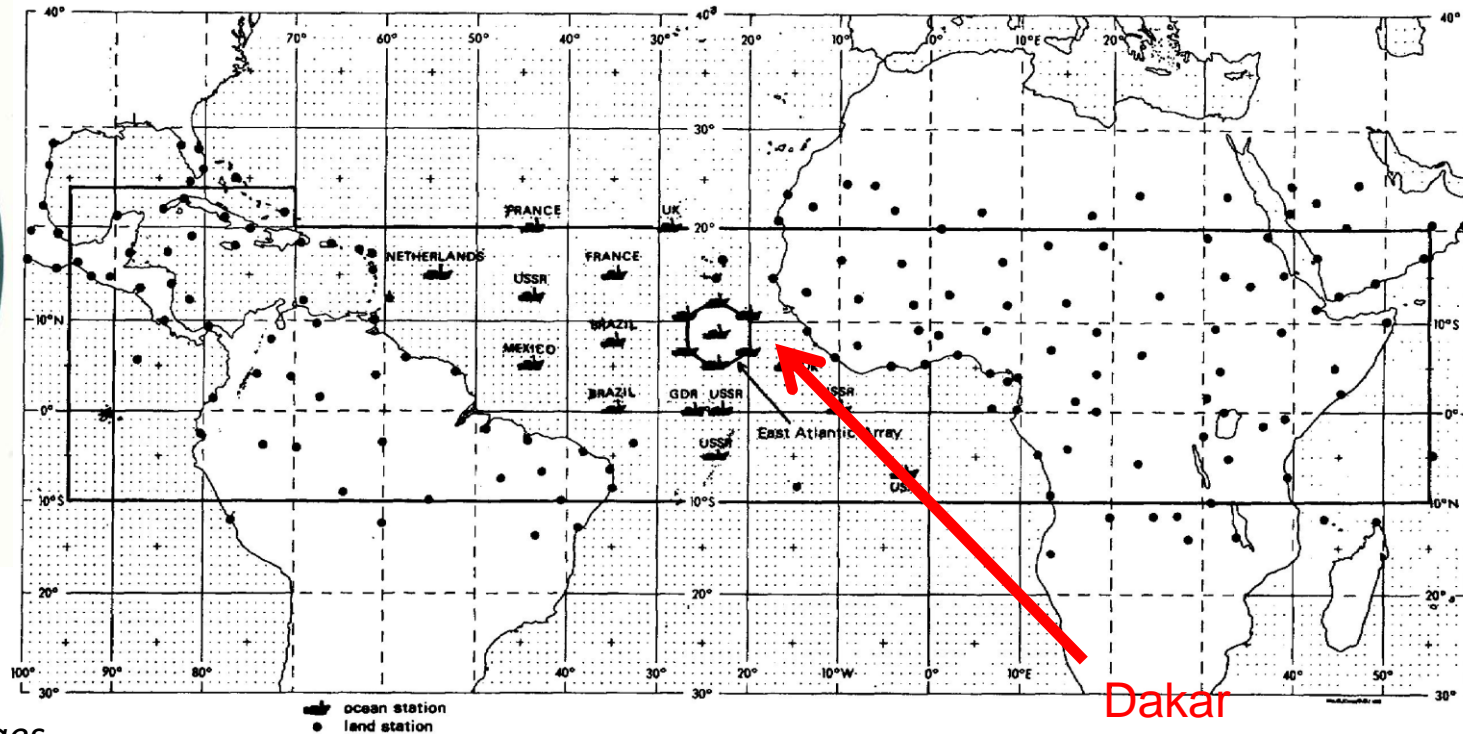


GATE IN PICTURES



Compiled by
Margaret A. LeMone
*(Contributors on individual pages
and at the end)*



