80°

THURSDAY
P-85-5

4:50 AM

RAIN STARTED AGAIN ABOUT 7:00 AM AND
HAS INCREASED TO A STEADY, FAIRLY
HEAVY RAIN

5:12 AM

KEY TOTALS AS OF 6:20 AM 3-1-91

Downtown SB	5.16
GIBRALTER DAM	9.1
Goleta	3.2

6:00 AM

12:40 PM

STORM TOTALS (see next page)

CHINO	5.15
M.P.L.	4.85
Toro Canyon	7.2

1:12 PM

4:12 PM

RAIN HAS STOPPED - NO RAIN SINCE 1 PM
STILL OVERCAST WITH MORE RAIN FORECAST
FOR TONIGHT AND TOMORROW.

3.1 inches in Downtown SB is way above
that predicted

3.4 inches AT VIA LUCERO (M.F.)
4.7 inches AT TORO CANYON (R.F.)

2:00 PM

Reset spinner CW @ 20 RPM
4:00 @ 80°

THURSDAY
2-28-91

1PP1 1 AM

229942694 A2

SOURCE

KeyT News

6:30 PM

THURSDAY

6-8 inches in mountains Belting VENTURA.

PHIL MANN SAYS:

DATO SB	3.23	VENTURA	2.2
GOLETA	2.00		
GIBRALTER DAM	6.73		

WATERSPOUT off LA HOYA
UP TO 1 INCH MORE TONIGHT
SCATTERED SHOWERS FRIDAY

8:15 PM

RAIN HAS STARTED AGAIN

FRIDAY
3-1-91

3:30 AM

RAINING STEADILY

RAIN SINCE 8PM THURS, 1.78 INCHES AT CHINO

8:00 AM

RAIN HAS STOPPED

RAIN AS OF 8 AM 1.9 INCHES AT CHINO

RAIN AS OF 8 AM 1.6 INCHES AT STEVE'S

2.5 INCHES AT TORO CANYON

2.1 INCHES AT CEC

RESET SPIDER FOR ICW @ 22 RPM

RESET 5 MT'S @ 80°

RAIN CONTINUES TO BE INTERMITTENT

RAIN AS OF NOON 1.45 INCHES AT MPL

1:30 PM

RAIN AS OF 1:30 2.05 INCHES AT CHINO

Santa Barbara County Rainfall



N.A. - Not available

Location	Reading 24 hours ending 7 p.m. Friday	Storm totals
1. Santa Maria Airport	0.08	1.07
2. Twitchell Dam	0.07	0.55
3. Sisquoc	0.00	0.52
4. Casmalia	0.63	2.46
5. Lompoc	0.00	2.01
6. Los Alamos	1.14	3.03
7. Manzanita Mtn.	1.45	2.86
8. Buellton	1.32	3.37
9. Alisal Reservoir	3.98	6.89
10. Figueroa Mtn.	1.38	3.88
11. Refugio	4.17	7.13
12. Lake Cachuma	2.59	5.82
13. San Marcos Pass	3.17	7.96
14. Goleta	0.92	3.76
15. Santa Barbara Airport	0.34	1.43
16. Cuyama	N.A.	1.49
17. West Big Pine Lookout	1.43	5.94
18. Gibraltar Dam	3.19	10.08
19. Mission Creek	2.01	5.75
20. Santa Barbara Downtown	3.19	5.28
21. Mt. Calvary Monastery	N.A.	N.A.
22. Juncal Dam	N.A.	N.A.
23. Carpinteria	1.70	4.61
Santa Cruz Island	N.A.	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to March 1
is 6.96 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to March 1
was 4.70 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to March 1
is 7.81 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990,
to March 1, 1991,
is 7.21 inches.

■ Santa Barbara
rainfall Sept. 1, 1989,
to March 1, 1990,
was 6.04 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to March 1
is 13.40 inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

FRIDAY
3-1-91

2:15 PM

SPOKE WITH TREVOR ON THE PHONE
HE HAS INSTALLATION ON OAHU DRAWING
CONTINUOUS WESTERLY WINDS.

THIS IS DECOMPRESSING THE WHOLE
NORTH EASTERN PACIFIC OCEAN AREA
WHICH IN TURN IS PROVIDING A CONTINUOUS
SERIES OF LOW PRESSURE TROUGHTS
TO FORM - THIS IS THE BASIS FOR THE
WEATHER FORMATION WE ARE NOW IN.

2:30 PM

Reset 2 BB's @ 70°

Reset 2 BB's @ 65°

5 MT's @ 80° (PREVIOUS SETTING)

SPIDER ICW @ 22 RPM

TREVOR ALSO SAID THAT THE USS MAUI WOULD
BE COMING INTO LONG BEACH HARBOR THIS
WEEKEND WITH A SPIDER UNIT OPERATING ON BOARD.

~~THIS SHIP PRODUCES HEAVY ANTARCTIC ACID
WITH THUNDER AND LIGHTNING PRODUCED AS THE
SHIP COMES UP AGAINST THE CHARTERED
POSITIONS AT S.B.~~

NO PARTICULAR ASSIST IS EXPECTED AS SHE COMES
BY AT ABOUT NOON ON SUNDAY. @ 17 KNOTS

6:20 PM

PHIL MANN SAYS "RAIN IS ABOUT OVER
CLEAR THROUGH MONDAY WITH A SLIGHT CHANCE
OF A FEW SPRINKLES

Santa Barbara News-Press, Tuesday, March 5, 1991

Santa Barbara County Rainfall



N.A. - Not available

Reading 24 hours
ending at 7 p.m.
Monday

Location	
1. Santa Maria Airport	0.76
2. Twitchell Dam	1.53
3. Sisquoc	1.03
4. Casmalia	0.91
5. Lompoc	0.54
6. Los Alamos	0.63
7. Manzanita Mtn.	1.18
8. Buellton	0.51
9. Alisal Reservoir	0.59
10. Figueroa Mtn.	1.10
11. Refugio	0.63
12. Lake Cachuma	0.52
13. San Marcos Pass	0.67
14. Goleta	0.47
15. Santa Barbara Airport	0.27
16. Cuyama	2.12
17. West Big Pine Lookout	2.01
18. Gibraltar Dam	0.59
19. Mission Creek	0.67
20. Santa Barbara Downtown	0.47
21. Mt. Calvary Monastery	N.A.
22. Juncal Dam	N.A.
23. Carpinteria	0.47
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year in Santa Barbara Jan. 1 to March 4 is 7.43 inches.

■ Rainfall last year in Santa Barbara Jan. 1 to March 4 was 4.70 inches.

■ Thirty-year average rainfall for Santa Barbara Jan. 1 to March 4 is 8.19 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara rainfall Sept. 1, 1990 to March 4, 1991, is 7.68 inches.

■ Santa Barbara rainfall Sept. 1, 1989 to March 4, 1990, was 6.04 inches.

■ Thirty-year average rainfall for Santa Barbara Sept. 1 to March 4 is 13.78 inches.

Annual and seasonal totals are based on readings at the Santa Barbara downtown gauge. Readings are taken from gauges maintained by the Santa Barbara County Flood Control and Water Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

SATURDAY
3-2-91

SUNDAY
3-3-91

10:00 AM

STOPPED SPIDER UNIT

4:30 PM

RESTARTED SPIDER UNIT 1CW 15 RPM

MONDAY
3-4-91

11:00 AM

RAIN BEGINS

RAIN CONTINUES ON/OFF ALL DAY

6:40 PM

RAIN INTERMITTENT

8:00 PM

RESET SPIDER CW @ 22 RPM

RAIN @ CHINO .46 inches

CEC .50 inches

MPL'S .40 inches

JOHN'S .55 inches

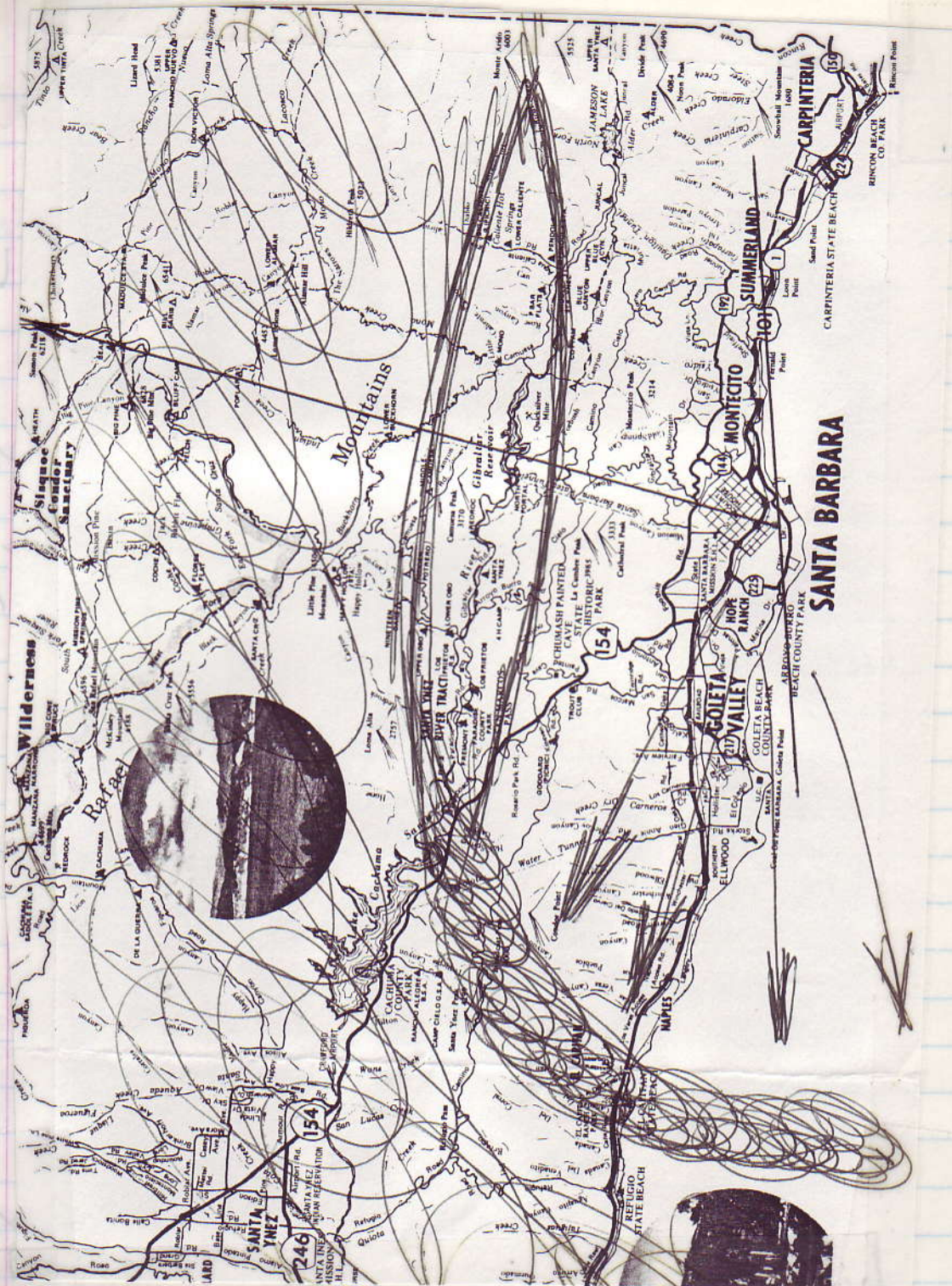
STEVES .45 inches

TUESDAY
3-5-91

10:30 AM

NO RAIN SINCE LAST NIGHT

RESET SPIDER 1CW @ 15 RPM



PATTERN of ACTION By BB's AND RAINFALL

Wednesday
3-6-91

10:45 AM

De-activated entire operation
TURNED off SPIDER
POINTED ALL MTS + BB's AT GROUND

ALL THIS ACCORDING TO REQUEST FROM
TREVOR IN CONVERSATION THIS MORNING

2 REASONS —

- 1) NO REASON TO CONTINUE TO MAKE LARGE
AMOUNTS OF RAIN FOR FREE —
THIS ONLY UNDERCUTS THE BUSINESS
OPPORTUNITY WE ARE WORKING TO CREATE.
- 2) NO FEDERAL FILING OF A LARGE,
SUCCESSFUL, 4 STATION OPERATION

TREVOR IS BACK IN SO. CAL. NOW. HE
WILL LEAVE TO GO BACK TO HAWAII ON MAR 26.

