

General pattern for color groups:

1954 Grouping

Color

Group Leader

General Grouping

Red

J. H. Collins

V.I.P. - civilian and military
Congress Groups - Chamber of
Commerce members and staff

White

L. A. Rodert

Airlines, CAA and CAB - weather
groups - Cleveland V.I.P.

Blue

L. C. Gibbons

AEC and related groups - oil
companies - chemical groups

Green

D. D. Wyatt

Aerodynamic - aircraft companies,
etc. - compressor & turbine
companies on 3rd day

Brown

B. T. Lundin

Air Res. & Dev. Command and
related groups (Aro, Sverdrup &
Parcel, etc.) Local airline and
and railroad representatives -
Local Government agencies

Gold

H. C. Barnett

Oil and chemical companies -
Colleges and universities

Tan

W. K. Ritter

Colleges and universities -
Press group on 3rd day

Gray

C. Kemper

Engine and related companies

Note: Military, Clevelanders and contractor groups are to be **divided** among
the eight groups.

M. L. S.

1954 Triennial Inspection
Lewis Flight Propulsion Laboratory

Index of Talks

Welcoming Remarks

Dr. Hugh L. Dryden June 2
Dr. John F. Victory June 3 and 4 (see transcription)

Introduction

Eugene J. Manganiello

Aircraft Operating Problems Research

Part I Jet Aircraft Crash Fire Research
 by I. Irving Pinkel and Solomon Weiss

Part II Absorption of Crash Impact Loads
 by Gerard J. Pesman and Dugald O. Black

Part III Jet Thrust Reversal
 by G. Merritt Preston and Robert C. Kohl

Research Problems in Nuclear Propulsion

Part I Nuclear Power Plants and Shielding
 by Donald Bogart, Frank E. Rom, and Robert R. McCreedy

Part II Reactor Heat Transfer
 by William H. Wachtl, Warren H. Lowdermilk, and
 Armin F. Lietzke

Part III Reactor Materials Problems
 by Robert A. Lad, Burt M. Rosenbaum, and Robert W. Hall

Compressor Research

Part I Advanced Compressor Design
 by Harold B. Finger and Robert E. English

Part II Rotating Stall and Blade Vibration Problems
 by Francis C. Schwenk and James J. Kramer

Part III Demonstration of Rotating Stall and Blade Vibration
 in an Advanced Compressor
 by Robert R. Ziemer and William H. Robbins

Combustion and Fuels Research

- Part I High-Output Turbojet Combustors
by Wilfred E. Scull and Richard H. Donlon
- Part II Special Fuels
by Irving A. Goodman and Eugene E. Dangle
- Part III Afterburner Screech
by Warren C. Rayle and Leonard K. Tower

Full-Scale Engine Research

- Part I Research Techniques and Facilities
by E. W. Conrad and Martin J. Saari, Jr.
- Part II Flight Testing of Full-Scale Ram-Jet Engines
by John H. Disher and Leonard Rabb
- Part III Ram-Jet Controls
by Seymour C. Himmel and Fred A. Wilcox

Structural Effects of Aerodynamic Heating

- Part I The Nature of Aerodynamic Heating Effects
by B. Walter Rosen, Langley Aeronautical Laboratory
- Part II Research Techniques for the Study of Aerodynamic Heating
by Eldon E. Mathauser, Langley Aeronautical Laboratory

Flow Visualization Techniques

- Part I By Victor I. Stevens and Alvin J. Sacks
Ames Aeronautical Laboratory
- Part II By Jackson H. Stalder, Ames Aeronautical Laboratory
and Charles J. Michels, Lewis Flight Propulsion
Laboratory

Research Newsreel - Color Sound Movie

Prepared by Dr. Franklin K. Moore and Arthur L. Laufman
Narrated by Willson H. Hunter (not transcribed)

Reproductions of Slides and Charts
and Photographs of Stages and Models
Used by the Speakers in the 1954 Triennial Inspection

1. Aircraft Operating Problems Research

C-36020 Over-all view of Stage - Flight Hangar - (G. M. Preston)
CS-8891 Crash Loads
C-35937 Light Airplane Crash Studies - color transparency
CS-8894 Effect of Thrust on Landing Run

2. Research Problems in Nuclear Propulsion

C-36013 Over-all View of Stage - M & S Bldg. Room 4 - (Royal
Schweiger)
C-35911 Comparison of Nuclear and Chemical Fuels
C-35910 Reactor
C-35907 Direct Air Cycle (Typical Turbojet Engine)
C-35913 Direct Air Cycle (Turbojet with Reactor)
C-35905 Liquid-Cooled Reactor Cycle (with Turbojet)
C-35906 Comparison of Possible Coolants
C-35908 Heat Exchanger Configurations
C-35909 Capture Cross Sections of Representative Materials
C-35870 Corrosion of Structural Materials by a Coolant
C-35871 Mass Transfer of Structural Materials by a Coolant

