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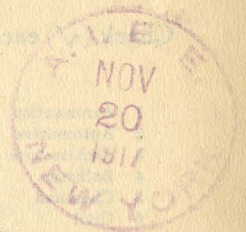
THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

33 West 39th Street, New York

PERSONAL CLASSIFICATION SHEET

Read pages 2, 3 and 4 before filling out this blank

Please return this sheet with your data, even if you have filled out similar blanks for other organizations



Name in full RYAN? Harris Joseph Date November 13 1917
(Surname) (First name) (Second name)

Mail address (PO) STANFORD UNIVERSITY Palo Alto California (Business Telephone)
(Number) (Street) (State) (Palo Alto-Local 39)

Telegraph address Palo Alto Telephone No. 1075 Married? yes Dependents? wife
(City) (State) (If widower answer no.)

Occupation or position Professor of Electrical Engineering, L. Stanford J. U.

Name of employer Leland Stanford Junior University

Location Palo Alto, for RR Station, (PO) Stanford University.

Kind of business Engineering Instruction and Research

Birth: Year 1866 Country U S A When naturalized? *****

Citizen of what country? Santa Clara County, California, U S A

Physical condition Fair except quite deaf in left ear; somewhat deaf in right.

Education { Common School yes
 High School yes College Cornell Univ. Course Elec. Eng. Graduated 1887
(Name of College) Degree Mech. Eng. in Elec. Eng.

Member of what engineering and technical societies? AIEE; I. Radio E.; Ill. Eng. S.; Am. Elec-
 trochem. Soc.; Am. Physical Soc.; Nat'l Elec. Light Assn. (in practice.

What foreign languages do you speak? French & German Fluently? Read Yes, -not

In what countries have you resided and what years? England, summer of 1900.

In what countries traveled extensively? Germany & France, Belgium & Holland, 1898.

What military or naval training? Two years, drill, Cornell University, 1883-5.

Are you in active service or reserve? No. Rank? *****

Member of what war committees? Pacif Coast Section, Submarine Detection Group,
 National Research Council; member Comm. Eng. and
 Inventions, California State Council of Defense.

Please review carefully pages 2, 3 and 4, and enter in the following spaces brief descriptions and symbols of the leading specialties in which you have had considerable experience. For example, the symbols for an inspector of underground electrical transmission systems would be "A7, B12, Fa 1b."

Specialties in which you have had greatest experience <small>(This table is for indexing purposes)</small>	Symbols of Specialties
Electrical Engineering, 30 years, 1887-1917	A-7
Teaching Electrical Engineer, 1889 to present	B-28
Researches, Transformers, Electrical Machinery, Insulators and special measuring facilities for same	B-23&29
Member, Board Consulting Engineers, Los Angeles Aqueduct Power, City of Los Angeles, 1909 to present	B-2
Author, Technical Papers and Texts	B-31
Electrical Apparatus, Instructor and Consultant	F-1-10 inc.
Other Specialties	

INDUSTRIAL AND PROFESSIONAL EXPERIENCE

Check (✓) each division in which you have had sufficient experience to be of service. Use blank spaces as needed.

A BRANCHES OF ENGINEERING.

1 Aeronautics	10 Hydraulic	19 Military
2 Automotive	11 Illuminating	20 Mining
3 Architecture	12 Marine	21 Municipal
4 Ballistics	13 Mathematics	22 Naval Architecture
5 Chemical	14 Mechanical	23 Navigation
6 Civil	15 Metallurgy	24 Patent Law
✓ 7 Electrical	16 Metallography	25 Power
8 Gas	17 Machine Shop Practice	26 Public Utility Service
9 Heating and Ventilating	18 Mill (Textile, etc.)	✓ 27 Physics
		28 Railroad
		29 Safety, Fire Prevention
		30 Telegraph, Telephone (see E1-6)
		31 Welfare Work
		32

B POSITIONS HELD IN "A".

Check the most important positions you have held, and follow by number of the branch checked under "A."

For example, a consulting heating and ventilating engineer should mark the list below as follows:

"✓ 2 Consulting Engineer A9."

1 Appraiser	8 Erecting Engineer	17 Operating Engineer	✓ 28 Teacher A-7
✓ 2 Consulting Engineer A7-27	9 Estimator	18 Organizing Engineer	✓ 29 Testing Engineer A-7-27
3 Constructing Engineer	10 Executive, general	19 Production Engineer	30 Works Manager
4 Contractor	10a Foreman	20 Publicity Engineer	✓ 31 Writer A-7-27
4a Department Manager	11 Industrial Engineer	21 Purchasing Agent	
5 Designer of Apparatus or Machinery	12 Inspector	22 Rate Setter	
5a Designer of Plant	13 Laboratory Chief	✓ 23 Research Engineer A7-27	32
5b Economist	13a Laboratory Assistant	24 Sales Engineer	
6 Draftsman	14 Manufacturer	25 Sales Manager	
7 Editor	15 Master Mechanic	26 Specification Engineer	
	16 Office Executive	27 Superintendent	33

RECORD OF EXPERIENCE.

Please give below an account of your engineering and technical experience, bringing out in particular any line in which you are especially proficient.

Give approximate dates of your experience in each case—this is most important.

Electrical Engineering, Installation Lighting Plants, 1887-8
 Instructor in Physics, in charge Electrical Machinery Laboratory
 Cornell University, 1888-9.