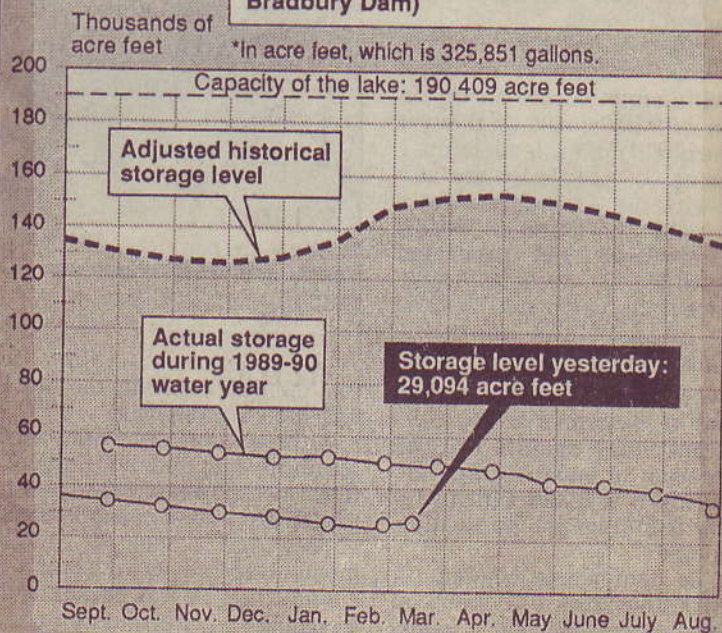
SUNDAY
3-10-91

APPROXIMATELY .05 INCHES OF RAIN FELL
IN S.B. BETWEEN 6 PM - 8 PM

Lake Cachuma storage levels

This is a weekly chart

	Last week	Previous week	Change
Storage* (on Saturday)	29,085	28,598	+ 487
Percent of capacity	15.2	15.0	+ 0.2
Usage* (for week)	0.1	171	- 170.9
Evaporation* (for week)	45.4	45.5	- 0.1
Rainfall in inches (for week, at Bradbury Dam)	0.58	6.25	- 5.67



Source: Santa Barbara County Water Agency and U.S. Bureau of Reclamation

Process of Action by ADIS and Rainfall

1P-41-E

22997-26098

434-844

Wednesday

3-13-91

8:11 AM

Woke up to RAIN, LIGHT RAIN —
WEATHER MAP SUGGESTS THAT THE NORMAL
SEASONAL STORM TRACK FROM THE GULF OF ALASKA
SOUTH TO SO. CALIFORNIA HAS ESTABLISHED
FOR THE FIRST TIME THIS SEASON AND THAT
A SERIES OF WEAK STORMS ARE NOW LIVING
UP TO GIVE US RAIN SEVERAL TIMES THIS WEEK.

NO SBCCI OPERATION WILL BE MOUNTED TO ASSIST,
TODAY'S RAIN

TREVOR CALLED — HE SAID THAT EXPERIMENTS
WITH HIS NEW MARK IV SPIDER CAPABLE OF
45 RPM ARE PROVING VERY SIGNIFICANT.
NO DIFFINATIVE WORD ON "BIG DEALS" YET.
HE WILL TRY TO GET ME A BAROMETER

⊗ { HE MENTIONED THAT PRESSURES BELOW 29.92
ARE CONDUCTIVE TO FURTHER CONTRACTIONS USING
THE SPIDER UNITS.

HE ALSO SAID THAT HE WOULD BE BACK IN HAWAII
ON THE 26TH AND THAT HE WOULD SET UP ANOTHER
"PINEAPPLE EXPRESS" AT THAT TIME — THIS
REFERS TO ANOTHER INFUSION OF WARM, MOIST
AIR FROM THE SOUTH WEST.

I TOLD TREVOR THAT I WOULD CHANGE OUT
THE DRIVE MOTOR ON THE SPIDER UNIT AND BE
RUNNING TO ASSIST BY THEN, AND TO KEEP
ME ADVISED.

Santa Barbara County Rainfall



N.A. - Not available

Reading 24 hours
ending at 7 p.m.
Wednesday

Location	
1. Santa Maria Airport	0.41
2. Twitchell Dam	0.39
3. Sisquoc	0.36
4. Casmalia	0.47
5. Lompoc	0.40
6. Los Alamos	0.39
7. Manzanita Mtn.	0.39
8. Buellton	0.39
9. Alisal Reservoir	0.28
10. Figueroa Mtn.	0.31
11. Refugio	0.35
12. Lake Cachuma	0.28
13. San Marcos Pass	0.39
14. Goleta	0.20
15. Santa Barbara Airport	0.14
16. Cuyama	0.16
17. West Big Pine Lookout	0.20
18. Gibraltar Dam	0.27
19. Mission Creek	0.36
20. Santa Barbara Downtown	0.16
21. Mt. Calvary Monastery	N.A.
22. Juncal Dam	N.A.
23. Carpinteria	0.23
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year in Santa Barbara Jan. 1 to March 13 is 7.75 inches.

■ Rainfall last year in Santa Barbara Jan. 1 to March 13 was 4.70 inches.

■ Thirty-year average rainfall for Santa Barbara Jan. 1 to March 13 is 9.03 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara rainfall Sept. 1, 1990 to March 13, 1991, is 8.00 inches.

■ Santa Barbara rainfall Sept. 1, 1989 to March 13, 1990, was 6.04 inches.

■ Thirty-year average rainfall for Santa Barbara Sept. 1 to March 13 is 14.62 inches.

Annual and seasonal totals are based on readings at the Santa Barbara downtown gauge. Readings are taken from gauges maintained by the Santa Barbara County Flood Control and Water Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

WEDNESDAY

3-13-91

12:20 PM

Light Rain CONTINUES INTERMITTENTLY

6:00 PM

RAIN ENDED BY 1 PM

RAIN TOTAL AT CHINO .16 inches

MORE RAIN PREDICTED FOR TOMORROW ON CNN.



NEWS item on KEYT 6 o'clock NEWS

LAKE CACHUMA is RISING, FIRST RUN-OFF
in some RIVERS in 5 YEARS

BARO 29.90 AND DROPPING
KEYT - RAIN ON FRIDAY AND BIG RAIN
ON SUNDAY

THURSDAY

3-14-91

4:00 PM

MOTOR CHANGED - SPIDER SET 1CCW 24 RPM
5 MT's @ 105°

TREVAR SENT ME A BAROMETER [set 29.86 @ 6 PM]

KEYT - RAIN ON FRIDAY AND BIG RAIN ON
SUNDAY AND MONDAY.

FRIDAY
3-15-91

7:45 AM

Clear over Mountains - Clouds over
Ocean -

Reset Spider CW @ 27 RPM

Reset 5 mTs @ 65°

9:00 AM

Clouds over mountains - Clear over ocean.

11:30 AM

Rain Starts

12:45 PM

BARO

Rain Has Stopped - .02 inches @ Chino

4:30 PM

Reset Spider CW @ 15 RPM

Rain AT CEC .03 inches

Barometer 29.80

SATURDAY
3-16-91

8:45 AM

Turned Spider off

Barometer 29.95

5:40 PM

Re set-up 4 BB's @ 65°

(same) 5 mTs @ 65°

Barometer 29.97

Rain continues - Spider CW @ 28 RPM
Rain as of now 2.70 inches AT CEC

MARCH 18, 1991

Santa Barbara County Rainfall



N.A. - Not available

Reading 24 hours
ending at 8 p.m.
Sunday

Location

1. Santa Maria Airport	1.28
2. Twitchell Dam	N.A.
3. Sisquoc	0.78
4. Casmalia	1.67
5. Lompoc	2.24
6. Los Alamos	1.06
7. Manzanita Mtn.	0.63
8. Buellton	1.67
9. Alisal Reservoir	2.84
10. Figueroa Mtn.	1.46
11. Refugio	1.77
12. Lake Cachuma	2.37
13. San Marcos Pass	1.18
14. Goleta	1.23
15. Santa Barbara Airport	0.93
16. Cuyama	0.00
17. West Big Pine Lookout	0.00
18. Gibraltar Dam	2.48
19. Mission Creek	0.67
20. Santa Barbara Downtown	1.18
21. Mt. Calvary Monastery	N.A.
22. Juncal Dam	N.A.
23. Carpinteria	0.91
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to March 17
is 8.81 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to March 17
was 4.70 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to March 17
is 9.41 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990
to March 17, 1991,
is 9.06 inches.

■ Santa Barbara
rainfall Sept. 1, 1989
to March 17, 1990,
was 6.04 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to March 17
is 15.00 inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.

SUNDAY
3-17-91

1 Pm

STARTED SPIDER @ 25 RPM CW
RAIN WAS LIGHT AND SPORATIC

4:30 Pm

CNN RADAR SHOWS BULK OF THE SOUTH END
OF THE STORM ABOUT TO ENTER THIS AREA.

5:40 Pm

RAINING OFF AND ON
RAIN AS OF NOW @ CHINO .22 inches

8:25 Pm

RAIN AS OF NOW .71 inches @ CHINO

9:00 Pm

BAROMETER 29.93
RAIN CONTINUING, FAIRLY HARD AT TIMES

MONDAY
3-18-91

7:00 Am

RAIN CONTINUES
RAIN AS OF NOW 2.18ⁱⁿ inches AT CHINO
BAROMETER 29.89

10:20 Am

RAIN CONTINUES
RAIN AS OF NOW 2.75 inches AT CHINO
BAROMETER 29.88

11:20 Am

RAIN CONTINUES — SPIDER CW @ 28 RPM
RAIN AS OF NOW 2.90 inches AT CEC

SANTA BARBARA News-Press

MARCH 20, 1990

Santa Barbara County Rainfall



N.A. - Not available

Location	Reading 24 hours ending 10 p.m. Tuesday	Storm totals
1. Santa Maria Airport	0.49	4.82
2. Twitchell Dam	N.A.	N.A.
3. Sisquoc	0.32	4.29
4. Casmalia	0.19	4.70
5. Lompoc	0.20	7.31
6. Los Alamos	0.40	5.12
7. Manzanita Mtn.	0.67	4.41
8. Buellton	0.31	6.36
9. Alisal Reservoir	0.83	11.78
10. Figueroa Mtn.	0.82	6.34
11. Refugio	0.87	8.19
12. Lake Cachuma	0.87	8.95
13. San Marcos Pass	1.10	8.31
14. Goleta	0.55	5.36
15. Santa Barbara Airport	0.67	6.55
16. Cuyama	0.36	3.43
17. West Big Pine Lookout	N.A.	N.A.
18. Gibraltar Dam	0.86	11.10
19. Mission Creek	0.51	4.60
20. Santa Barbara Downtown	0.63	6.11
21. Mt. Calvary Monastery	1.42	7.06
22. Juncal Dam	N.A.	N.A.
23. Carpinteria	0.98	6.93
Santa Cruz Island	N.A.	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year in Santa Barbara Jan. 1 to March 19 is 13.34 inches.

■ Rainfall last year in Santa Barbara Jan. 1 to March 19 was 4.70 inches.

■ Thirty-year average rainfall for Santa Barbara Jan. 1 to March 19 is 9.60 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara rainfall Sept. 1, 1990, to March 19, 1991, is 13.59 inches.

■ Santa Barbara rainfall Sept. 1, 1989, to March 19, 1990, was 6.04 inches.

■ Thirty-year average rainfall for Santa Barbara Sept. 1 to March 19 is 15.19 inches.

Annual and seasonal totals are based on readings at the Santa Barbara downtown gauge. Readings are taken from gauges maintained by the Santa Barbara County Flood Control and Water Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

1P-PI-8

RESEARCH NOTE 2

MONDAY

3-18-91

11:52 AM

CNN WEATHER REPORT AND COLOR RADAR
SHOW RAIN FOCUSED PRIMARILY IN
SANTA BARBARA COUNTY WITH HEAVIEST RAIN
BEHIND THE MOUNTAINS IN SANTA YNEZ
RIVER BASIN (seeding?)

12:12 PM

RAIN CONTINUES

RAIN AS OF NOW 3.1 INCHES AT CHINO

1:10 PM

RAIN CONTINUES

RAIN AS OF NOW 3.3 INCHES AT CHINO

BAROMETER 29.89

2:50 PM

RAIN AS OF NOW 6.3 INCHES AT TORO CANYON

4:00 PM

RAIN CONTINUES

RAIN AS OF NOW 3.6 INCHES AT CHINO

BAROMETER 29.71 AND FALLING

4:30 PM

RAIN AS OF NOW 3.9 INCHES AT MPL'S

7:15 PM

RAIN CONTINUES

RAIN AS OF NOW 4.2 INCHES AT CHINO

4.25 INCHES AT CEC

7:30 PM

BAROMETER 29.63 AND FALLING

RESEARCH NOTES

3-19-91

operation: MINI-PHOENIX

EXPERIMENTS over the LAST 2 1/2 MONTHS HAVE repeatedly verified Trevor's Predictions of How the STATIONARY UNITS (MT's + BB's) INTERACT with on-coming storm systems

THE STORM BROUGHT ASHORE BY THE USS MAUI in early hours of JANUARY 21ST WAS BASICALLY HELD outside of SB. AREA BY THE BB's POINTING NORTH. THIS clearly DEMONSTRATED THE "DAMMING" ACTION of these UNITS AND THE GENERAL RANGE of the effects.

THE set up of SPIDER unit AND MT's + BB's WAS BASICALLY THE SAME FOR THE STORMS THAT ended 3-1-91 AND 3-18-91. THE SPIDER unit WAS set for HIGH SPEED CLOCKWISE ROTATIONS TO PRODUCE A "CONTRACTING FORCE" FOR LOCALLY HIGHER RAINFALL FOR DOWNTOWN S.B. AS THE PRIMARY TARGET AREA.