72 Countries
13 Aircraft
40 Ships

Three months in Dakar, Senegal



And many other agencies

GATE 50th Reunion -- 1 February 2024

INSTRUMENT CALIBRATION

Ship Intercomparison between observing phases: On the NOAA ship *Oceanographer*

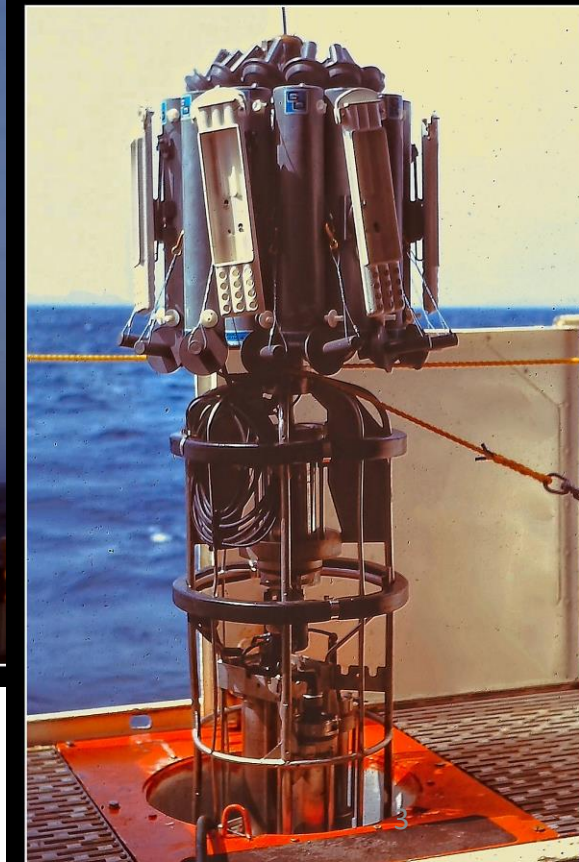
Left to right

Tethered balloon prepared for launch

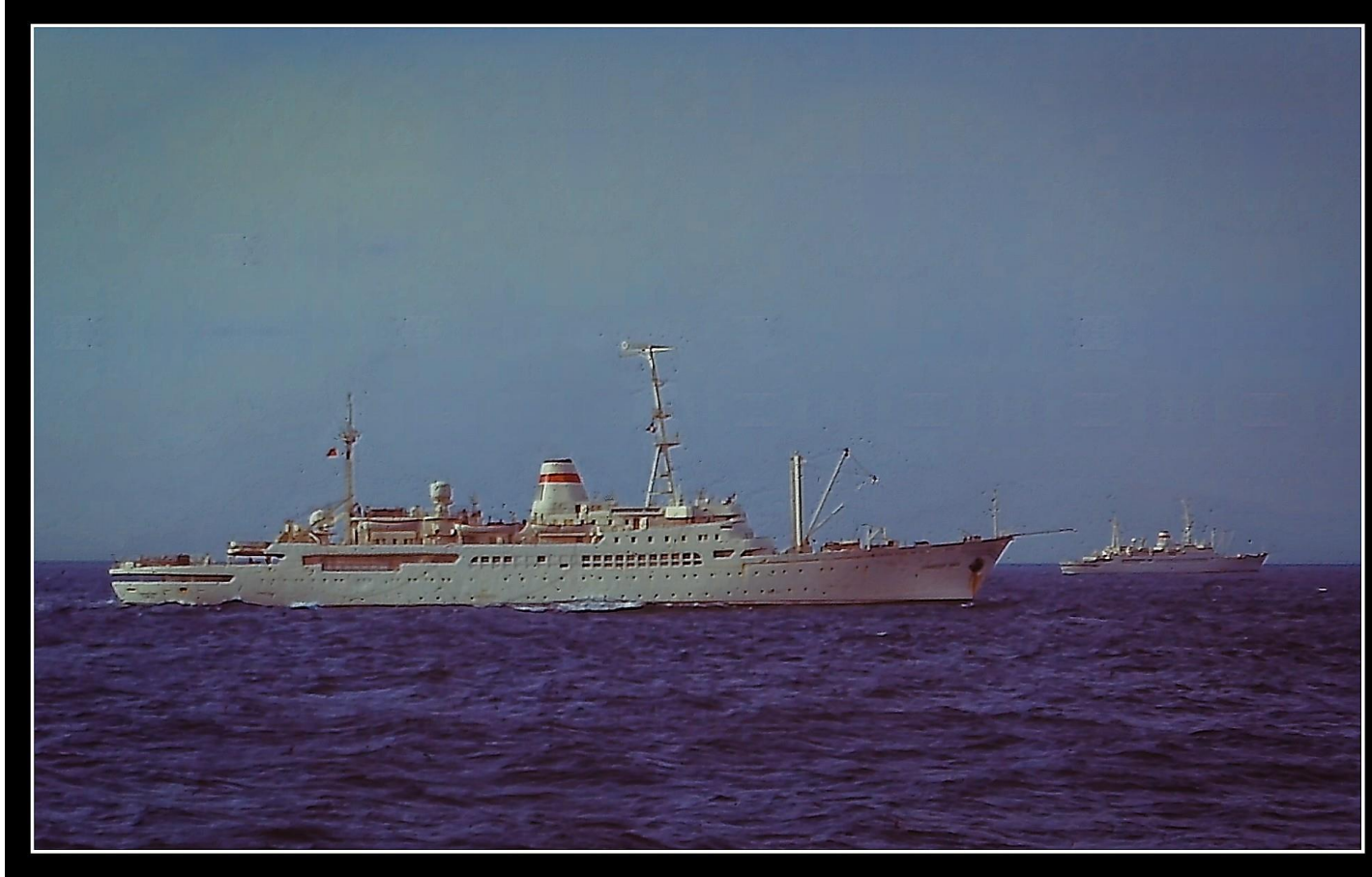
Instruments on tether

Radiosonde being launched

STD (salinity-temperature-depth
instrument



Ship Intercomparison: Soviet ship near the NOAA ship Oceanographer



Ward Seguin

Aircraft flybys at Thiès Tower

The
Tower

Thiès calibration fly-by
USSR Ilyushin-18





Gust-Probe Intercomparison: (Left to Right) UK-C130, NOAA-DC-6, NCAR Electra

A TYPICAL DAY

The day starts and ends here – the GATE Operational Control Center*



Rick Hollenbeck

*A third-order acronym, with GATE the (Global Atmospheric Research Programme) Atlantic Tropical Experiment

Waiting for the bus to the GOCC



GATE students, at the Sunugal Hotel

From José Meitín via Frank Marks (photographer unknown)