3. Compressor Research

C-36014 Over-all View of Stage - EPRB #2 - (Harold B. Finger)
C-35915 Methods of Increasing Air Flow
C-35912 Methods of Increasing Pressure Ratio
C-35921 Effect of Mach Number on Efficiency
CS-8851 Turbojet Engine Axial Compressor Casing Failure
CS-8850 Axial Flow Compressor Rotor Failure, Top Stator Removed
CS-8854 Single Airfoil: Design Flow; Off-Design Flow
CS-8852 Uniform Stall
CS-8855 Propagation Stall
CS-8857 Rotating Stall
CS-8906 Oscilloscope Traces

4. Combustion and Fuels Research

C-36016 Over-all View of Stage - ERB, CW-5 - (Wilfred E. Scull)
C-35902 Effect of Air Velocity on Combustion Efficiency
C-35916 Effect of Air Velocity on Pressure Loss
C-36103 Flame Speed of Special Fuels
C-31832 Afterburner Liner Damaged by Screech

5. Full-Scale Engine Research

C-36018 Over-all View of Stage - PSL Shop & Access - (S.C.Himmel)
CS-8904 Objectives of Full-Scale Engine Research
CS-8898 Experimental Techniques
CS-8903 Direct-Connect Technique
CS-8904 Free Jet Technique (Symmetrical) (Bomarc)
CS-8902 Free Jet Installation (Off-Set inlet) (Navajo)
CS-8905 Ram Jet Missile in 8- x 6-foot Supersonic Wind Tunnel
Test Section
CS-890D Launching Techniques

6. Structural Effects of Aerodynamic Heating (Langley)

C-36017 Over-all View of Stage - Reduced Stiffness Demonstration -
8x6 SWT Observation Room - (B. Walter Rosen)
C-36019 Over-all View of Stage - Buckling Demonstration -
8x6 SWT Observation Room - (B. Walter Rosen)
C-35919 Temperature Attainable in Sustained Flight
C-35903 Temperature History
C-35918 Structural Effects of High Temperature and Rapid Heating
C-35904 Most Efficient Plate Material
C-35922 Trajectories of Ballistic Missiles
C-35917 Temperature Attainable in Sustained Flight

7. Flow Visualization Techniques (Ames)

C-36015 Over-all View of Stage - Rm. 11, Instr. Res. Bldg. -
(Victor I. Stevens)
A-19292-1 Objectives of Flow Visualization
A-19292-16a Vapor Screen System
A-19292-3a Vapor Screen Guides Theory
A-19292-3 Shadowgraph of Flow on Missile Model
A-19292-4 Temperamental Nature of Transition
A-19292-5 Schlieren System - Wind Off
A-19292-6 Schlieren System - Wind On
A-19292-7 Schlieren Indicates Shock Strength
A-19292-9b Shocks Influence Directional Stability
A-19292-9a Shocks Influence Longitudinal Stability
A-19292-12 Colored Schlieren System - Wind Off

8. Research Newsreel

No record photograph taken.

1954 Triennial Inspection
Lewis Flight Propulsion Laboratory

PHOTOGRAPHS OF STATIC DISPLAYS NOT FEATURED IN TALKS

C-35968	12-inch Vertical Schlieren (Donald R. Buchele in picture)	Room 11, Instr.Res.Bldg.
C-35967	Six-Inch Interferometer (Donald R. Buchele in picture)	Room 11, Instr.Res.Bldg.
C-35981	Telemeter Receiving Station; Anthropomorphic Dummy	Flight Hangar
C-35980	NACA Ravenna Crash Sites: 1. Area for Investigating Crash Fires. 2. Area for Light Airplane Crash Loads Investigations. 3. Miscellaneous Cameras Used in These Studies. 4. Mitchell Camera on Tripod Showing Installation of Picture Timing Mechanism. (Brace cables for anchoring canopy are shown behind and below display tables.) (Walter J. Bajorek in picture)	Flight Hangar
C-35979	Crash Loads Research (Walter J. Bajorek in picture)	Flight Hangar
C-35978	Fireproof Instrument Box and Installation Photographs (Walter J. Bajorek in picture)	Flight Hangar
C-35876	Crash Fire Investigation	Flight Hangar
C-35974	NACA-Air Line-Air Force Icing Data Collection Program	Flight Hangar
C-35973	High Speed Free Drop Missile; Rocket Powered Missile	Flight Hangar
C-35970	Bearings and Lubricants	Engine Res. Bldg., W-2
C-35971	Blade Fabrication	Engine Res. Bldg., W-2
C-35972	Research Instrumentation	Engine Res. Bldg., W-2
C-35975	Rocket Motor Fabrication	Prop.Sys.Lab. Equip.Bldg.
C-35977	Model Fabrication	Prop.Sys.Lab. Equip.Bldg.
C-35969	Safety	Prop.Sys.Lab. Equip.Bldg.
C-36137	8- x 6-foot Supersonic Wind Tunnel	8x6 SWT Lobby