THE STATIONARY UNITS (MT's + BB's) set for ABOUT 65° WERE ORIENTED TO "BLOCK" TO THE WEST of DOWNTOWN SB AND "SPILL-OVER" NORTH of DOWNTOWN SB. THIS CREATED TARGET AREAS FOR HIGH RAINFALL in THE Refugio - ALISAC Reservoir, LAKE CACTHUMA, TO GIBRALTAR DAM. GIBRALTAR DAM is in THE "SPILL-OVER" AREA AND CONTINUES TO BE THE PRIME TARGET AREA FOR THE STATIONARY UNITS POSITIONED where they ARE in DOWNTOWN SB. AT THE Gildea Resource Center PROPERTY.

over →

MONDAY
3-18-91

9:20 PM

RAIN AS OF NOW 5.0 inches AT STEVES

11:20 PM

RAIN AS OF NOW 4.98 inches AT CHINO
Barometer 29.59

(*) TRAVOR CALLED - sending ANOTHER "Pineapple express" by WKND.

TUESDAY
3-19-91

6:00 AM

RAIN HAS STOPPED

TURNED SPIDER OFF

TOTAL RAIN AT CEC 5.38 inches

Barometer 29.69 AND RISING

TOTAL RAIN AT CHINO 5.34 inches

TOTAL RAIN AT TORO CANYON 9.5 inches

12:00 NOON

PARTLY CLOUDY + WINDY

Barometer 29.80

6:00 PM

Barometer 29.81

KEYT NEWS NEXT STORM ARRIVING TONIGHT

⊗ → GIBRALTAR Reservoir 100% ← ⊗

LAKE CACHUMA 21.4% (up 6% in 2 days)

8:30 PM

SHUT DOWN ENTIRE OPERATION

TURNED OFF SPIDER

POINTED 5 MTS + 4 BB'S INTO GROUND

Research Notes

3-19-91

BOTH STORMS coming in from the West
DROPPED over 10 inches each in the GIBRALTAR
DAM AREA.

THIS MUCH OF THE PROCEEDURE seems well
ESTABLISHED AND ~~REPLICABLE~~ REPLICABLE.

WE ARE LOOKING INTO SITING THE BB'S FARTHER
WEST UP THE COAST TO MOVE OUR PRIME TARGET
AREA FARTHER DOWN THE SANTA YNEZ RIVER
SINCE GIBRALTAR DAM IS OVER-FLOWING

WE HAVE DECIDED TO CONTINUE TO FILL THE
RESERVOIRS IN THE SOUTH COUNTY, LEAVING THE
NORTH COUNTY TO FEND FOR ITSELF

3-21-91

IN DISCUSSIONS WITH JOHN AND STEVE, ARE
CONSIDERING AN OFFER TO PUT WATER BEHIND TWITCHELL
DAM FOR A FEE BASED ON PERFORMANCE

TWITCHELL RESERVOIR WILL HOLD ABOUT
130,000 AC.FT. AND HAS BEEN DRY SINCE 1984.
THE RECENT RAINS HAS PUT 14,000 AC.FT. BEHIND
THE DAM

3-25-91

SBCRI MEETING ON 3-24-91 RECONFIRMED OUR
INTENSION TO OPERATE IN SOUTH COUNTY, TARGET
BRADBURY DAM, CONTINUE TO PROMOTE THE CONVERSATION
AND WAIT TO BE ASKED TO COME TO THE NORTH
COUNTY.

Tuesday

3-19-91

10:00 PM

WILL STAND DOWN ON STORM DUE TO PREDICTED
ARRIVE TONIGHT.

PHIL MANN PREDICTS RAIN WILL BEGIN IN S.B.
BY MID-NIGHT AND CONTINUE ON INTO THURSDAY
HE PREDICTS THAT LAKE CACHUMA WILL FILL
BY THE END OF THE RAINY SEASON THIS YEAR.
WE WILL TRY TO GIVE HIM HIS DREAM.

10:30 PM

RAIN HAS STARTED

BAROMETER 29.82 [TV SAYS 29.89]

Wednesday

3-20-91

7:00 AM

RAIN HAS STOPPED -

RAIN AS OF NOW .70 INCHES AT CHINO

1.05 inches AT MPL.

1.50 inches AT BOBS

.72 inches AT CEC

.75 inches AT STEVES

1:30 PM

RAIN + HALE JUST STARTED

10 MINUTE CLOUD BURST

5:00 PM

PARTLY CLOUDY

RAIN AS OF NOW .80 inches AT CHINO

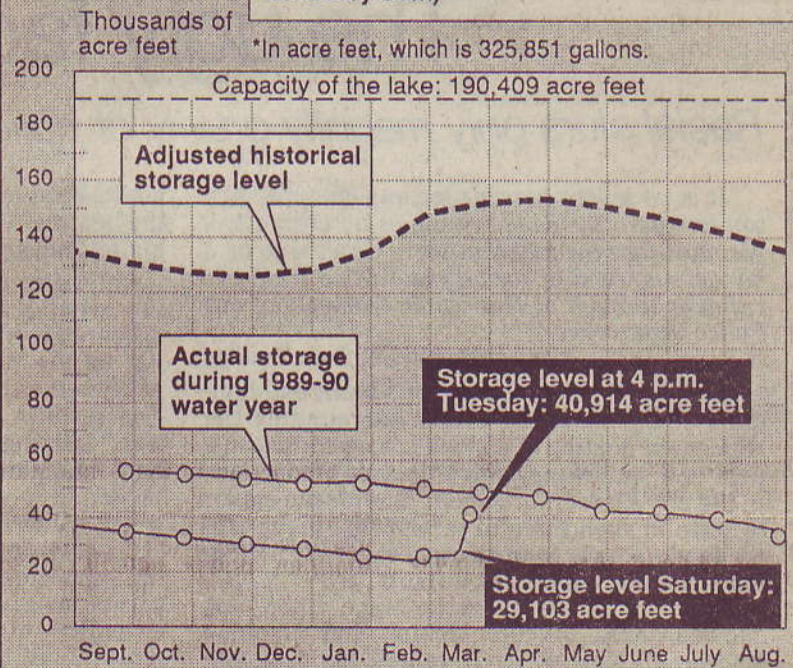
SANTA BARBARA News-Press

MARCH 20, 1991

Storm gives Lake Cachuma a boost

	Saturday morning	Tuesday at 4 p.m.	Change
Storage (in acre feet*)	29,103	40,914	+ 11,811
Percent of capacity	15.3	21.5	+ 6.2

Rainfall in inches (for storm, at Bradbury Dam) 9.6 inches since Saturday



Source: U.S. Bureau of Reclamation

News-Press graphic

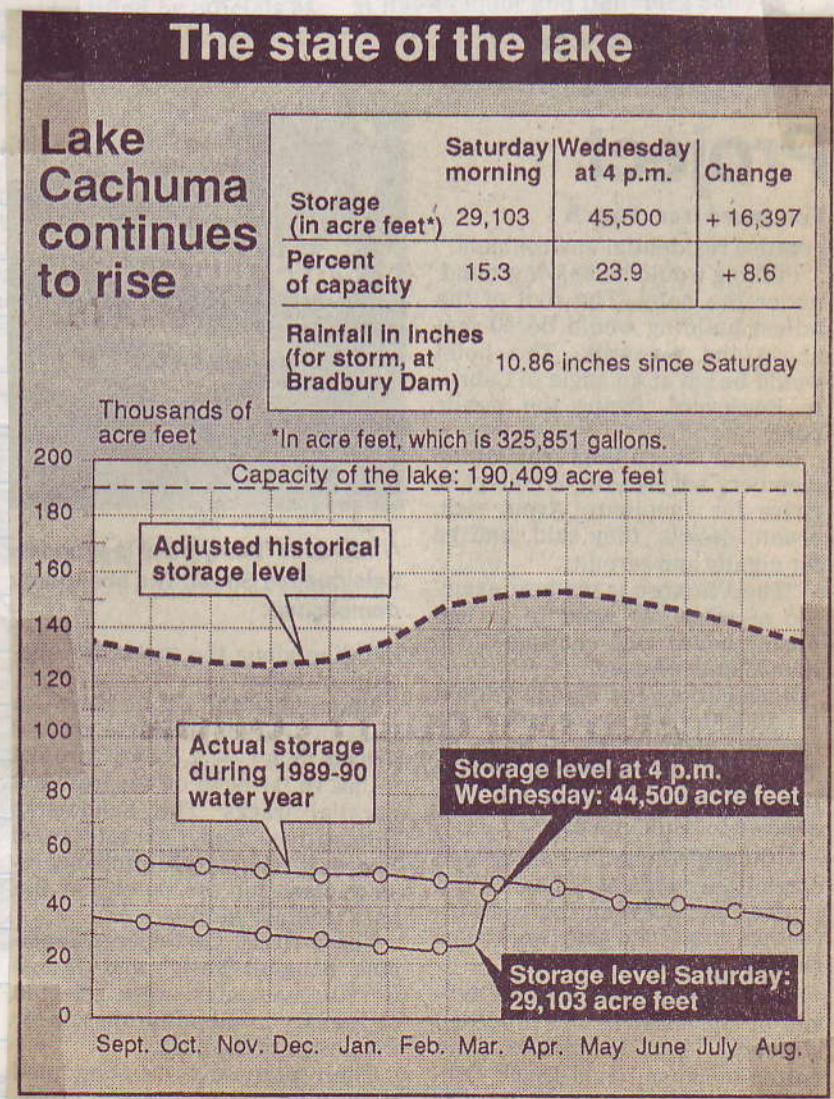
22329-2094 1001, 15 4/24/91

THURSDAY
3-21-91

8:30 AM

SUNNY AND WINDY - MORE SHOWERS PREDICTED FOR TODAY - L.A. Times Reports " WATER officials WILL NOT CONSIDER THE DROUGHT OVER UNTIL CACHUMA IS HALF FULL. " (S.B. officials refering to S.B. DROUGHT only) OUR OPERATION IS STILL IN FULL STAND-DOWN

SANTA BARBARA
News-Press
MARCH 21, 1991



News-Press graphic

MARCH 21, 1991

Santa Barbara County rainfall



N.A. - Not available

Reading 24 hours
ending at 7 p.m.
Wednesday

Location	
1. Santa Maria Airport	0.63
2. Twitchell Dam	0.35
3. Sisquoc	0.48
4. Casmalia	0.64
5. Lompoc	0.76
6. Los Alamos	0.74
7. Manzanita Mtn.	0.71
8. Buellton	0.95
9. Alisal Reservoir	1.81
10. Figueroa Mtn.	0.67
11. Refugio	0.90
12. Lake Cachuma	1.26
13. San Marcos Pass	1.46
14. Goleta	0.67
15. Santa Barbara Airport	0.82
16. Cuyama	0.35
17. West Big Pine Lookout	N.A.
18. Gibraltar Dam	0.99
19. Mission Creek	1.30
20. Santa Barbara Downtown	0.93
21. Mt. Calvary Monastery	1.08
22. Juncal Dam	N.A.
23. Carpinteria	0.95
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to March 20
is 14.27 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to March 20
was 4.70 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to March 20
is 9.69 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990
to March 20, 1991,
is 14.52 inches.

■ Santa Barbara
rainfall Sept. 1, 1989
to March 20, 1990,
was 6.04 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to March 20
is **15.58** inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.
Source: Accu-Weather Inc.

Los Angeles Times
25 MARCH 29 1991
1PP1, 15 H39AM

THURSDAY
3-21-91

8:30 AM

THE STAND DOWN IS FOR A FEW REASONS.

FIRST - TO MINIMIZE DAMAGE FROM ROCK SLIDES AND OTHER RUN-OFF ON ALREADY SATURATED SOIL. RAINS CONTINUE ANYWAY, WHICH WE ARE NOT MOVING TO LESSEN.

SECOND - TO ESTABLISH "NORMAL" RAIN DISTRIBUTION PROFILES FOR OUR TARGET AREAS. GIBRALTAR DAM WILL NO LONGER BE OUR PRIME TARGET. WE HOPE TO SITE MT'S + BB'S IN THE EL CAPITAN AREA WITHIN ONE WEEK TO SET BRADBURY DAM AS PRIME TARGET FOR THE REST OF THE YEAR. (SEASON)

3:00 PM

SUNNY AND WINDY - NO RAIN - AGAINST PREDICTION

10:30 PM

NO RAIN IN SB TODAY

Barometer 29.95

RAIN IS STILL PREDICTED FOR SUNDAY

IT OCCURRED TO ME THIS EVENING THAT THE LAST STORMS BEHAVIOR WAS, IN PART, RELATED TO THE MOON PHASE - 16TH WAS NEW MOON 17TH THE STORM ARRIVED IN COLLAPSED FORM, PERFECT TO BE HELD BY THE SPIDER AND PUMPED UP WITH ENERGY BY THE BLUE BELLIES + MT'S.

Los Angeles Times

MARCH 21, 1991

WHY WAS THIS NOT DREDGED OUT?



Associated Press

In April, 1990, Gibraltar Reservoir was dry. The reservoir supplies Santa Barbara with about a third of its water.

6000 Acre-feet of SILT!

LOS Angeles Times

MARCH 21, 1991



LARRY BESSEL / Los Angeles Times

For the first time in five years, floodgates have been opened to relieve pressure on now-full Gibraltar Reservoir.

The SIGHT of 100 million gallons per hour overflow
(300 acre-feet/hr)

SANTA BARBARA News Press

Friday

MARCH 22, 1991

Oahu homes swept away in second day of flooding

Associated Press

HONOLULU — Torrential rain soaked Hawaii's main island Thursday and rescuers used a helicopter and boats to save six people from homes washed away by raging floods.