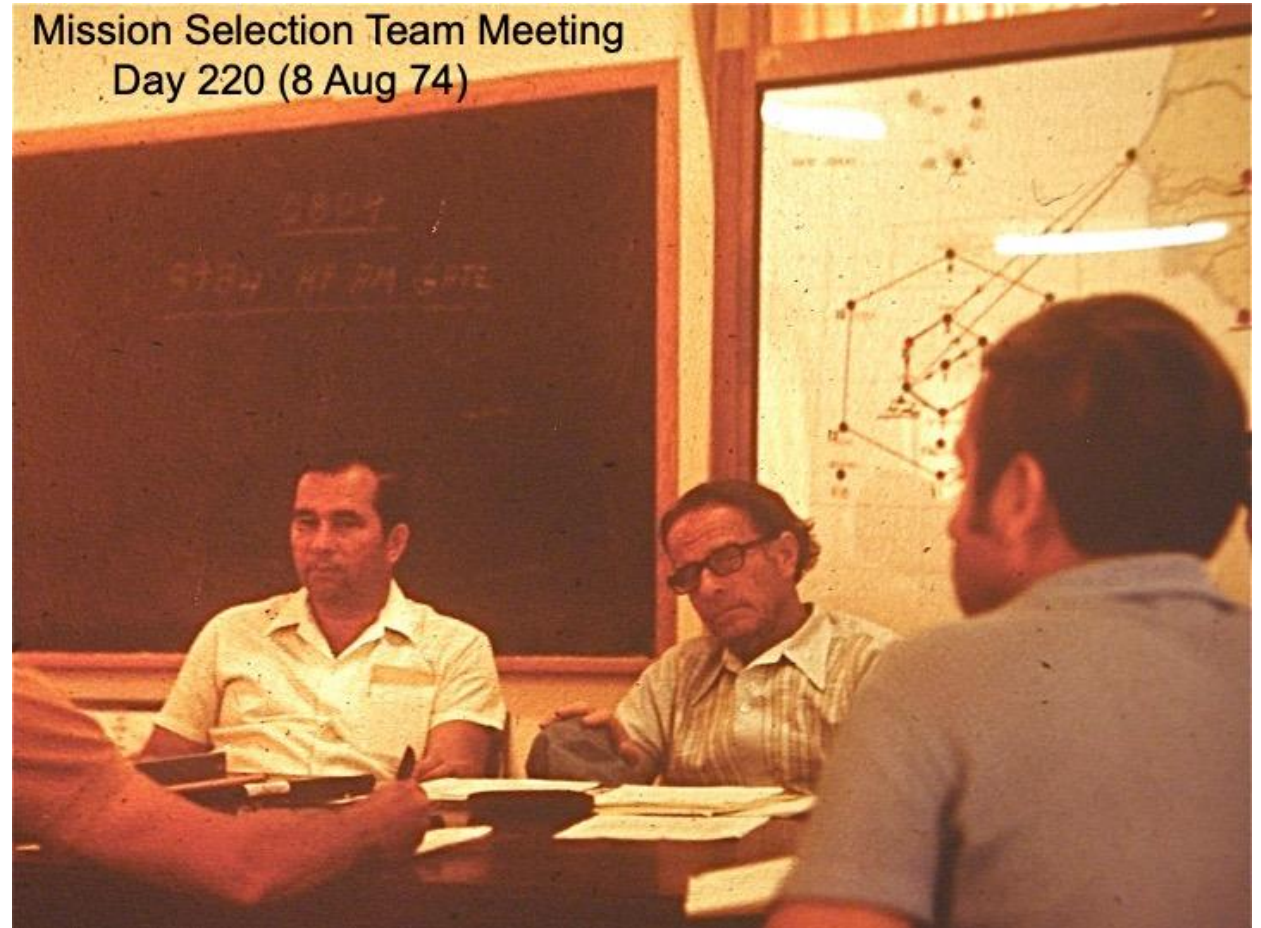
Mission Selection Team (MST) Meeting

- Weather Briefing (Bob Burpee)
- Summary of previous missions (to identify gaps)
- Status of Aircraft, Ships, etc.
- Suggestions for day's mission
- Reaching consensus on mission
- Mission Scientist, Airborne Mission Scientist, etc. assigned.

MST members shown

Joachim Kuettner (USA)

Yuri Tarbaev (USSR)



Courtesy of Ed Zipser

Left to Right: Yuri Tarbaev, Joach Kuettner

Dick Reed before the Mission Selection Team Meeting



Peggy LeMone photo

Reed (USA) representing Experiment Review Board of the JOC,* provided advice to the Mission Selection Team

*Joint Organizing Committee,

A. Borovikov (USSR. Right) talks with Tarbaev after the Mission Selection Team meeting

Status of GATE ships, etc. is posted in the front of the room.



MISSION PLANNING



Schur (USSR), Helmut Weickmann (USA), ?,
Boris Pikhanov (USSR), Yuri Tarbaev (USSR)



Joanne Simpson, Bob Grossman

ON THE MISSION

ON THE MISSION:

