Lewis

WASHINGTON, D.C.
July 6, 1949

13135

100.64

From NACA
To Langley
Ames
Lewis

Subject: Annual Inspection Cleveland Laboratory 1949 - Improved technique in presentations

1. It is desired that those expected to be in charge of the next inspections of the Langley and Ames laboratories attend the inspection of the Lewis Laboratory scheduled for September 20, 21, and 22. At the forthcoming Lewis inspection a major effort will be made to simplify presentation of technical information. This will involve the full preparation of speech material well in advance and its careful editing to eliminate the customary technical terminology in common use but not understood by the majority of our visitors.

2. This decision has been reached after several conferences involving Dr. Dryden and his immediate staff at Headquarters, and is intended to make a greater proportion of the material presented understandable to:

(a) Executives in the aircraft industry and in the military services;

(b) Members of Congress and other Government officials;

(c) Representatives of the Press;

(d) Aeronautical technicians conversant with only their own line of work.

3. At this time it is expected that each presentation will embody the following:

(a) A statement of the problem;

(b) The method of attack;

(c) The results achieved;

(d) The significance of accomplishments reported and the avenues of research to be further explored in that field.

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Wm Hunter

RETURN TO AERL
ADMINISTRATIVE FILES

ACTION COPY

Copies made for F+T, C+T, EP+M, WT+F, Inst. and Hunter. ink 7/14

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3. The forthcoming Lewis experiment will be followed by an analytical conference, at which the constructive comment of the Langley and Ames Laboratories will be desired, with a particular view to determining the character of presentation to be made at the next NACA inspection - that of the Ames Aeronautical Laboratory in July 1950.

J. P. Victory,
Executive Secretary.

JFV:va

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NACA
RECEIVED

L.F. 1

Langley Field, Va.
Date August 3, 1949

15291

100.64/Langley

From Langley
To NACA Lewis

Subject: Notes on the preparation of material for the 1949 Langley Inspection

Reference:

Please take the action indicated below:

A Advise status.
B For your information, proper action, and files.
C For reply by your office.
D Forward (on loan) (for our files).
E Translate for Laboratory files.
X F There ~~(xxx)~~ (are) transmitted herewith the following:
G The following visited the Laboratory on dates given:
H Hold for further information.
I Copy of this letter enclosed with shipment.
J Advise whether order will be placed soon.
K Return catalogs and literature furnished by low bidder.
L Return samples submitted with letter of award.
M Send catalog and price list applying to general schedule.

Remarks: When Messrs. Wilson Hunter and Steve Calmer visited this Laboratory for this year's Inspection they requested information regarding chart preparation and drawings of a new chart stand.

Forwarded herewith are three copies of "Procedure for Preparing Inspection Charts" recently compiled by Mr. J. J. Lankes and a set of prints of the flyleaf type of stand which was used at four stops at this year's Langley Inspection.

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Elec Eng
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Mech Ser
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Prep Reply
Prop Act

for H. J. E. Reid
Director

JJL.lbc

REM

Enc* 3 copies of notes
1 set of prints

EJ

Notes:
1 copy of letter & notes detached for Steve Calmer with prints
" " " " " " " " Art Geoffrion
W H Hunter 8/12/49

RETURN TO LFPL
ADMINISTRATIVE FILES

NACA - Langley

PROCEDURE FOR PREPARING INSPECTION CHARTS

July 30, 1949

INSTRUCTIONS TO AUTHORS IN PREPARING INSPECTION CHARTS

Use work sheets supplied by Technical Illustrating Section for laying out charts. They are 1/4 scale.

Main titles shall be limited to one line, on these 1/4-scale charts main titles are to be 3/8 inch high; subtitles, if any, 5/16 inch high, 3/8 inch clearance below main titles; legends, curve captions, numerals, etc., 1/4 inch high. Please letter this material to scale because writing in data is misleading in regard to space and may result in delaying completion of a chart because of possible necessity of reorganizing or recomposing data. When two or more figures or separate groups of graphs on a chart have separate titles, the figure titles should be placed beneath the figures or, if circumstances permit, at the side. Only the title (and subtitle, if any) should be at the top.

Limit coordinate axes numbers to one or two on each axis. In some cases, numbers may not be required. Ticks may be added along axes for easier visual subdivision. Ticks, by the way, are placed outside coordinate axes, not inside, on inspection charts.

Data should be laid out clearly and to scale. Please compose material as much like the finished chart as possible. Letter all data clearly to avoid misinterpretation of Greek symbols, subscripts, upper and lower case letters, etc. It will expedite work greatly.

Mach number 1.0 shall be indicated on graphs when this number is included in the range of the data.

Millimeter or inch grids cut to fit chart areas in the work sheets shall be used in plotting curves.

Label vertical ordinates by horizontal lettering. This feature may be found undesirable for the Inspection booklet, but it is believed best for charts. The location of this lettering should be such that it is clear that it applies to vertical ordinates. In fully exposed charts, such as used on the flyleaf type of stand, the lettering may start close to left edge of chart.