It was the second day of flooding on Oahu Island. Runoff from heavy rain flooded hundreds of homes on the island's northeast and north shores Wednesday, cutting off thousands from Honolulu.

Thursday's rain was heaviest on Oahu's south side, where Honolulu is located. Streams draining into Pearl Harbor and crossing the island's central plain were swol-

len with runoff, authorities said.

Three homes were knocked off foundations and carried down Waiawa Stream in Pearl City, 10 miles west of Honolulu, Civil Defense spokesman Joe Reed said.

There were no reports of injuries, and officials did not know whether other people were in the homes, Reed said.

A Honolulu Fire Department helicopter rescued two people off houses just before dawn, about two hours after the homes were swept away, Reed said.

Firefighters in rubber boats rescued four other people from the homes, according to a Fire Department dispatcher.

"PINEAPPLE express BACK fire"

1991, 23 MARCH

23 MARCH

FRIDAY

3-22-91

9:00 AM

Barometer 30.03 AND Rising
SUNNY, WARMER WITH LIGHT BREEZE

CACHUMA LAKE Level

MARCH 21, 1991

48,120 Acre feet

UP 2620 Acre feet in LAST 24 hrs

Predictions

Article in L.A. Times TODAY Page 39 Sec A.
says STORMS will come to So. CAL.

- 1) Late SATURDAY - EARLY SUNDAY morning
- 2) Another will quickly follow on MONDAY
- 3) Another storm developing off the So. CAL COASTLINE SHOULD PRESS INLAND By TUESDAY

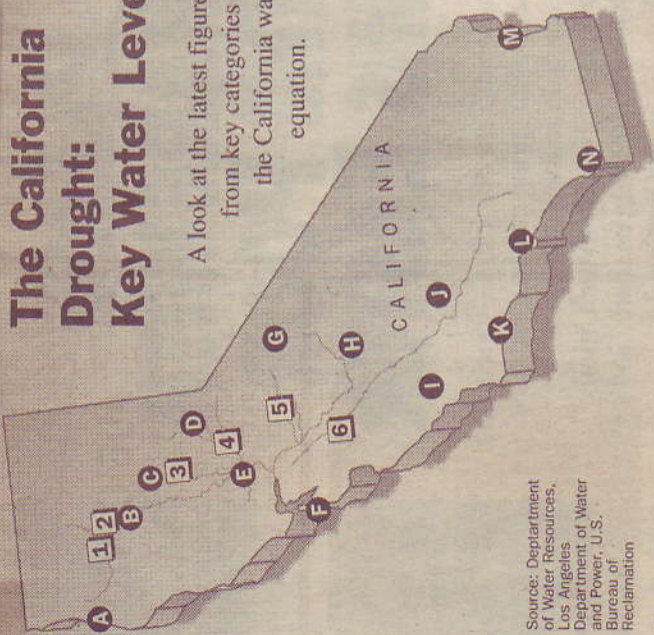
NEWS-PRESS Predicts (on WEATHER Page)
SHOWERS POSSIBLE SUNDAY
SUNNY + Breezy MONDAY, TUESDAY, WED.

NEWS-PRESS ARTICLE Predicts RAIN
SATURDAY SUNDAY MONDAY

Had set up equipment to So. CAL. About one month ago and were going to claim that they broke the drought in an article in the Journal of Organism. I told him that they could claim anything they wanted to.

The California Drought: Key Water Levels

A look at the latest figures from key categories in the California water equation.



Source: Department of Water Resources, Los Angeles Department of Water and Power, U.S. Bureau of Reclamation

FORECAST WATER RUNOFF FROM SNOWPACK

State water officials try to calculate in advance how much runoff is bound for reservoirs and rivers as the snow at high elevations melts and begins to trickle down from April through the month of July. These forecasts are based on snow levels measured on March 21. At right are important water collection areas in California.

Area	% of average runoff for April-July
Northern Sierra	53%
Central Sierra	55
Southern Sierra	72
Shasta Reservoir	64
Feather River	50
Owens Valley	60

RESERVOIR STORAGE AROUND THE STATE (As of March 21)

Reservoir	% of Average Storage	% of Capacity
1 Clair Engle	56%	41%
2 Shasta	54	40
3 Oroville*	47	34
4 Folsom	54	32
5 New Melones	28	16
6 San Luis*	56	49
Total	49	35

* These reservoirs in N. California are among the main sources of water for Los Angeles.

PRECIPITATION THIS SEASON

Station	Inches since Oct. 1*	% of normal*
A Eureka	16.98 "	55%
B Shasta Dam	25.77	56
C De Saba	30.19	57
D Blue Canyon	29.56	60
E Sacramento	10.92	75
F San Francisco	10.03	61
G Yosemite	22.30	77
H Fresno	8.10	93
I Paso Robles	10.09	89
J Bakersfield	4.36	95
K Santa Barbara	13.36	92
L Los Angeles	10.16	79
M Blythe	1.78	85
N San Diego	7.66	96

* All figures from Oct. 1, 1990 to March 20, 1991 except for L.A., which extends to March 22, 1991.

SATURDAY
3-23-91

5:30 AM

Barometer 30.02 starting to drop

Rain still due tonight

⊗ OPERATION still in full stand down.

⊗ → Spoke with Trevor this afternoon —

- ① — since Feb 12 — Desert Hot Springs has had a "Flying H" operating @ 270° pulling from the west — this is the reason the jet stream has locked in to So. Cal and all the storms are coming at us from the West instead of N.W.
- ② Trevor is now committed to break the drought
- ③ There is a spider unit running in Bay Area.
- ④ They are remaining in full operation.
- ⑤ Trevor will be back in Hawaii on Tuesday
- ⑥ Storm track pattern will continue

⊗ → Spoke with Joel Karlinsky this morning

- ① He wanted to know who was "cloud busting" out here — I did not tell him
- ② He said that Jim DeMeco and Richard Blasband had set up equipment in So. Cal about one month ago and were going to claim that they broke the drought in an article in the Journal of Orgonomy. I told him that they could claim anything they wanted to.

Joel
called
me

SATURDAY
3-23-91

6:15 PM

KEYT WEATHER FORECAST - REDUCED
RAIN POTENTIAL FOR TONIGHT
50% CHANCE FOR LIGHT RAIN TOMORROW

JACKIE BOUGHT ME A HYGROMETER FOR
MY BIRTHDAY

RELATIVE HUMIDITY 68% (FROM TV)
SET NEW HYGROMETER

SUNDAY
3-24-91

10:45 AM

NO RAIN LAST NIGHT

PARTLY CLOUDY

BAROMETER 29.95

R. H. 57%

(*) CACHUMA REACHED 50,750 ACFT YESTERDAY
26.6%

NEWS-PRESS -

RAIN STILL LIKELY THIS AFTERNOON, TONIGHT
AND TOMORROW - THIS IS THE LAST OF A SERIES
OF STORMS

CLEAR, TUESDAY → FRIDAY

WE WILL STAND DOWN FOR THIS STORM

Prediction


Sunday
3-24-91

12:30 PM

clearing - sky much clearer than at
10:45 AM cumulus clouds over mtns
High cirrus clouds elsewhere in sky
Barometer 29.93 and dropping
R. H. 49% and dropping

2:30 PM

sky clouding up again
dark cumulus clouds over mtns
Barometer 29.90 and dropping
R. H. 50% and rising

Spoke with Trevor today -

He is not against us trying to subsidize
our operation up here. He does not believe
we will be successful. If we do, we should
file with NOAA

He is going back to Hawaii on Tuesday 26th
and will be back on April 4th

Trevor and I agreed that this storm needed
help from here by using spider in CCW mode
to help feed energy to it on its approach

We continue to watch how unassisted storms
from the north tend to get "cut-off" by Morro Bay
(Diablo Canyon Nuclear Power Plant)

SUNDAY
3-24-91

3:07 PM

CLOUDS over MOUNTAINS moving E → W
LARGE CLOUD BANK coming in from the
West moving W → E
Barometer 29.89 AND Dropping
R.H. 55% AND Rising

7:00 PM

LIGHT RAIN began AT ABOUT 6:45 PM
Barometer 29.83
R.H. 77%

8:15 PM

LIGHT RAIN continues
Barometer 29.83
R.H. 84%

9:10 PM

RAIN continues
Barometer 29.83
R.H. 85%
RAIN AS of NOW AT CHINO .15 inches

11:00 PM

RAIN continues
Barometer 29.82
R.H. 83%
RAIN AS of NOW AT CHINO .40 inches

TUESDAY MARCH 26 1991

Santa Barbara News-Press,

Santa Barbara County Rainfall



N.A. — Not available,
gauges malfunctioned

Reading 25 hours
ending at 7 p.m.
Monday

Location	
1. Santa Maria Airport	0.81
2. Twitchell Dam	N.A.
3. Sisquoc	N.A.
4. Casmalia	N.A.
5. Lompoc	0.70
6. Los Alamos	N.A.
7. Manzanita Mtn.	N.A.
8. Buellton	N.A.
9. Alisal Reservoir	0.31
10. Figueroa Mtn.	N.A.
11. Refugio	N.A.
12. Lake Cachuma	N.A.
13. San Marcos Pass	N.A.
14. Goleta	0.90
15. Santa Barbara Airport	0.88
16. Cuyama	N.A.
17. West Big Pine Lookout	0.71
18. Gibraltar Dam	2.29
19. Mission Creek	0.55
20. Santa Barbara Downtown	1.02
21. Mt. Calvary Monastery	N.A.
22. Juncal Dam	N.A.
23. Carpinteria	0.74
Santa Cruz Island	N.A.

ANNUAL (Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to March 25
is 14.36 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to March 25
was 4.70 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to March 25
is 10.16 inches.

SEASONAL (Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990
to March 25, 1991,
is 14.61 inches.

■ Santa Barbara
rainfall Sept. 1, 1989
to March 25, 1990,
was 6.04 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to March 25
is 15.75 inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.

Source: Accu-Weather Inc.

News-Press graphic

MONDAY
3-25-91

2:45 Am

RAINING HEAVILY AT THE moment

Barometer 29.81

R.H. 85%

RAIN AS OF NOW AT CHINO .71 INCHES

7:00 Am

RAIN HAS STOPPED

Barometer 29.81

R.H. 81%

RAIN AS OF NOW AT CHINO .86 INCHES

Prediction
/

L.A. Times Predicts:

SHOWERS on/off TODAY, TONIGHT AND Tomorrow

7:30 Am

STARTED RAINING AGAIN (BRIEF SHOWER)

STOPPED By 7:40 Am

9:30 Am

SKY HAS CLEARED

Barometer 29.82

R.H. 69%

RAIN AS OF NOW AT CHINO .93 INCHES

L.A. Times WEATHER MAP SHOWS HIGH PRESSURE
System in NORTH PACIFIC HAS COLLAPSED AND
A new LOW PRESSURE system can now PROCEED
in our DIRECTION

Latest rainfall a boon for runoff

By Chris Malcolm
News-Press Staff Writer

Additional rainfall this week will keep runoff in the Santa Ynez Valley off and running, county water officials said Monday.

A new band of showers that began soaking the county Monday night will continue today and into Wednesday, according to the National Weather Service in Santa Maria.

The showers should end Wednesday afternoon, with skies remaining clear through the weekend, the weather service said.

Water levels continued to rise Monday at reservoirs along the Santa Ynez River that serve as major water sources for the South Coast. County Water Agency Manager Rob Almy said the new rain will perpetuate the current hillside tributaries.

"Now the system is saturated enough to allow a higher percentage of the rains to be runoff," said Almy, who added that February's rains only soaked the dry land and did not add much to the reservoirs and lakes.

This year's rainfall in Santa Barbara County already is nearly 10 inches more than the amount received at this time last year, the weather service said.

Sunday night's storm left 1.02 inches in downtown Santa Barbara while .81 inches was collected in Santa Maria, according to AccuWeather Forecasting, a private forecasting firm. Elsewhere, .70 inches fell in Lompoc, .74 inches in Carpinteria and .90 inches in Goleta.

More importantly, Lake Cachuma, Gibraltar Reservoir and Jame-

Rain

Continued from Page A 1

son Lake all received more than two inches of rainfall during Sunday night's storm.

The recent storms eventually could boost Cachuma's level to roughly 70,000 acre-feet, said Dave Johnson, director of the Santa Barbara's Public Works Department. Johnson told the city's Water Commission on Monday that he expects the runoff from the recent storms alone to continue for several months.

On Monday afternoon, Lake Cachuma climbed to 52,565 acre-feet of water, which is an increase of 1,840 acre-feet since Friday, Cachuma officials said. That is slightly more than the lake held at this time last year.

The Montecito Water District reported that Jameson Lake, one of that community's major sources of water, climbed two feet during the weekend rain. On Monday morning, the lake was at 82 percent capacity with 4,097 acre-feet. It had been as low as 17 percent in January.

Gibraltar Reservoir, which lies between Jameson and Cachuma lakes, continued to spill into the river at the rate of 110 acre-feet per hour Monday night.

The county Flood Control and Water Conservation District has increased cloud seeding efforts during the recent weeks of rain. Cloud seeding boosts the amount of rain that falls in certain areas, although the district's Rolf Ohlemutz said the delicate Painted Cave Fire area was left out of the plan.