ONE OBJECTIVE: MESOSCALE CONVECTIVE SYSTEMS



AS SEEN FROM THE *RESEARCHER*

Bob Houze

KC-135



Noel LaSeur



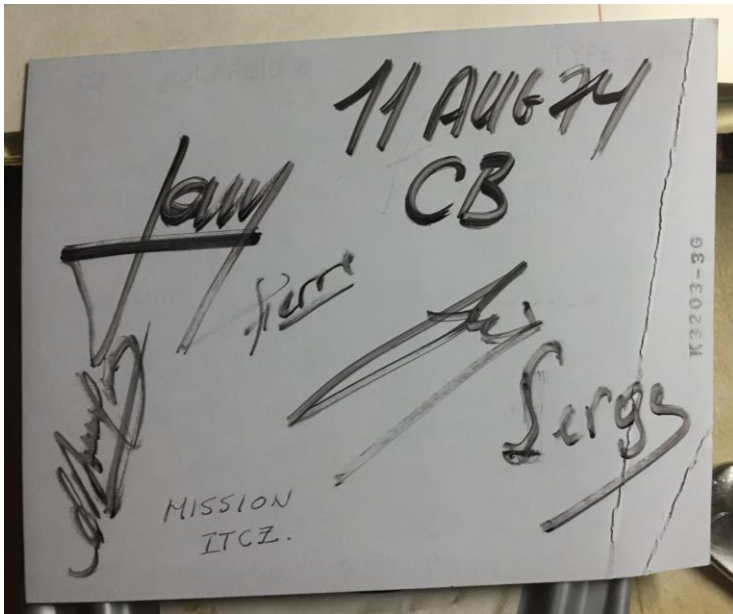
Bob Simpson



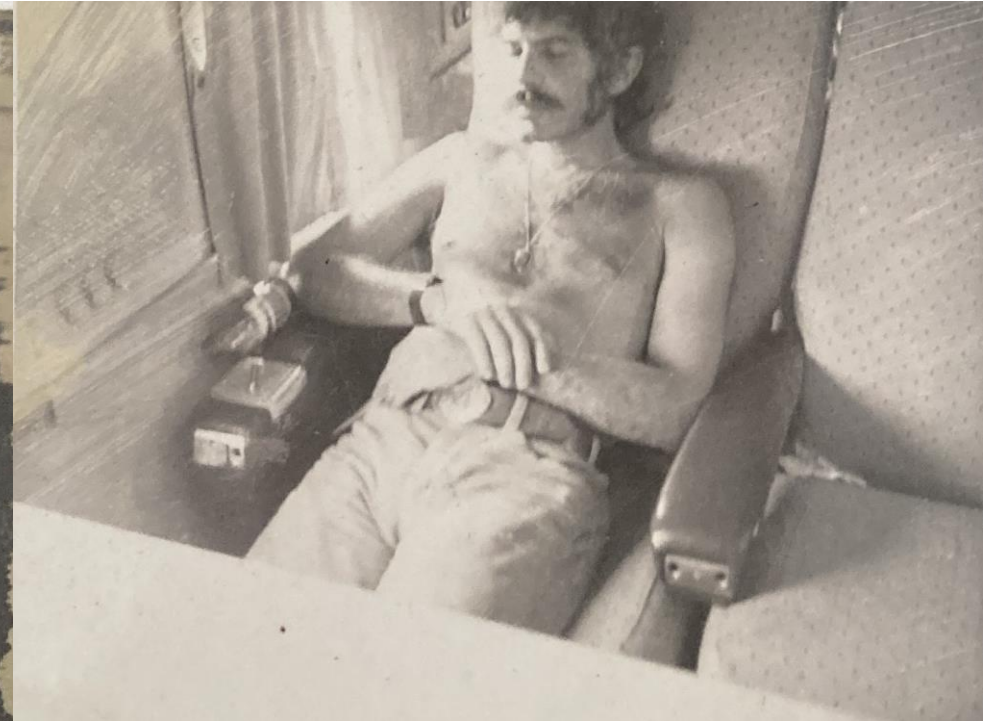
Mission Accomplished:
Bob Simpson Center, PK Govind to right

DC-7 ITCZ Mission

Peggy LeMone with ...
(people who signed back of the
picture)



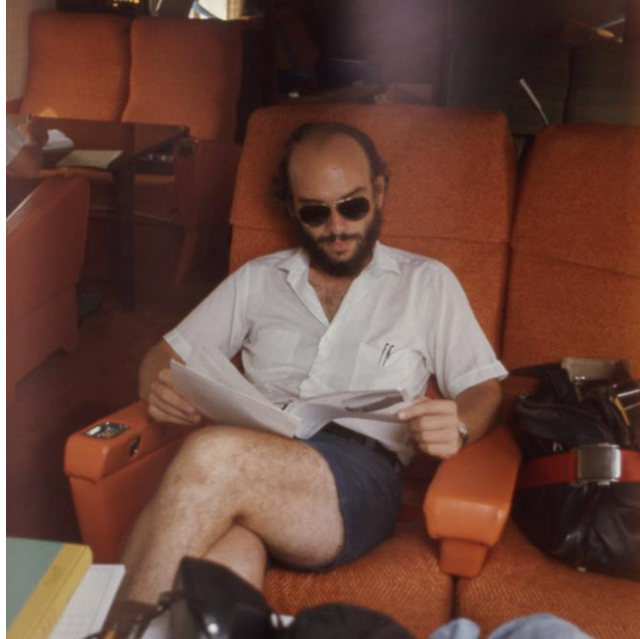
DC-7 Mission



Good meal with alcohol + long days →
a good (and frequently sought after)
example of a scientist caught napping.

Bob Grossman with “Charlie Brown,” enjoying a famous
DC-7 dinner at 150 m msl (with apéritif and beer or wine.
The bottle to left is beer from Strasbourg.)