1954 Triennial Inspection
Lewis Flight Propulsion Laboratory

MISCELLANEOUS PHOTOGRAPHS

C-35869 Visitors in Auditorium, June 2, 1954
C-35878 Visitors in Auditorium, June 3, 1954
C-35880 Visitors in Auditorium, June 4, 1954
C-36021 Overflow Capacity with Television, Room 219

Administration Building

C-36133 Candid Shots at Refreshment Stops
C-36134 Candid Shots at Refreshment Stops
C-36135 Candid Shots at Refreshment Stops
C-36136 Candid Shots at Refreshment Stops
C-36137 Candid Shots at Refreshment Stops

C-35873 Candid Shots in Cafeteria
C-35874 Candid Shots in Cafeteria

Candid Shots of Mechanisms Behind Stages:

C-36077 Power Controls in 8x6 SWT for Langley Demonstration
C-36078 Rear of Center of PSL Shop & Access Stage
C-36079 Rear of Left of PSL Shop & Access Stage
C-36080 Fuel System for CW-5 ERB Afterburner and Ram Jet
C-36081 Compressor Drive for Engine Propeller Research Bldg.
C-36082 Rear of Right of PSL Shop & Access Stage
C-36083 Rear of CW-6 ERB Turbojet Burner Panel

1954 NACA INSPECTION
LEWIS FLIGHT PROPULSION LABORATORY
CLEVELAND, OHIO, JUNE 2, 3, 4, 1954

8:30 a. m. Buses leave Hotels Cleveland and Carter
9:15 a. m. Registration at NACA Administration Building Lobby
9:50 a. m. Welcome and Orientation Talks in Auditorium and Room 219
10:20 a. m. Leave Administration Building in Buses by color groups:

	<u>Red</u>	<u>White</u>	<u>Blue</u>	<u>Gold</u>	<u>Green</u>	<u>Brown</u>	<u>Tan</u>	<u>Grey</u>
COMPRESSOR RESEARCH Engine Propeller Research Building	Start 10:25	Start 10:25	12:25 lunch	12:25 lunch	2:05	2:05	4:05 G	4:05 G
FULL SCALE ENGINE RESEARCH Propulsion Systems Lab. Shop & Access Bldg.	11:00	11:50	Start 10:25	2:05	2:40	4:05 G	3:30	12:25 lunch
STRUCTURAL EFFECTS OF AERODYNAMIC HEATING 8- by 6-foot Supersonic Wind Tunnel	R 11:50	12:25 lunch	11:00	2:40	4:05 G	R 3:30	2:05	Start 10:25
RESEARCH NEWSREEL Propulsion Systems Lab. Equipment Bldg.	12:25 lunch	11:00 R	R 11:50	4:05 G	R 3:30	Start 10:25	2:40 R	2:05
COMBUSTION AND FUELS RESEARCH Engine Research Building	2:05	2:40	4:05 G	R 11:50	12:25 lunch	11:00	Start 10:25	R 3:30
AIRCRAFT OPERATING PROBLEMS RESEARCH Flight Hangar	2:40 R	R 3:30	2:40 R	R 3:30	11:00 R	R 11:50	11:00 R	R 11:50
FLOW VISUALIZATION TECHNIQUES Instrument Research Building	3:30	4:05 G	2:05	Start 10:25	11:50	2:40	12:25 lunch	11:00
RESEARCH PROBLEMS IN NUCLEAR PROPULSION Materials and Stresses Building	4:05 G	2:05	3:30	11:00	Start 10:25	12:25 lunch	11:50	2:40

R - Refreshment Break

G - Get-together at Picnic Grounds

Official Time Schedule

- 8:30 a. m. Buses leave Hotels Cleveland and Carter
- 9:15 a. m. Registration at NACA administration Bldg. Lobby
- 9:50 a. m. Welcome and Orientation Talks in Auditorium and Rm. 219
- 10:20 a. m. Leave Administration Bldg. in buses by color groups.
- 10:25 - 10:55 First Stop
- 11:00 - 11:30 Second Stop
- 11:30 - 11:50 Coffee Break and travel to next stop
- 11:50 - 12:20 Third Stop
- 12:25 - 12:55 Fourth Stop
- 1:00 - 2:00 Luncheon in NACA Cafeteria and Dining Room
- 2:05 - 2:35 Fifth Stop
- 2:40 - 3:10 Sixth Stop
- 3:10 - 3:30 Coca-Cola Break and travel to next stop
- 3:30 - 4:00 Seventh Stop
- 4:05 - 4:35 Eighth Stop
- 4:40 - 7:00 Get-together at NACA Picnic Grounds
- At Will Depart NACA via bus, auto, aircraft