"But we did increase the rain that is falling over the upper Santa Ynez watershed," Ohlemutz said.

None of the storms will be as strong as the ones that hit a week ago, but any rain is good rain, said

Rosie Kimes, an administrative manager for the Cachuma Operations and Management Board.

See RAIN, Page A 7

MONDAY
3-25-91

12 NOON

PARTLY CLOUDY

BAROMETER 29.83

R. H. 52%

RAIN AS OF NOW AT CHINO .96 INCHES

4:00 PM

RAIN AS OF NOW AT CHINO .96 INCHES

AT STEVES .95 INCHES

AT 10THS 1.05 INCHES

AT MPLS .80 INCHES

AT BOBS INCHES

5:30 PM

CNN — NATIONAL WEATHER SERVICE

DROUGHT WILL CONTINUE

"CALIFORNIA IS LIVING ON BORROWED TIME."

NO RAIN SINCE NOON

BAROMETER 29.83

R. H. 52%

7:30 PM

BAROMETER 29.80

R. H. 66%

10:45 PM

STARTED RAINING AT 8:30

BAROMETER 29.80

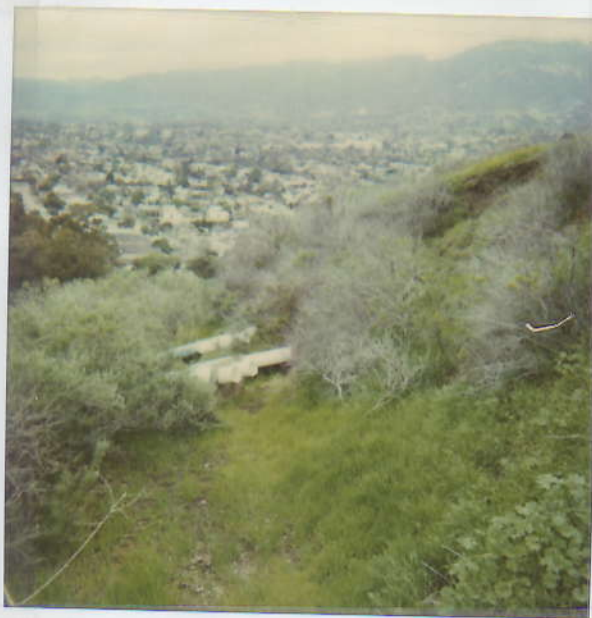
R. H. 79%

RAIN AS OF NOW

AT CHINO .30 INCHES

Prediction
⚡

South Bay News-Press
Tuesday March 26, 1991



3-91 5 "Bluebellies" AT SANTA
BARBARA INSTALLATION ON A 65-80°
SPREAD - POINTED AT LARGE HILL
DOWNTOWN SB. AND MOUNTAINS IN BACKGND.

UNITS REINSTALLED AT 10:00 AM
Tuesday March 26, 1991

TUESDAY
3-26-91

8:00 Am

PARTY CLOUDY - NOT RAINING AT THIS TIME

Barometer 29.80 steady

R. H. 61%

RAIN AS OF NOW AT CHINO .33 inches

AT STEVENS .30 inches



SNOW ALL OVER THE MOUNTAINS BEHIND S.B.
CLOUD SEEDING REPORTED OVER UPPER SANTA YNEZ
RIVER BASIN IN TODAY'S SB NEWS PRESS.

WE HAVE NOT OPERATED IN THE HOPE OF
COLLECTING DATA ON UNASSISTED RAINFALL
DISTRIBUTION IN THE COUNTY - WITH CLOUD SEEDING
GOING ON THIS IS NOT POSSIBLE

"GOLETA PUTS GLACIER PLAN ON ICE,
VOTES TO JOIN CITY DESAL PROJECT" } TO BAD
- HEADLINE IN SB NEWS-PRESS TODAY - JACK!

LAKE CAHUMA IS AT 52,565 ACRE FEET
AS OF MONDAY AFTERNOON (27.6% FULL)

10:00 Am

GOING BACK INTO OPERATION

SPIDER CW @ 25 RPM

5 BB'S @ 65° - 80°

CNN COLOR RADAR SHOWS RAIN APPROACHING S.B.

RAIN BEGINS AT 10:15 AM

Santa Barbara County rainfall



N.A. — Not available

Reading 25 hours
ending 8 p.m.

Location

Tuesday Monday

Storm
totals

Location	Tuesday	Monday	Storm totals
1. Santa Maria Airport	0.89	1.70	
2. Twitchell Dam	0.83	N.A.	
3. Sisquoc	0.71	N.A.	
4. Casmalia	0.74	N.A.	
5. Lompoc	1.19	1.89	
6. Los Alamos	0.71	N.A.	
7. Manzanita Mtn.	0.94	N.A.	
8. Buellton	0.93	N.A.	
9. Alisal Reservoir	1.46	1.77	
10. Figueroa Mtn.	1.22	N.A.	
11. Refugio	1.30	N.A.	
12. Lake Cachuma	1.06	N.A.	
13. San Marcos Pass	0.95	N.A.	
14. Goleta	0.91	1.81	
15. Santa Barbara Airport	0.08	0.96	
16. Cuyama	0.47	N.A.	
17. West Big Pine Lookout	0.11	0.82	
18. Gibraltar Dam	2.32	4.61	
19. Mission Creek	2.13	2.68	
20. Santa Barbara Downtown	0.99	2.01	
21. Mt. Calvary Monastery	N.A.	N.A.	
22. Juncal Dam	N.A.	N.A.	
23. Carpinteria	0.91	1.65	
Santa Cruz Island	N.A.	N.A.	

ANNUAL
(Jan. 1 to Dec. 31)

■ Rainfall this year
in Santa Barbara
Jan. 1 to March 26
is 15.35 inches.

■ Rainfall last year
in Santa Barbara
Jan. 1 to March 26
was 4.70 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Jan. 1 to March 26
is 10.26 inches.

SEASONAL
(Sept. 1 to Aug. 31)

■ Santa Barbara
rainfall Sept. 1, 1990
to March 26, 1991,
is 15.60 inches.

■ Santa Barbara
rainfall Sept. 1, 1989
to March 26, 1990,
was 6.04 inches.

■ Thirty-year
average rainfall
for Santa Barbara
Sept. 1 to March 26
is 15.85 inches.

Annual and seasonal
totals are based on
readings at the Santa
Barbara downtown
gauge. Readings are
taken from gauges
maintained by the
Santa Barbara County
Flood Control and Water
Conservation District.
Source: Accu-Weather Inc.

Tuesday
3-26-91

Prediction
⚡

BOTH LA Times + SB News Press
Predict RAIN SHOWERS to continue off/on
TODAY, TONIGHT AND TOMORROW.

RAIN TOTAL AT CEC 1.37 inches
(SUNDAY NIGHT TO TUESDAY 10:00 AM)

10:30 AM

RAINING

Barometer 29.80 AND STEADY

R.H. 61% AND RISING

11:50 AM

RAINING off AND on

CNN SHOWS A LOW PRESSURE TROUGH
MOVING THROUGH HERE TODAY - ALSO MENTIONED
NUMEROUS FUNNEL CLOUDS IN LA. AREA

1:50 PM

Heavy RAIN SHOWER

Barometer 29.80

R.H. 71%

3:00 PM

RAINING w/ OCCASIONAL Heavy SHOWERS

Barometer 29.80

R.H. 78%

RAIN AS OF NOW AT CEC .60 inches

VAD29UT
1P-25-2

Santa Barbara News-Press

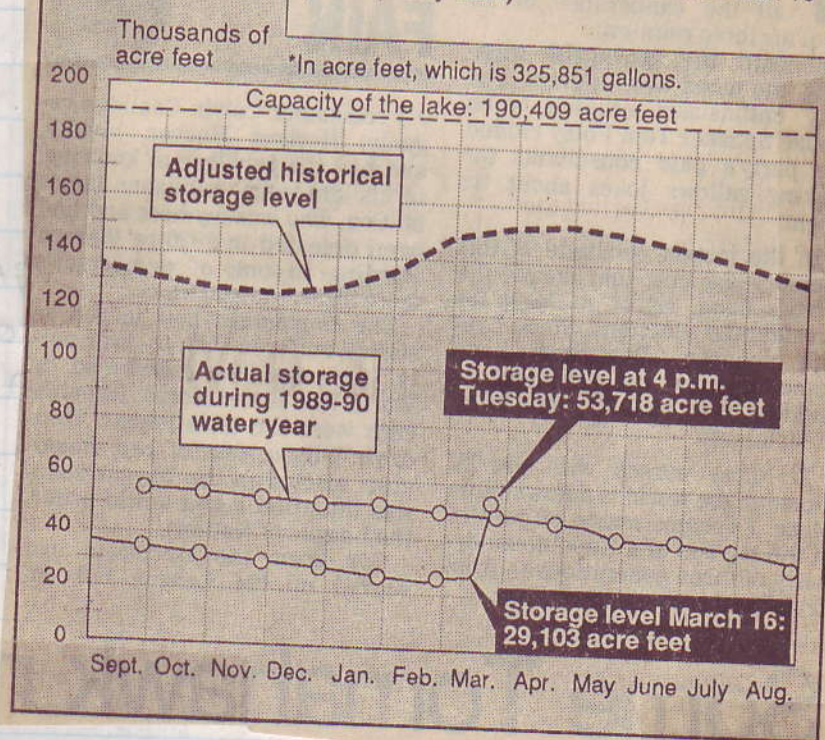
SANTA BARBARA News-Press

WEDNESDAY MARCH 27, 1991

The state of the lake

Lake Cachuma storage more than last year

	March 16	Tuesday	Change
Storage (in acre feet*)	29,103	53,718	+ 24,615
Percent of capacity	15.3	28.2	+ 12.9
Rainfall in inches (at Bradbury Dam) 13.25 inches since Mar. 16			



News-Press graphic

LAKE CACHUMA
Level

FEB 27 1991

MARCH 26

27,681 Ac. Ft. 53,718 Ac. Ft.
(14.5%) (28.2%)
→ UP 94% ←

Tuesday
3-26-91

5:20 PM

RAIN CONTINUES

Barometer 29.80

R. H. 80 %

RAIN AS OF NOW AT CHINO .73 inches

6:15 PM

KEYT WEATHERMAN PHIL MANN

RAIN AMOUNTS

S. B .79

GOLETA .75

GIBRALTAR DAM 2.01

CACHUMA ~~2.01~~ .83

SAN MARCOS 1.50

} 24 hr
TOTALS

(much lower amounts elsewhere)

Prediction
→

Heavy RAIN TONIGHT, CLEARING TOMORROW
High WIND, HAIL, SNOW

Barometer 29.78 AND FALLING

R. H. [92% ^{KEYT} T.] (81% AT CHINO)

LAKE CACHUMA - over 28% FULL

11:40 PM

RAINING LIGHTLY

Barometer 29.76

R. H. 81 %

RAIN AS OF NOW AT CHINO .81 inches

RAIN TOTALS From FEB 26 — MAR 26 1991

	MAR 1 ST.	MAR 5	MAR 14	MAR 20	MAR 27
S.B. DOWNTOWN	5.28				
GIBRALTAR DAM	10.08				
LAKE CACHUMA	5.82				
GOLETA	3.76				
CARPINTERIA	4.61				
ALISAL RES.	6.89				

	S.B. DOWNTOWN	GIBRALTAR DAM	LAKE CACHUMA	GOLETA	CARPINTERIA	ALISAL RES.
MARCH 1 STORM TOTAL	5.28	10.08	5.82	3.76	4.61	6.89
MARCH 5	.47	.59	.52	.47	.47	.59
MARCH 14	.16	.27	.28	.20	.23	.28
MARCH 20 STORM TOTAL	6.11	11.10	8.95	5.36	6.93	11.78
MARCH 21	.93	.99	1.26	.67	.95	1.81
MARCH 27 STORM TOTAL	2.01	4.61	(3.04)	1.81	1.65	1.77
RAIN TOTALS for FEB 26 — MAR 26	14.96	27.64	19.87	12.27	14.84	23.12

LAKE CACHUMA 25 PS
Level 18.7681 AC. 4.83, 718 AC. A.
29.501 18. 0.143 (TA. 0.04) to 2A 0.143 (28.2%)
→ UP 94% ←

2289-2094 BARBARA AT4A2

MARCH 27 1991 8:54 AM

Wednesday
3-27-91

7:00 AM

SKIES CLEAR WITH A FEW CLOUDS

SNOW ON THE MOUNTAINS BEHIND SANTA BARBARA.