L-188 (AKA Tweety Bird AKA 595-KR)



Joe Prospero



Left to Right: Soviet Scientists Michael Prokoviev,
Victor Tolkachov, Vladimir (Volodia) Ivanov, LeMone



Bill Pennell (L) and Bob Grossman (R)

Flying past ships and aircraft

HMS Hecla (UK)
with Boundary-Layer Instrumentation System (BLIS)
balloon



French DC-7 during in-flight intercomparison
(likely from Electra during ferry, shortly after takeoff)



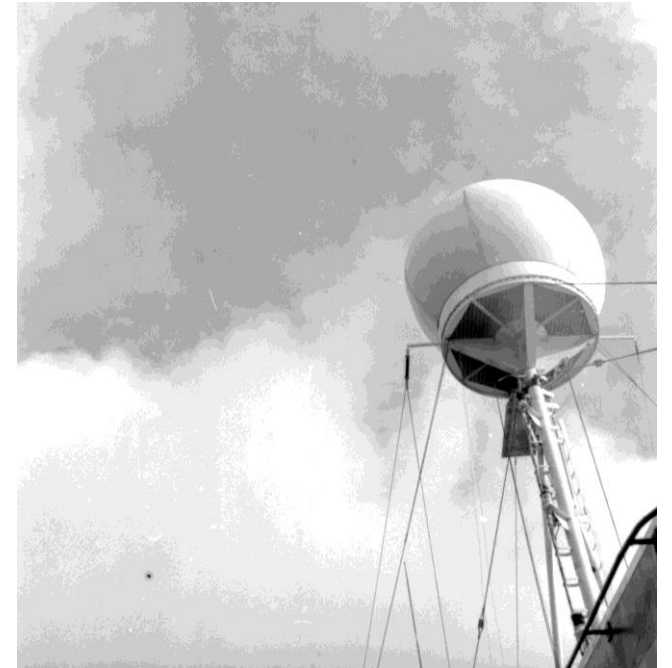
Ship Observations (from the *Gillis*)

Surface parameters (on bow)



Preparing radiosonde for release

GATE 50th Reunion -- 1 February 2024



Radar Antenna

Rick Hollenbeck

Return to Dakar – and debriefing



Back from a Boundary Layer Mission
Roland Stull (left) and Peggy LeMone (right);
accompanying giraffe by preschooler Patrick Gilman



Debriefing: Left to right: Dick Cormack,
Neil Kelley, Peggy LeMone, Bill Pennell
(all from NCAR)

NCAR photos

Debriefing done, time to go home. Waiting for the bus.



Crowd waiting for the bus back to the Diorama or Ngor.

Center: Bob Grossman (blue shirt); Ed Zipser (green plaid shirt)

GATE 50th Reunion -- 1 February 2024

Sunset back home at the Hôtel Diorama after a successful day



AT DAKAR-YOFF

(BETWEEN MISSIONS)

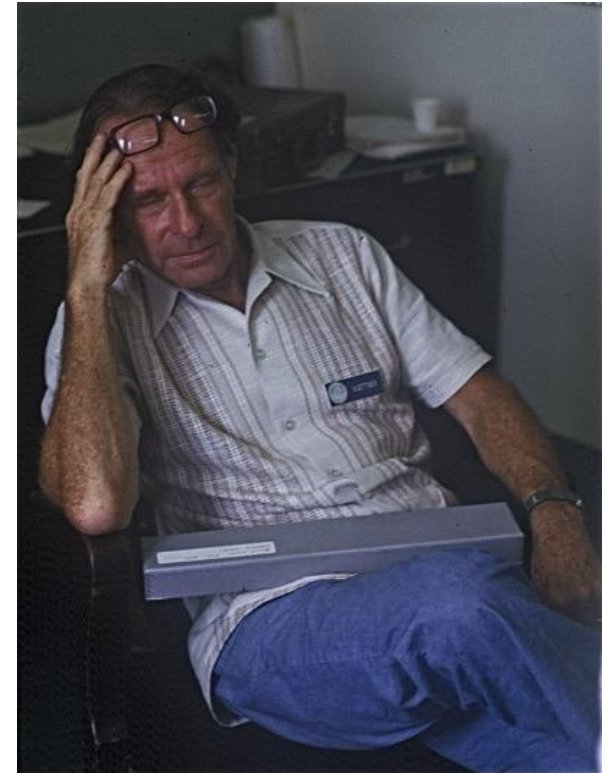


Zipser ready for a “black-tie” event

GOCC



Yves Tourre hard at work with Jim Rasmussen



Joach Kuettnr deep in thought. (or just plain tired, like the rest of us)



Georges Dhonneur, director of the ASECNA Research Center explaining something.

Pat Jones, NCAR





SCIENTISTS+ CREW NEXT TO KC-135, 11 Aug 74: L to R #1. PK Govind; #3. Brad Bean?;
#6. Herb Riehl, #7: Noel LaSeur, #8 Bob Simpson – from Ron Holle



SCIENTISTS+ CREW NEXT TO KC-135 on 10 Aug 1974: L to R #3. Bob Simpson, #4 (Partially Hidden). Bill Gray?; far right, PK Govind – Ron Holle photo

GATE 50th Reunion -- 1 February 2024

APRÈS GATE

(GETTING THE SCIENCE DONE)

GATE WORKSHOP, NCAR, 1977



GATE Workshop, July-August 1977.