If curves are to be in color, they should be so indicated. Tag curves with leaders rather than legends. Where space permits curves may be expanded either vertically or horizontally if it aids readier understanding or makes for better composition. Curves have been expanded three times their original height for betterment. Curves should be held, in general, to no more than three on a grid. There are exceptional cases, such as when pairs of curves are used - theory and experiment curves, for example - and where they are widely separated. But, in general, three curves to a chart are an eyeful to absorb in the brief time a chart is exposed.

All data submitted for chart preparation shall be sharp and definite enough to permit clear photostat or ozalid copying.

MODEL SHOP

Panels

Standard size charts shall be 1/8 inch by 36 inches by 48 inches masonite. Corners to be rounded - 2-inch radius. Front and back edges to be rounded to reduce flaking in handling, and marring other panels when stacked. Screw holes to be drilled before leaving Model Shop.

Card is to be used 40 x 60 (custom) with 36 x 48 area in view of audience. No advance preparation required.

WHS

MODEL FINISHING SHOP

Backs of all panels to receive protective coating of lacquer.

The face of panels to be thoroughly cleaned by a solvent with an eye especially on the removal of possible aniline dye crayon markings, as this dye has a tendency to bleed through any coating.

Not necessary

The face coating to be a flat white lacquer to which a cupful of cornstarch, per gallon, has been added 24 hours previous to spraying.

TECHNICAL ILLUSTRATING

Approved layouts shall be copied in triplicate of which one copy is for the author, one for the coordinator, and one retained by Technical Illustrating Section.

Subject to some compositional variation, the layout will be blown up photostatically to full size and the figure traced on a panel. Guide lines for lettering and data shall be drawn directly on the panel, except for rough indication of positions.

Use of colors:

In some cases where two or more groups of curves on separate axes are shown on one panel, it is usually advisable to use light tints over the curve areas for better separation and legibility. A light green tint is most desirable as favoring photographic reproduction. Cross sections shall be tinted a neutral gray. Plan forms may be shaded to conformation.

Areas of investigation considered as unsatisfactory or dangerous are generally tinted red; satisfactory or safe areas ... green. Bright colors to be used only in small areas of narrow strips so as not to be distracting.

Uses of colors to be functional. Much bright color tends to destroy effectiveness of data.

For color blind people and reproduction consideration, color alone should not be relied upon solely to distinguish curves. Where curves are crossing or in close proximity, different type of line shall be used.

Too fine!

Curves:

Thickness of curves may vary from 1/16 inch to 1/4 inch, depending whether it is an instrument record or a plotted curve fairly well isolated from other curves. This latter should be 1/4 inch thick. When two or more curves are so close that a 1/4-inch width curve would cause confusion, they may be 3/16 of an inch thick. This condition would also justify a colored curve with different type of line.

Curves should in general be black. Where a color would make a clearer picture, red may be added. In cases where more curves or symbols in color make for clarity, green is next desirable, then light blue, and, lastly, orange.

Dashed curves may have dashes varying from 1/2 inch to 1-1/2 inch with 3/16-inch spaces. Alternately, a 1-1/2 inch combination dot and dash, with spaces the width of the curve, may be used. Because of the fact that a red curve photographs black, it is suggested that it be broken unless used with a distinguishing symbol. Axes light slate gray - 3/16 inch wide.

Lettering:

Titles - 1-1/2 inch high

Subtitles - 1-1/4 inch high

Generality of lettering - 1 inch high

Make these larger

Subscripts - C_L $\frac{1}{4}$ $\frac{7}{8}$" C_m $\frac{1}{4}$ $\frac{5}{8}$"

No! a 1" letter should be the minimum size used anywhere on a chart.

Exponent and subscript numbers - 1/2 inch high

$1\frac{1}{2}$" C_L 1" $1\frac{1}{2}$" C_m 1"

This was discussed with C. Dearborn at Langley and he agreed to it. W.H.H.

W.H.Hunter

Lower case letters - the bodies of lower case lettering to be 5/8 inch to 3/4 inch high. Also Greek symbols like α ω , etc., of a compact design are to be expanded to 3/4 inch high.

Fraction letters in titles may be shown thus: L/D . Otherwise, it shall be indicated as $L/_{D}$, the lower limit of the upper letter in line with the upper limit of the lower letter.

Abbreviations:

Only common abbreviations of words or expressions accepted by all aeronautical engineers may be used. No abbreviations are to be used that are open to misinterpretation.

Photo enlargement mounting:

The most effective adhesive for mounting large photographs appears to be Resyn Adhesive No. 3123, sold by National Starch Products, 270 Madison Avenue, New York 16, N. Y.

The enlargement is best mounted while it is still damp from its washing. The adhesive is applied to both the enlargement and the panel. The adhesive should be wet, not merely sticky, on both panel and photograph. Blotters are placed above the mounted photo, a few panels above these, and the whole weighted down overnight, forty or fifty pounds per square foot. Sand bags are very good for the purpose.

COORDINATOR AND ILLUSTRATORS

Don'ts:

Don't spray charts with clear lacquer when finished. Last minute changes are rendered too difficult thereby.

Don't photograph before inspection is well underway, except for booklet charts.

Do:

Procure 42-inch wide wrapping paper for wrapping and handling charts.

Make envelopes to fit charts well in advance of usage.

Notify Procurement of masonite requirements 4 weeks in advance.

not to be used.
Use Showcard stock instead.