RAIN AT CHINO 1.0 inches

TOTAL RAIN AT CHINO SINCE SUNDAY 1.96 inches

Barometer 29.78

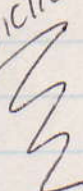
R. H. 78%

8:20 AM

SKY CLEAR WITH A FEW CLOUDS

Barometer 29.82 AND RISING

R. H. 65% AND FALLING

Prediction


LA TIMES PREDICTS MORNING SHOWERS BUT
CONDITIONS HERE SUGGEST THAT ALL RAIN ACTIVITY
HAS PASSED. FRIDAY, SATURDAY AND SUNDAY
ARE PREDICTED TO BE MOSTLY SUNNY WITH INCREASING
CLOUDS RETURNING SUNDAY

9:10 AM

TURNED SPIDER OFF

RAIN AT CEC .62

RAIN TOTAL AT CEC SINCE SUNDAY 1.99 inches

TOTAL AT TONY'S SINCE SUNDAY 2.4 inches

10:00 AM

Barometer 29.82

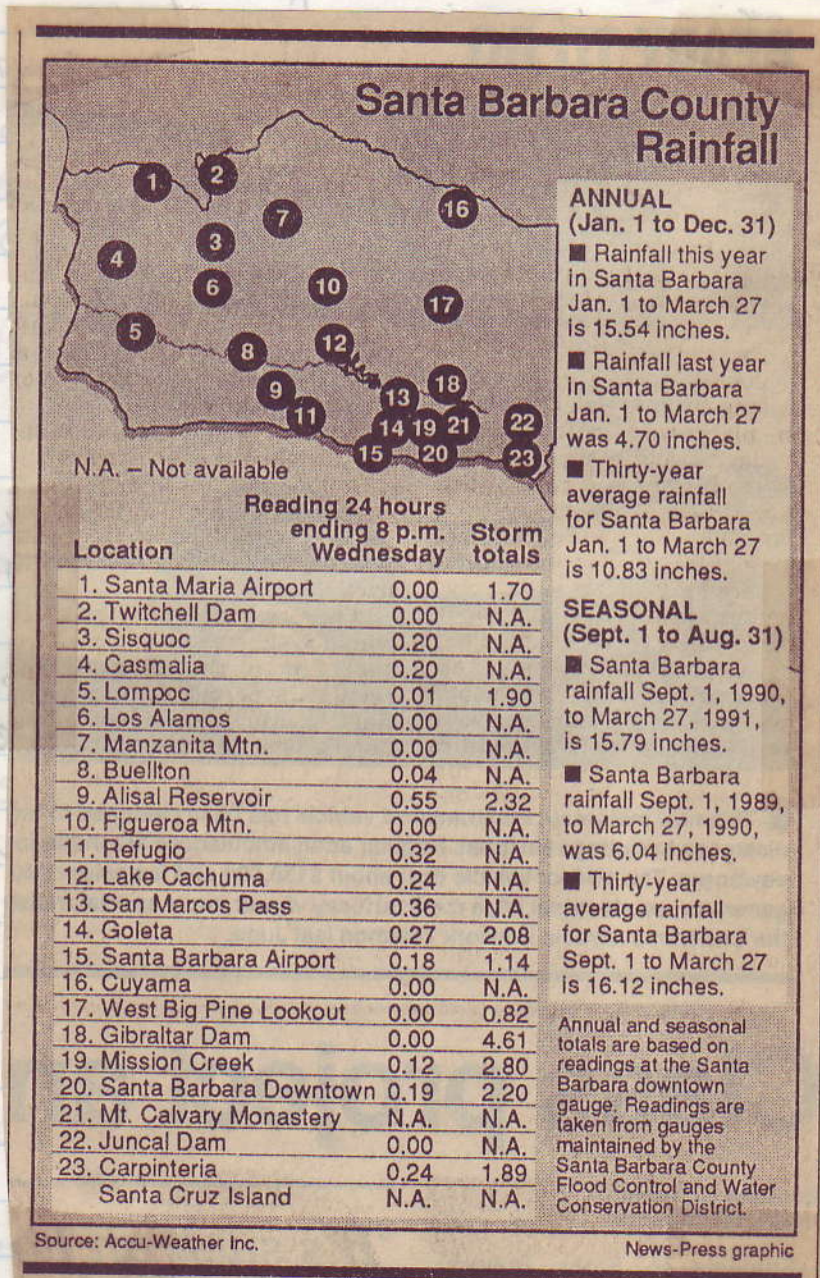
R. H. 47%

RAIN TOTAL AT STEVE'S SINCE SUNDAY 1.75 inches

SANTA BARBARA News-Press

MARCH 28, 1991

RAIN TOTALS FROM FEB 26 - MAR 27 1991



S.B. Newspress
3-28-91

Wednesday
3-27-91

4:20 PM

SUNNY WITH A FEW CLOUDS
Barometer 29.83
R. H. 41 %

6:30 PM

Barometer 29.88
R. H. 53 %

10:30

Barometer 29.96
R. H. 71 %

Thursday
3-28-91

8:30 AM

SUNNY AND CLEAR
Barometer 30.07
R. H. 70 %

LAKE CACHUMA ON WEDNESDAY REACHED
57,864 ACRE FEET
30.3 % FULL
UP 109 % SINCE FEB 27TH

8:45 AM

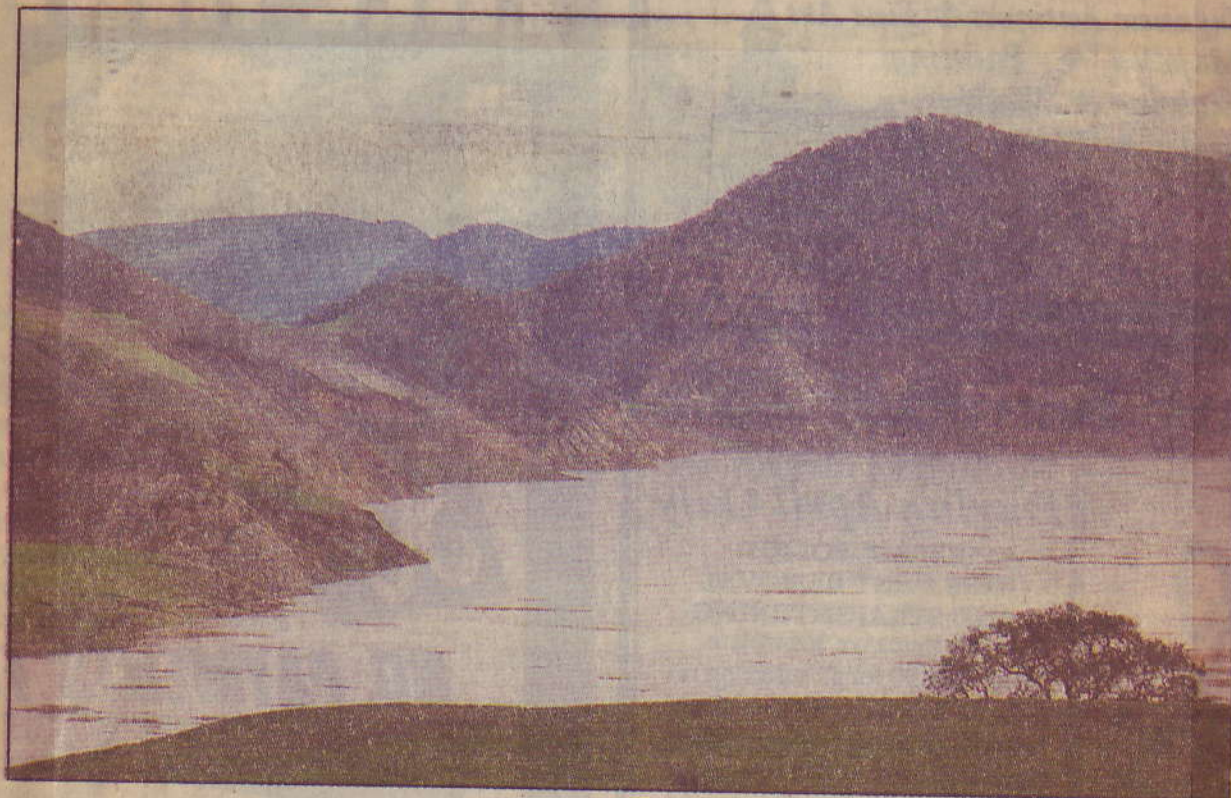
RESET SPIDER ICCW @ 20 RPM

Wednesday
IP-55-8

SANTA BARBARA News-Press

SANTA BARBARA News-Press

THURSDAY MARCH 28, 1991



Len Wood/News-Press

Twitchell Reservoir, east of Santa Maria on Highway 166, is trapping the Cuyama River's flow for the first time in five years.

8:45 AM

Reset 2400s ICCW @ 20 RPM

New reservoir rises with rain

By Stephanie Finucane
and Chris Malcolm
News-Press Staff Writers

A new lake is forming behind a dam near Santa Maria, thanks to March rains.

Twitchell Dam, located east of Santa Maria on Highway 166, is trapping the Cuyama River's flow for the first time in five years. The reservoir, which straddles the border between Santa Barbara and San Luis Obispo counties, stores water that is released

■ County rain chart on Page B 4.

into Santa Maria's underground basin.

"We have water behind the dam. I'm not sure exactly how much. Our (measuring device) isn't working," said Sandy Nott, the Twitchell Dam tender.

More rain isn't expected for a while. The National Weather Service in Santa Maria predicts skies will stay clear through the weekend. But runoff from the storms continues to flow into Lake Cachuma, the Gibraltar Reservoir and Jameson Lake on the Santa Ynez River.

The Twitchell Dam was built in the 1950s on the

Santa Maria River.

Nott said she won't be releasing the water anytime soon. "We won't even consider letting the water go until all the rains have stopped," she said.

The area around the reservoir, usually dry and brown, is now a nice shade of green, and a pool of water at the dam is clearly visible from the highway.

"It's a little bit on the muddy side," Nott said, "but it's awful pretty."

Jameson, which was nearly empty in January, was standing at 89 percent capacity Wednesday morning with 4,447 acre-feet. An acre-foot equals 325,851 gallons. The lake rose 2 feet between Tuesday and Wednesday mornings as a result of runoff. Jameson now is almost 4 feet from spilling over for the first time since 1986.

Chuck Evans, general manager of the Montecito Water District, said Jameson probably won't spill unless it rains again soon.

"Still, I'm really pleased," said Evans, whose district pulls 35 percent of its water from Jameson. "We're just tickled to death. But the sobering thought is Cachuma is still quite a ways down."

Downstream from Jameson, the Gibraltar Reservoir continued to spill into the Santa Ynez River at roughly 100 acre-feet per hour.

Lake Cachuma stood at 30 percent of capacity, with 57,864 acre-feet stored Wednesday morning.

But Cachuma has risen steadily since recent rainstorms washed over the county. The lake held just 29,103 acre-feet March 16. Storms have added almost 17,000 acre-feet to the lake in the past eight days.

Downtown Santa Barbara has received nearly 2.4 inches of rain since 6 p.m. Sunday, and is nearing 11 inches for the month of March. The 30-year average for March rainfall is 2.45 inches in Santa Barbara.

Between 6 p.m. Sunday and 6 a.m. Wednesday, Accu-Weather, a forecasting service, reported 1.7 inches of rain in Santa Maria, 1.9 inches in Lompoc, and 2.08 inches in Goleta.

Tuesday's snowfall on top of the Santa Ynez Mountains brought the normal flock of curious folks to see the rare white stuff. And more people found snow still on the ground Wednesday.

"Some of the snow is still here," said Anna Handley of the Cielo Store, 5396 E. Camino Cielo Road. "Yes, actually business has gone up."

The Santa Barbara Harbor weathered the most recent storms well. Most of the boats moored outside the harbor were moved inside after four boats washed up on the beach March 18, the Harbor Patrol said.

Portions of Highway 166 were closed again Wednesday due to flooding. The two-lane highway, which runs between Santa Maria and Bakersfield, was closed at New Cuyama, about 60 miles east of Santa Maria.

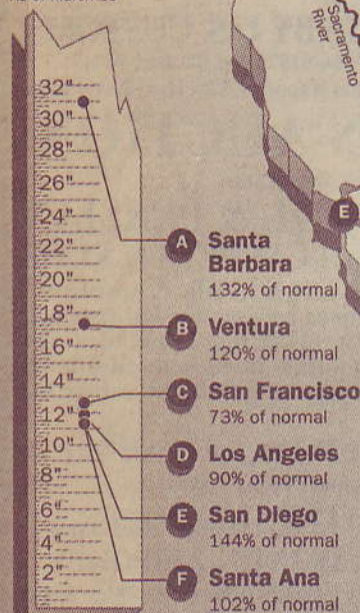
California Drought Watch

A monthly look at the water shortage

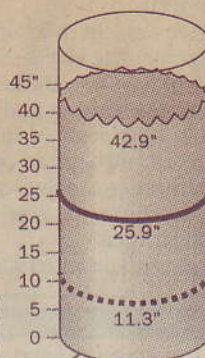
Now being referred to as a "miracle" month, March's rainfall has prevented 1991 from going down in history as the driest year on record. At the same time, it has failed to push the state above the critical level. Precipitation for the season measured at the Sacramento River Basin is now at 60% of normal, with about two-thirds of that falling in March alone. Precipitation in the Eastern Sierra was 10% of normal in February and is now at more than 70% of normal.

Coastal rainfall yardstick

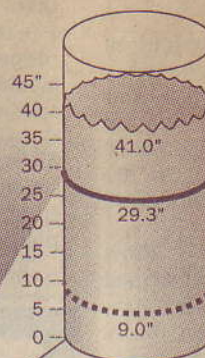
As of March 29



Sacramento River Basin



Eastern Sierra*



Precipitation in normal season

Precipitation this season

..... Driest season on record (1977)

*Measured at Mammoth Pass

Colorado River

A feared 25% reduction in Colorado River allocations will not happen this year, ensuring that Southern California will get the same amount it did in 1990. Although runoff into the river is estimated at 54% of normal, water is plentiful enough to continue sending states their allocations for the next few years.