Standing: (left) Ernst Augstein (Max-Planck Institute, Hamburg); (right) Peggy LeMone (NCAR)

Seated in first row (guesses): Steve Nicholls (in front of Augstein), Steve Esbensen, John Young



SOVIET SCIENTISTS AT NCAR: L to R: Al Miller,
Melnichuk, Shur, Ed Zipser, Peggy LeMone



On visit to NCAR,
Steve Nicholls (UK) shows
the results of LES of
10 September 1974 case
(Alan Bett's birthday)

AIRCRAFT

Aircraft on Tarmac: NASA CV-990 to left of Rainbow which ends at the left of the two Soviet IL-18 aircraft



How would we develop any confidence that the data from all these aircraft could be trusted?
(1) Tower fly-bys, and (2) In-flight intercomparisons.

US NSF/NCAR Electra aka “595 Kilo Romeo” or “Tweety Bird”



NCAR photo?

US NOAA-DC-6
aka “39-Charlie”



US NOAA-C-130 aka “41 Charlie” Dave Emmitt Photo



NOAA photo?



NASA CV-990

Carol Stoker photo

NSF/NCAR
Sabreliner



LeMone photo

NSF/NCAR Queen Air



Carol Stoker photo

SHIPS

SHIPS IN PORT

Peggy LeMone collection



Bob Houze

Soviet Ships



Soviet Ships Okean and Poryv



Quadra
Bob Houze



Soviet ship – with stripes on stack





Columbus Iselin

US Coast Guard Cutter *Dallas*



Dave Emmitt

On the *Dallas*



Dave Emmitt attaching
UVA cloud sensor to the
Tethered balloon line



BLIS tethered balloon instruments.
Gary Barnes to right



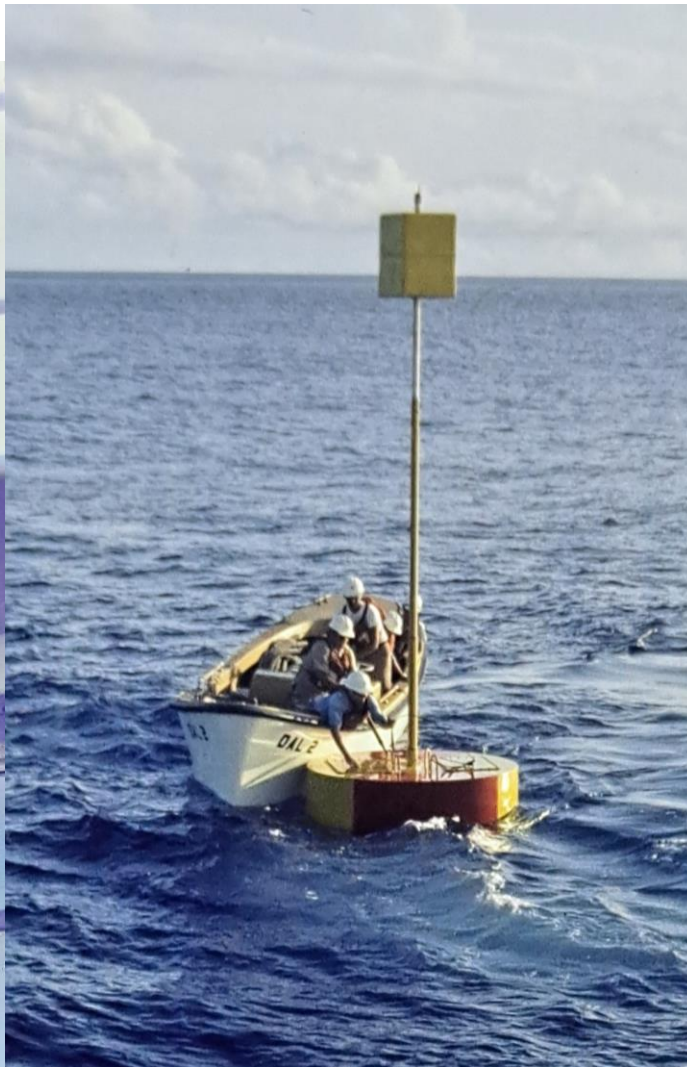
Tethered-balloon instruments calibration
and balance check

BLIS = Boundary Layer Instrument System,
from U Wisc.

On the *Dallas* p. 2



Mike Garstang plus
Reeled in Tethered balloon



Servicing a buoy

Don't forget: There were
oceanographic measurements, too!



XBT sensor

Marine Biology
Sampler



ON THE *GILLIS*



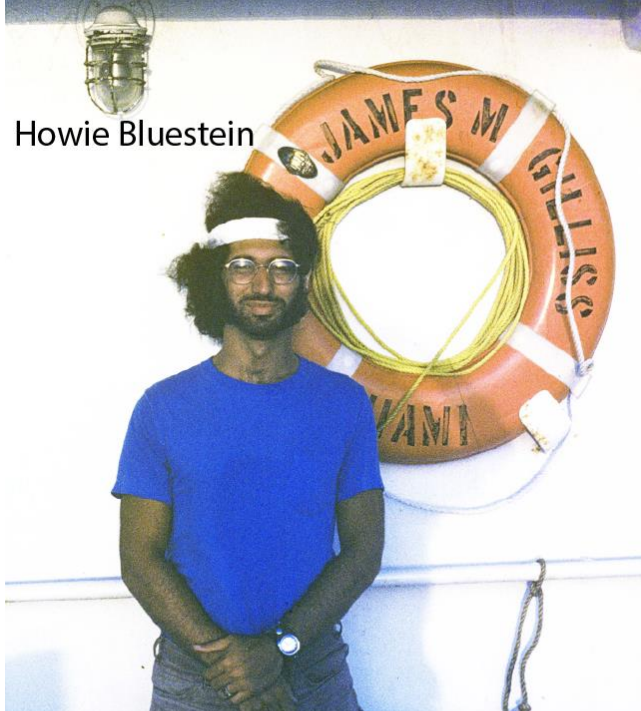
Idle days at sea. Waiting
One of the people is Peter Gross