The Bottom Line

While substantial, March rainfall has not ended the drought. To reach normal precipitation levels for the year, 26 more inches of rain would need to fall in the Sacramento River Basin, the main source of water for the state. In the highly unlikely event that normal rainfall levels for the year are achieved, it will still not be enough to replenish reservoirs and ground water reserves depleted over the course of the drought.

Water-Saving Tip

Fix leaks in your home or business. A trickle can waste 90 gallons a day, or 2,700 gallons a month. A drip can waste 50 gallons a day, or 1,500 gallons a month.

Viewpoint

“Great rain in one month cannot make up for five dry months following four dry years.”

Bill Helms of the State Drought Center in Sacramento.

What a Difference a Month of Rain Makes

Sure, the drought is not over. But look at what March's incredible rainfall and snowfall did accomplish:

- Many areas of the state, including San Diego, Ventura and Fresno, surpassed their normal rainfall amounts for the year. Los Angeles was on the verge as the month ended.
- Ventura and Chico set records for rainfall in the month of March.
- State and local water suppliers started talking about easing cutbacks on deliveries come next month. Water districts in some places began easing water use restrictions.
- Los Angeles was spared an increase from 10%-15% water rationing to 25%—at least for the time being.
- Recreational outlets at lakes and ski resorts were suddenly flush with business.
- Santa Barbara, its tourism hurt by the image of landscapes turned golden for the lack of water, has hills of green again.

THURSDAY
3-28-91

3:15 PM

SUNNY AND CLEAR

BAROMETER 30.07

R. H. 50%

Prediction
/

L.A. Times Predicts chance of Showers
By Monday

9:00 PM

BAROMETER 30.06

R. H. 73%

FRIDAY
3-29-91

SUNNY WITH STEADY BAROMETER

SATURDAY
3-30-91

SUNNY WITH STEADY BAROMETER 30.03

Prediction
/

RAIN Predicted FOR LATE MONDAY, TUESDAY
AND WEDNESDAY

SUNDAY
3-31-91

5:45 PM

CNN Predicts RAIN Tomorrow - LIGHT INTERMITTENT
SHOWERS -

BAROMETER 29.97 AND DROPPING

L.A. Times

A16 TUESDAY, APRIL 2, 1991 ★

Another Powerful Storm Heads for State

By CARL INGRAM
TIMES STAFF WRITER

SACRAMENTO—Weather forecasters said Monday that a powerful storm system similar to the March "miracles" that helped ease drought conditions is heading toward California and will bring heavy rain and snow to critical watersheds by week's end.

"I hope it materializes as strongly as [meteorologists] seem to think it will," said Maurice D. Roos, chief hydrologist of the state Department of Water Resources, who stressed that as welcome as the storm would be, the extra precipitation would further soften the drought but not end it.

For California to get a significant boost out of this month's weather patterns, precipitation in April—traditionally the tail of the rainy season—would have to be an unlikely 2½ times normal; Roos said.

Meteorologist Steve Burback of

WeatherData Inc., which provides forecasts for The Times, said a cold-weather system organizing in the Gulf of Alaska is expected to reach northwestern California tonight or Wednesday.

By Thursday afternoon, the expected storm should move farther south and bring "moderate to heavy rains with snow in the higher elevations, at least to start with," Burback said.

"It appears that it is shifting back to the pattern that we had in March with lots of rain and snow," Burback said.

In a related development, automatic precipitation sensors located at measuring sites throughout the northern watersheds and the Sierra Nevada recorded snow dustings and light rains on Monday, Roos said.

In the Southland, scattered rain-showers and cooler temperatures greeted morning commuters.

Roos noted that the sensors, which measure the water content

of snow, preliminarily showed the snowpack water content to be 72% of average in the mountains of California. The water content was a little heavier in the central and southern Sierra for this time of year and slightly lighter in the north, he said.

The water content of snow is an important ingredient of state and federal forecasts that are drawn up to indicate how much water will be available to Californians throughout the year.

Until the current round of measurements is completed, state officials said they could not increase deliveries of state water to contractors, such as the Metropolitan Water District.

Earlier, state officials had estimated that by April 1, State Water Project deliveries running at only 10% of normal—such as those to the MWD—could be increased to 20% of normal. An announcement of increases may come this week.

Tuesday
4-2-91

AS of MONDAY: (S.B. News-Press)

- 1) LAKE CACHUMA HOLDS 66,210 Acre feet
34.7 % Full
- 2) GIBALTAR RESERVOIR HOLDS 8500 Acre feet
100 % Full
- 3) JAMESON LAKE HOLDS 4897 Acre feet
98 % Full
- 4) GOLETA HAS STOPPED PUMPING ITS 14 GROUND WELLS
- 5) NO RAIN FORECAST FOR S.B. TUESDAY - SUNDAY
- 6) RAIN FOR SEASON TO DATE 15.79 inches
NORMAL RAIN FOR SEASON TO DATE 16.36 inches

⊗ LAST THURSDAY TREVOR CALLED AND HIRED me TO GO WITH HIM TO MALAYSIA FOR TJC-ATMOS. BECAUSE OF THIS, EQUIPMENT WILL NOT BE RE-SITED TO TARGET BRADBURY DAM. OPERATIONS WILL CONTINUE IN MY ABSENCE BASICALLY AS IS BY STEVE SHAFARMAN TO CONTINUE TO PUSH LAKE CACHUMA OVER 50 % (95,204 Acre feet) BY THE END OF THE RAINY SEASON - ALL OTHER SO. CAL. OPERATIONS WILL REMAIN RUNNING SO THAT STORM TRACK WILL CONTINUE ARE STARTING TO OPERATE TO BRING THE STORM FURTHER SOUTH. TREVOR SAID HE WOULD BE BACK IN SO. CAL. TOMORROW AND WOULD DO SOMETHING IN HAWAII BEFORE HE LEFT.

Tuesday

4-2-91

9:20 AM

Sunny with a few High Clouds

Barometer 30.09

R. H. 64%

10:45 AM

Re-set SPIDER @ 1CCW AT 28 RPM

This kind of setting under this circumstance is to weaken the High Pressure system and help pull the cold front approaching now from the Gulf of Alaska

3:30 PM

Re-set 5 MT's @ 270° - This is an experiment to see if this unit pointed into the flow can help weaken the High Pressure system and pull in the approaching cold front

(4-3-91) [This setting basically expands the ether and clears the sky]

Wednesday

4-3-91

6:15 PM

Storm is predicted to move north of S.B. By the wknd - I spoke to Trevor this evening and Banning and Desert Hot Springs are starting to operate to bring the storm farther south. Trevor said he would be back in So. Cal. tomorrow and would do something in Hawaii before he left.

MA-05:P

130th Year—No. 279 Oldest daily newspaper in Southern California

25c

H₂Oh! Officials gush over deluge as area cups runneth over



Optimism is prevailing throughout much of the Central Coast area — as evidenced here by the buoyant reaction of the local paper after a storm. Recent rains boosted local water supplies and allowed some communities to relax stringent water rationing. Here is a list of places where the water outlook has brightened since late February, when the series of rainstorms hit the region.

MONTEREY COUNTY

- 1 **Los Padres Reservoir:** On Feb. 27, it was 5% of capacity. Today it is 100% of capacity.
- 2 **San Clemente Reservoir:** Feb. 27, it was 62%. Today it is 100%.
- 3 **Lake San Antonio:** Feb. 27, it was 5%. Today it is 12%.

SAN LUIS OBISPO COUNTY

- 4 Salinas Reservoir:** Feb. 27, it was 6% of capacity. Today it is 56%.
- 5 Lake Nacimiento:** Feb. 27, it was 7% of capacity. Today it is 35%.
- 6 Whale Rock Reservoir:** Feb. 27 it was 30%. Today it is 40%.

SANTA BARBARA COUNTY

- 7 Gibraltar Reservoir:** Feb. 27, it was 0% of capacity. Today it is 100%.
- 8 Jameson Reservoir:** Feb. 27, it was 17% of capacity. Today it is 99%.
- 9 Lake Cachuma:** Feb. 27, it was 15%. Today it is 35%.

How communities will benefit

Monterey: Will reduce rationing and may end it.
Goleta: Putting off plan to ship in water from Canada.
Cambria: Has lifted rationing of 50 gallons a day per person.
Morro Bay: Has enough water to last until July, when a desalination plant will be ready.
San Luis Obispo: Has shelved plans for desalination plant, will reduce rationing.
Santa Barbara: Plans to lift ban on watering lawns.
Salinas Valley: Some farmers can now plant full acreage.

WEDNESDAY

4-3-91

6:35 PM

Left SPIDER 28 RPM ICCW

Turned off 5 MT's

Turned off 5 BB's

} Pointed into GROUND

Barometer 30.00

R.H. 64%

TODAY WAS CLOUDLESS AND WARM

TOMORROW IS PREDICTED TO BE THE SAME

THURSDAY

4-4-91

9:00 AM

SUNNY AND WARM

STORM FRONT APPROACHING WEST COAST LOOKS

Like IT WILL NOT COME VERY FAR SOUTH. HIGH
PRESSURE WEST OF HERE IS BLOCKING THE TAIL OF
THE FRONT FROM SWINGING DOWN INTO SO. CAL.

LAKE CACTHUMA STILL RISING - AS OF LATE WED.

67,795 ACRE FEET 35.6% FULL

FRIDAY
4-5-91

9:00 AM

TREVOR JUST CALLED AND TOLD ME TO SET UP THE BB'S + MT'S AT 90° AND TO POSSIBLY EXPECT SOME RAIN BY TONIGHT

9:35 AM

Re-set 5 MT's @ 90

Re-set 4 BB's @ 90

10:30 AM

called IVOR AND INFORMED HIM OF OPERATION

6:00 PM

called TREVOR FOR UPDATE: HE SAID FRONT IS MOVING SLOWLY AND WOULD ARRIVE ON SAT OR SUN. RAIN WITH FRONT.

6:15 PM

called IVOR WITH UPDATE

10:00 PM

Barometer 29.90

R. H 75%

5:10 AM

Re-set SPIDER ICCW @ 38 RAM

SATURDAY
4-6-91

9:00 AM

BAROMETER 29.90

R. H. 70%

called Trevor — He says HOLD TIGHT
AND exercise "CREATIVE PATIENCE." FRONT
MOVING VERY SLOWLY — RAIN TO ARRIVE WITH
THE FRONT LATER TODAY or TONIGHT

ALL EQUIPMENT REMAINS SET AS BEFORE
SPIDER REMAINS IN EXPANSION MODE DESPITE
AIR PRESSURE BELOW 29.92

ALL PREDICTIONS SAY NO RAIN FOR
SOUTHERN CALIFORNIA TODAY, TONIGHT, TOMORROW

9:20 AM

SUNNY AND WARM WITH HAZE AND A
FEW HIGH CLOUDS OVER THE MOUNTAINS

3:00 PM

BAROMETER DROPPING 29.84

R. H. 50%

SKY IS HAZY WITH HIGH, THICK HAZY CLOUDS
TO THE NORTH WEST

5:40 PM

Re-set SPIDER ICCW @ 38 RPM

SATURDAY
4-6-91

5:30 AM

Re-set 5 MT's @ 80°

Re-set 4 BB's @ 80°

TURNED SPIDEE OFF

5:45 AM

CNN RADAR SHOWS FRONT ON MY
DOORSTEP AND STARTING TO MOVE THROUGH

Barometer

29.83

R. H.

59%

6:04 AM

Re-set SPIDEE CW @ 38 RPM

6:15 AM

Barometer

29.825

29.82 Keyt

R. H.

63%

Temp

61°

FRONT DUE THROUGH SB. AT MIDNIGHT
(KeyT weather man LAUCE OROZCO)

8:46 PM

Barometer

29.85

R. H.

73%

SUNDAY
4-7-91

8:00 AM

TURNED OFF SPIDEE UNIT - NO RAIN

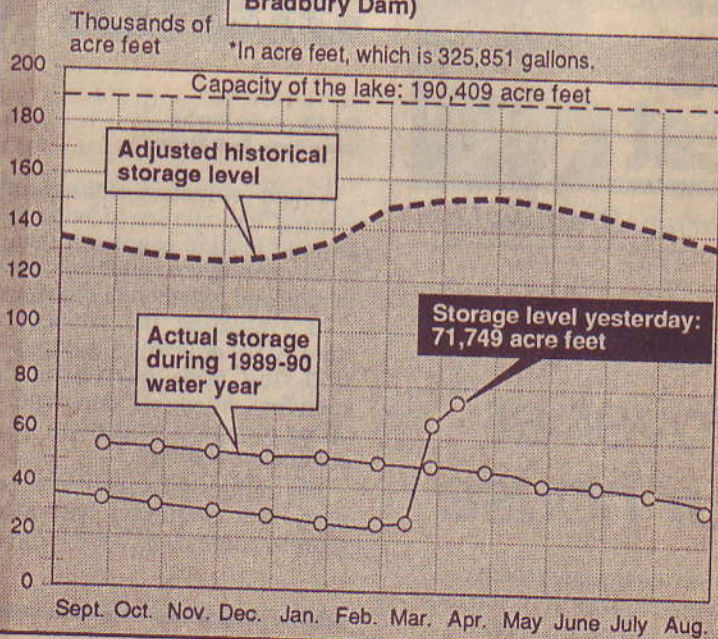
SANTA BARBARA News-Press

THURSDAY APRIL 11, 1991

Lake Cachuma storage levels

This is a weekly chart

	Last week	Previous week	Change
Storage* (on Saturday)	69,888	63,755	+ 6,133
Percent of capacity	36.7	33.5	+ 3.2
Usage* (for week)	129	112	+ 17
Evaporation* (for week)	134.9	81.5	+ 53.4
Rainfall in inches (for week, at Bradbury Dam)	0.05	2.77	- 2.72



Source: Santa Barbara County Water Agency and U.S. Bureau of Reclamation

THURSDAY
4-11-91

10:00 Am

SPOKE WITH TREVOR - He is trying a
new procedure with spider units running

them CW from 9am to 3:30 pm

AND CCLW from 3:30 pm to 9am

Has asked me to join in.

Re-set spider for CW @ 30RPM

4:10 Pm

Re-set spider for CCLW @ 30RPM

5:45 PM

SUN-DOWNERS STARTING

GUSTY WINDS OUT OF THE NORTH PERSISTED FOR ABOUT
1 HOUR

FRIDAY
4-12-91

9:05 Am

Re-set spider for CW @ 30 RPM

6:20 Pm

Re-set spider for CCLW @ 30 RPM

fairly windy this evening



GIBRALTAR

DAM + Reservoir

SUNDAY

APRIL 14, 1991

Reservoir

STILL 100%

FULL AND

SPILLING FROM

ONE SPILL-WAY

(TOP PHOTO)



PHOTOS TAKEN
Between

11:30 AM AND

12:30 PM

FROM ROAD

DOWN TO THE

DAM

SATURDAY
4-13-91

9:20 AM

Re-set SPIDER for CW @ 30 RPM
CLEAR skies
Barometer 30.04
R. H. 74%

5:15 PM

Re-set SPIDER for CCLW @ 30 RPM

10:00 PM

Beautiful CALM, COOL evening
Barometer 29.99
R. H. 78%

SUNDAY
4-14-91

9:10 AM

Re-set SPIDER for CW @ 30 RPM
Barometer 29.98
R. H. 78%

TUESDAY
4-16-91

5:25 PM

Reset SPIDER for CCLW @ 30 RPM
Barometer 29.88
R. H. 53%

SKY Partly Cloudy and clearing from
early OVERCAST

MONDAY
4-15-91

9:30 Am

Re-set SPIDER for CW @ 30 RPM

Re-set SPID 5 mT's @ 70° 34 RPM

Barometer 29.86

R. H. 73%

Skies overcast, cold front due through
Here today - NO RAIN PREDICTED.

4:15 PM

Skies remained overcast most of day

Reset SPIDER for CCLW @ 30 RPM

10:00 PM

Barometer 29.82

R. H. 68%

Reset SPIDER for CCLW @ 30 RPM

TUESDAY
4-16-91

9:45 Am

Reset SPIDER for CW @ 30 RPM

11: Am

Barometer 29.88

R. H. 56%

sky partly cloudy and clearing from
early overcast

Tuesday
4-16-91

12:20 PM

Reset 4 BB's from 80° to 72°

Re-set SPIDER for CW @ 34 RPM

These changes in an attempt to PROVOKE
some RAIN OUT OF A CLOUD MASS NORTH
of THE INSTALLATION (PRIME TARGET ZONE)

2:30 PM

CLOUDS STILL LOOK THREATENING BUT I
DON'T KNOW IF ANY RAIN HAS FALLEN BEHIND
THE MOUNTAINS

BAROMETER 29.88

R. H. 50%

5:10 PM

SKY HAS CLEARED - WIND HAS PICKED UP

Reset 4 BB'S BACK TO 80°

Reset SPIDER for CCLW @ 30 RPM

6:15 PM

"were going to HAVE WEIRD WEATHER THIS WEEK"

PHIL MANN KEYT

"APRIL SHOWERS, maybe By ~~FRIDAY~~ FRIDAY or
SATURDAY"

BAROMETER 29.87

R. H. 47%

Wednesday

4-17-91

9:20 AM

Re-set SPIDER for CW @ 30 RPM

SKY AT sunrise - CLEAR - 10°

12: NOON

CLOUDS BUILDING OVER THE MOUNTAINS ABOUT

Barometer 29.97

R. H. 57%

4:15 PM

Re-set SPIDER for CCW @ 30 RPM

Barometer 29.96

R. H. 50%

THURSDAY

4-18-91

10:30 AM

Reset SPIDER @ CW 3 RPM

5:30 PM

Turned SPIDER off

FRIDAY

4-19-91

7:30 AM

TREVOR CALLED - TOLD me^① THERE ARE chance
GOOD CONDITIONS FOR RAIN coming in on a
SOUTH FLOW TODAY - ^②BRING BB'S + MT'S
AROUND TO 10° AND TURN SPIDER ON AT 1 PM

Wednesday
4-17-91

RC-SET Spider for CW @ 30RM
SKY AT sunrise - CLEAR

1:10 AM

1:15 noon



5 MT's (on roof-rack) sitting
on a bluff above downtown
Santa Barbara 4-25-91

Thursday
4-18-91

Friday
4-19-91

around 10° and took spider on at 1 PM
South flow today - @ bring B's + MT's
good conditions for rain coming in on a
Trevor called - told me there are

7:30 AM

FRIDAY
4-19-91

8:00 Am

SPIDER still off
Re-set SMT's + 4 BB's @ 10°

9:30 Am

SPOKE WITH IVOR JOHN - TOLD HIM ABOUT
THE OPERATION AND WHAT TREVOR TOLD ME ABOUT
THE "SOUTH FLOW" - HE SAID THAT INSPITE OF THE
FACT OF THE COLD FRONT APPROACHING FROM THE WEST,
THERE IS ALSO AN INGRESS OF SUB-TROPICAL
MOISTURE COMING UP FROM THE SOUTH, LEADING ITSELF
WELL TO THE "SOUTH FLOW" IDEA

10:00 Am

CLOUDS BUILDING OVER MOUNTAINS
High overcast moving W → E

1:20 PM

Re-set SPIDER for CW @ 30 RPM

SKY overcast

Barometer 29.96

R. H. 53%

2:00 PM

SKY overcast 360°

Slight breeze out of the South

Ocean glassy

2:23 PM

ANNOUNCER ON KMGQ RADIO "STILL A SLIGHT CHANCE
OF RAIN BY Tomorrow morning, 30% CHANCE."

FRIDAY
4-19-91

4:40 PM

WIND OUT OF THE SOUTH @ 25 RPM

Barometer 29.94

R.H. 54%

9:30 PM

Clear Sky

Spoke with Trevor - He WASN'T ABLE to get
IN TOUCH WITH THE OTHER INSTALLATIONS in So. CAL.
UNTIL 5 PM - He says - Leave everything AS IS.

Barometer 29.96

R.H. 73%

SATURDAY
4-20-91

9:20 AM

Barometer 29.97

R.H. 71%

TOTAL overcast - RAIN Predicted for THIS
Afternoon - NO RAIN fell LAST NIGHT

9:40 AM

Light RAIN Begins

12:10 PM

Barometer 29.98

R.H. 63%

RAIN AT CHINO 0.025"

RAIN HAS STOPPED

SATURDAY
4-20-91

1:00 PM

Re-set SPIDER for CW @ 25 RPM (SPARROW)

MOUNTED MT'S ON CAR -

PLAN TO DRIVE TO CARPINTERIA ON 101

TURN AROUND AND DRIVE WEST ON 101 TO

Left CEC AT 1:10 PM

1:32 PM

TURNING BACK AT BAILARD AVE, CARPINTERIA

1:43 PM

A few DROPLETS ON WINDSHIELD

1:48 PM

STOPPED AT LIGHTS

1:56 PM

SUN PEELS OUT AT TURNPIKE Rd

2:09 PM

TURNING BACK AT DOS PUEBLOS Cyn Rd,

2:23 PM

off 101 AT STATE ST

2:26 PM

PARK CAR AT MPLS

3:50 PM

Leaving MPL's DRIVING THROUGH TOWN TO CEC.

4:12 PM

ARRIVE AT CEC

Re-set 5 MT'S for 10°

4:20 PM

TURNED SPIDER off



SPARROW UNIT
4-25-91



SPIDER MK-2 DOWN IN OLD
CEMENT HOT TUB AT CEC.
4-25-91

Tuesday
4-23-91

7:30 PM

INSTALLED MK-1 @ 225° (SPARROW)

BAROMETER 29.90

R.H. 67% ON SPID @ 30 RPM

Reset 4 BB's + 5 AT's @ 90°

BAROMETER 29.81

R.H. 48%

Wednesday
4-24-91

10:00 AM

Reset SPARROW @ 180° After TALK
WITH TREVOR

~~Thursday~~ Friday
4-26-91

5:50 AM

TURNED OFF SPARROW - Detached cone and
Drove TO SANTA ROSA with cone facing forward.

Wednesday
5-1-91

2:00 PM

Drove from ALAMEDA TO S.B. with cone
facing forward - arrive S.B. 7:20 PM.

Thursday
5-2-91

9:40 AM

Re-started SPARROW @ 180°

Wednesday
5-8-91

7:00 AM

SPOKE WITH TREVOR

TURNED OFF SPARROW

TURNED ON SPIDER CW @ 30 RPM

RESET 4 BB'S + 5 MT'S @ 90°

BAROMETER 29.81

R. H. 48%

Friday
5-10-91

2:00 PM

TREVOR ARRIVED AT 12:30 PM WITH SOME
FRESH LIGHT BULBS WHICH WE INSTALLED AT
CEC

— RE-SET SPIDER CCW @ 18 RPM (12:45 PM)

WE ATE LUNCH AND HE DESCRIBED FOR ME
VARIOUS DEVICES HE HAS USED RECENTLY

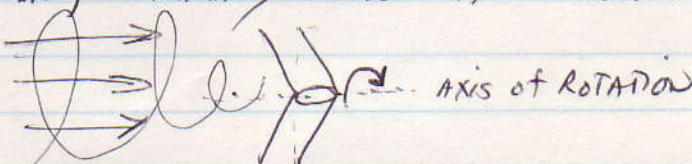
"SKIMMER", 4" "TERMITE"

SKIMMER IS 2 45° CONES WITH V.B.

AT APEX. TERMITE IS 2 90° CONES WITH

V.B AT APEX

BEST USE FOR SKIMMER IS ROTATED WITH BASE
FACING PRIMARY FLOW AS SHOWN — THIS



PRODUCES

A SUCTION

VORTEX BACK

INTO THE FLOW. THIS FLOW CAN THEN BE FED INTO
A SPIDER'S VERTICLE VORTICES FOR INCREASED ACTION.

LA. Times MONDAY MAY 13, 1991

Pollution Kills 60,000 Yearly, Study Says

ANAHEIM—Exposure to air pollution in U.S. cities accounts for 60,000 deaths annually and increases the risk of death among the elderly and people with lung and heart diseases, researchers said Sunday.

"If we as a nation can focus on reducing emissions, we can save more lives and taxpayers' money than with any other single effort to reduce toxic exposure in the environment," said Dr. Douglas Dockery, associate professor of environmental epidemiology at the Harvard School of Public Health.

Dockery, with Dr. Joel Schwartz of the Environmental Protection Agency, conducted a study of air pollution in Philadelphia and the causes of death from 1973 to 1980. Their results were presented here Sunday at the 1991 International Conference of the American Lung Assn.

The estimated 60,000 deaths attributed to air pollution account for 3% of deaths nationwide. Those related to air pollution occurred at levels of total suspended particulates below clean air standards set by the EPA, the researchers said.

Mortality increased by 7% with each 100 micrograms-per-cubic-meter increase in total suspended particulates, and by 5% with each 100-microgram increase in sulfur dioxide, the study found.

The study revealed that the impact of an increase in particulate concentrations was about three times as great in persons over 65 as in those under 65.

For people dying from asthma, bronchitis or chronic obstructive lung disease, the death rate was triple the increase in deaths from all causes.

—Associated Press

WEDNESDAY
5-22-91

4:30 PM

TURNED OFF SPIDER UNIT

Removed Power supply in preparation
for a complete removal of ALL equipment
ON SATURDAY (5-25-91)

THIS ENDS FORMAL OPERATIONS AT THE
GILDEA RESOURCE CENTER FOR THIS RAINY
SEASON 1990-91, SANTA BARBARA, CALIFORNIA

THIS WEATHER STATION IS BEING PUT IN STORAGE
IN PREPARATION FOR ME TO LEAVE FOR SINGAPORE
IN ABOUT 3 WEEKS TO GO TO WORK FOR

TJC/ATMOS ENGINEERING TO FILL A RESERVOIR
ABOVE THE CITY OF MELAKA, MALAYSIA.

NO FURTHER ENTRIES WILL BE ENTERED IN
THIS LOG EXCEPT MISCELLANEOUS TID-BITS.

Peter A. Lindeman
5-22-91