Air conditioned room for computers

Rick Hollinbeck

Howie Bluestein



Speed Geotis
R. V. Gilliss



of

MORE GILLIS
COURTESY OF H. BLUESTAIN

R. V. Gilliss
photo by
H. Bluestein



R. V. Gilliss
photo
courtesy of
H. Bluestein



WITNESS TO HISTORY

1600s-1800s: The Middle Passage

Gorée Island, from where captured Africans were sent to the Americas and sold into slavery



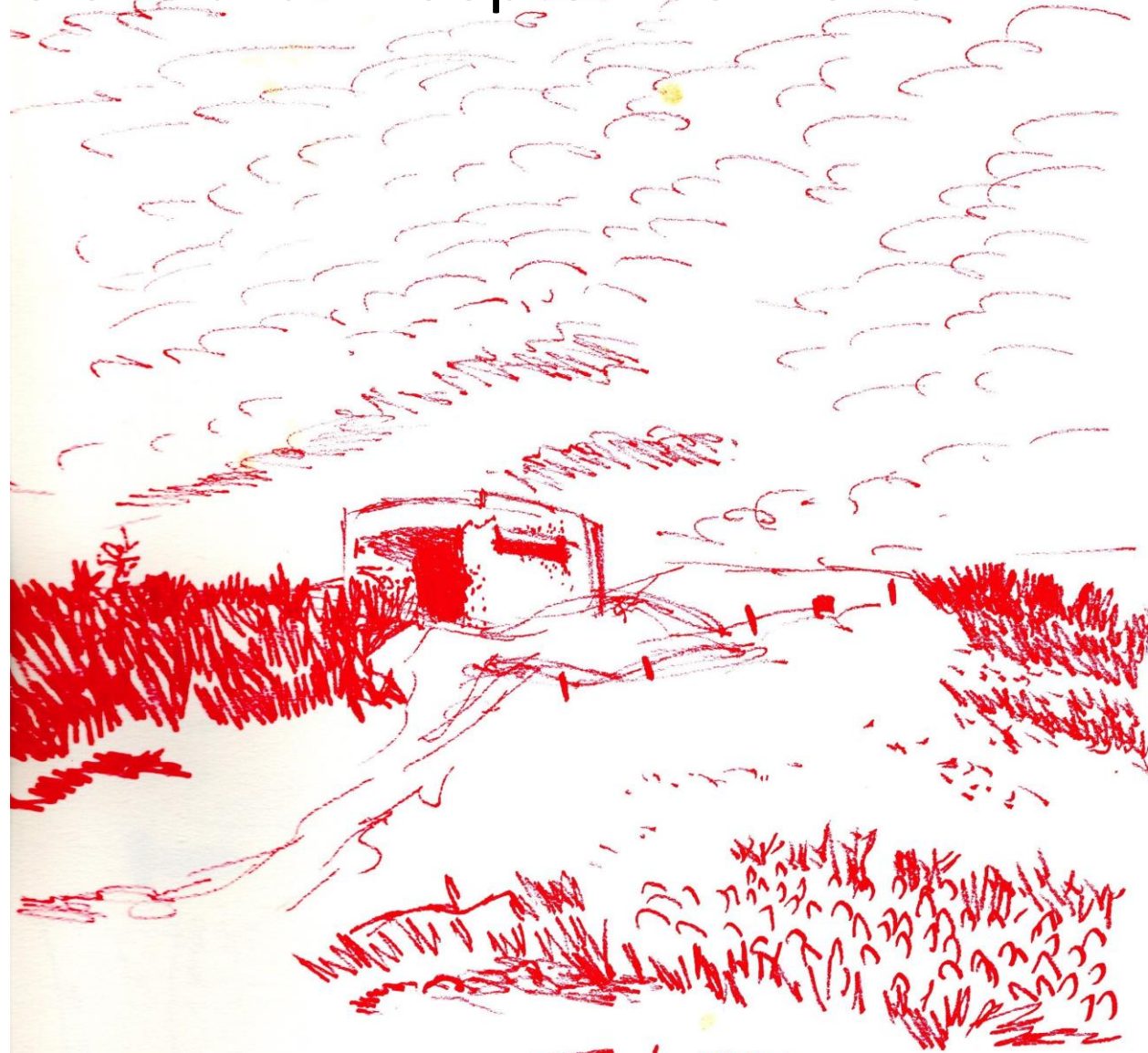
Photo from Senegal, accesses by Bob Houze

On Gorée



Peggy LeMone Photo

Battle of Dakar – September 1940



July 6 1974
m. Rufisque

On seashore, near
Rufisque, south of Dakar,
where Free French troops
led by Charles de Gaulle landed
during WW II but were turned back.

I drew this during a conversation
with a Senegalese man who
learned English from
American soldiers, while at a party
for GATE Americans given by
American Embassy wives

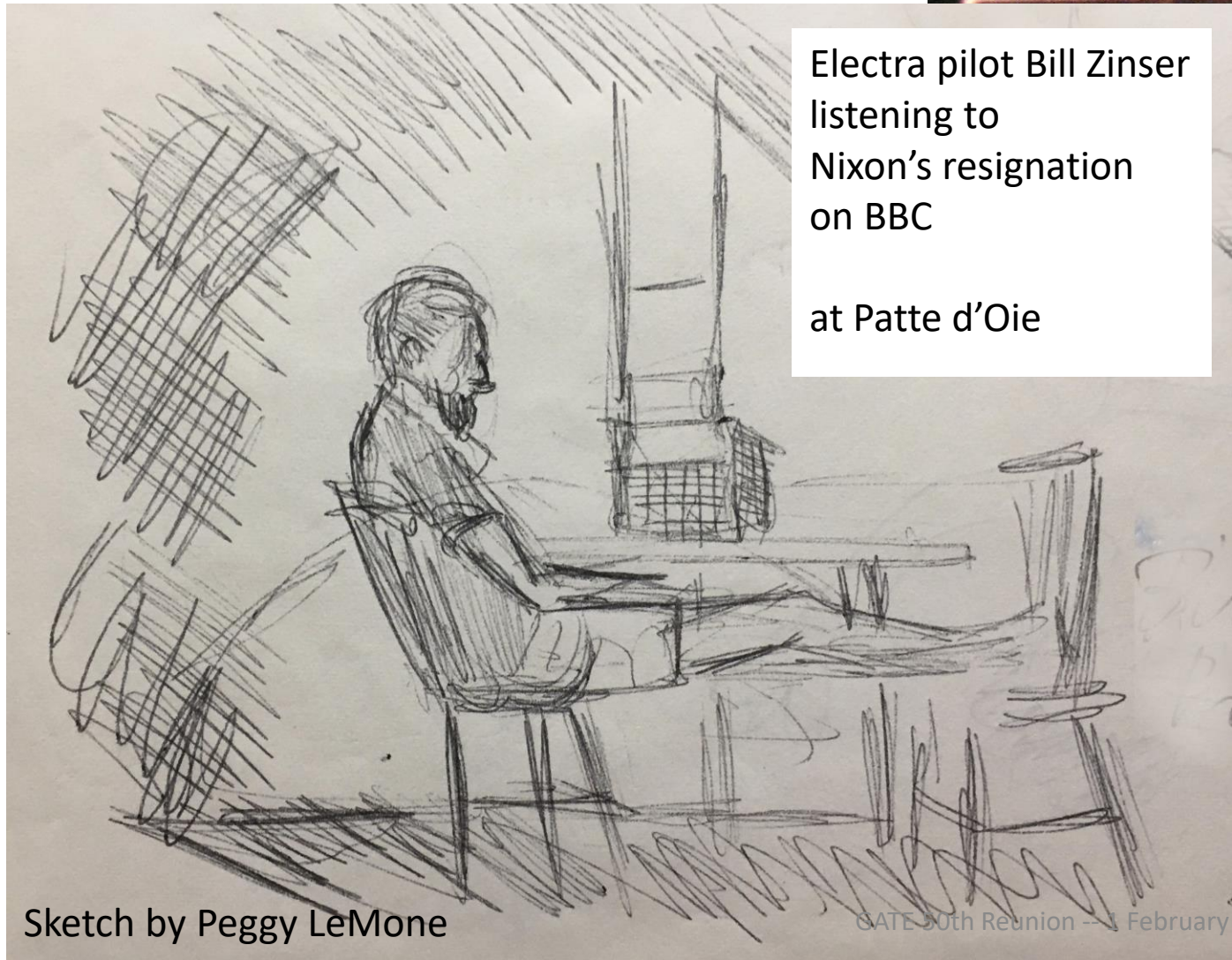
I was going to change to my
bathing suit in the pillbox, but
thought better of it.

Peggy LeMone 21 Dec 2023

Nixon's Resignation: 9 August 1974

Newspaper image: courtesy Ed Zipser

le soleil TRANSLATION:
Nixon Resigns.
The end of a nightmare



Electra pilot Bill Zinser
listening to
Nixon's resignation
on BBC

at Patte d'Oie

Sketch by Peggy LeMone

Dakar and vicinity in 1974



At the market...Ed Zipser, Peggy LeMone, Mary Pennell

Soviet flag joins that of Senegal and the U.N. when we all see the Kirov ballet commemorate poet Alexandr Pushkin (born 175 years earlier), whose maternal great-grandfather was from Africa



Peggy LeMone Photo



Countryside

GAPE 50th Reunion — 1 February 2024

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Acknowledgments

GATE PARTICIPANTS

(who supplied info
and/or photos)

Gary Barnes
Howie Bluestein
Dave Emmitt
Bob Grossman
Mike Garstang
Rick Hollinbeck
Bob Houze
Ron Holle
Frank Marks
José Meitín
Bill Pennell
Ward Seguin
Carol Stoker
Yves Tourre
Ed Zipser

NSF/NCAR STAFF

Laura Hoff (Archivist)
Linda Cully (EOL, maintains field-program web sites)
Steve Williams (EOL, maintains field-program web sites)
Robyn Tye (MMM, who was my tech helper and teacher)

GATE Participants

The 72 nations participating
The scientists and crews of the GATE ships
The scientists and crews of the GATE aircraft
The administrative, scientific and technical staff at the GOCC
The GATE drivers
The medical support staff
Those who evaluated, corrected, and analyzed GATE data
The many people and agencies who proposed, planned, and funded GATE

Compiled by Peggy LeMone for GATE reunion at 104th AMS Annual meeting