In charge, Electrical Engineering, Cornell University, 1889-1905.

Judge, Board of Awards, World's Fair, Chicago, summer 1893.

In charge, Electrical Engineering Department, Leland Stanford Jr.
 University, 1915 to present.

Vice-President, American Institute of Electrical Engineers, 1896-8
 Consulting Engineer, Los Angeles Aquaduct Power Development, 1909
 to present.

Honorary Vice-President Representing the American Institute of
 Electrical Engineers, Panama-Pacific International
 Exposition, San Francisco 1915

Member of Jury, P-P I E, S F 1915.

Actively engaged at present in submarine detection research as
 Member, Pacific Coast Section of the Submarine Detection
 Group of the National Research Council

Member (in advisory capacity) Committee on Engineering and
 Inventions, California State Council of Defense.

Continue on a separate sheet if necessary.

INDEXING SCHEDULE

EXPERIENCE IN DETAIL

Check each subdivision in which you have had experience, adding subdivisions and sub-subdivisions as needed.

Your entries in the following schedule are for indexing purposes.

C AGRICULTURAL MACHINERY AND IMPLEMENTS (Including Farm Tractors and the Application of Electricity) 1 2 D AVIATION 1 Aeroplanes 2 Hydro-aeroplanes 3 Balloons and Dirigibles (Including Production of Hydrogen) 4 Engines 5 Fuselages and Planes 6 Parts and Instruments 7 E COMMUNICATION 1 Cables 2 Signal Systems 3 Telegraph 4 Telephone ✓ 5 Radio (Research only) 6 Light Rays 7 F ELECTRICAL APPARATUS See also I-7, M-5, N-4, R-4, S-1, U & Z ✓ 1 Generators ✓ 2 Motors and Converters ✓ 3 Transformers ✓ 4 Lamps (see Ha) ✓ 5 Batteries ✓ 6 Controlling Devices ✓ 7 Magnets and Solenoids ✓ 8 Switchboards ✓ 9 Heaters ✓ 10 Rectifiers 11 Fa ELECTRICAL TRANSMISSION AND DISTRIBUTION 1 Transmission Systems a Overhead b Underground 2 Distributing Systems a Overhead b Underground 3 Circuit Protection 4 Wiring of Buildings and Ships 5 Wires and Cables 6	G FUELS AND COMBUSTION (See also Q, Oil and Gas Supply) 1 Coal 2 Coke 3 Low-grade Fuels 4 Blast-furnace and Coke-oven Gas 5 Producer Gas 6 Boiler Furnaces a Stokers b c 7 Industrial Furnaces 8 Oil-burning Equipment 9 Powdered-fuel Equipment 10 H HEATING AND VENTILATING 1 Hot-air 2 Steam and Hot-water 3 Vacuum Systems 4 Ventilating Systems 5 Air-conditioning 6 Central Plants 7 Ha LIGHTING (Electricity, Gas, Oil) ✓ 1 Residence 2 Industrial 3 Street 4 Head-lighting 5 Flood-lighting ✓ 6 Picture Projection 7 Shades, Reflectors, Fixtures ✓ 8 Lamps (See I5, Z7) 9 I MACHINERY AND TOOLS 1 Machine Parts a Ball and Roller Bearings b Gears c 2 Machine Tools (Specify what tools) a b c d Grinding Machines e Polishing Machinery 3 Small Tools 4 Gages, Jigs and Fixtures 5 Metal-working Machinery a Bending and Straightening Machines b Shearing Machines c Power Presses d Wire-drawing Machines 6	I MACHINERY AND TOOLS (Continued) 6 Forge Shop Equipment (See also N) a Steam and Air Hammers b Bulldozers c 7 Welding Equipment a Electric b Oxy-acetylene c J ENGINEERING MACHINERY 1 Air Machinery a Compressors b Pneumatic Tools c Fans and Blowers d Turbo-blowers e 2 Pumps a Centrifugal b Direct-acting c Hydraulic-pressure d Pumping Engines e 3 Refrigerating a Ice Making b Cold Storage c 4 Hoisting and Conveying a Conveyors b Cableways c Cranes and Hoists d Elevators and Escalators e Pneumatic Tube Systems f 5 Mining a Boring b Draining c Dredging d Excavating e Hydraulic f Quarrying g Tunnelling h 6 Chemical Plant Equipment a Evaporators b Drying Apparatus c 7 Fire Extinguishing Machines a Sprinklers b Engines c Chemical	K INDUSTRIAL MACHINERY 1 Cement 2 Dairying 3 Flour-milling 4 Mining and Ore-dressing 5 Paper and Pulp 6 Logging 7 Saw-mill 8 Shoe 9 Sugar 10 Textile 11 Wood-working 12 13 14 Specialty Machines a Adding b Envelope c Sewing d Typewriters e Weighing f L MATERIALS 1 Iron and Steel a Cast Iron b Malleable Iron c Wrought Iron d e Alloys f Cast Steel g High-speed Steel h Steel Castings j Structural Steel k Manufactured Product (See L-5) l Cold-drawn Steel m 2 Non-ferrous Metals a Alloys b Aluminum and Magnesium c Antimony, Bismuth, and Cadmium d Brass and Bronze e Chromium and Manganese f Copper g Gold and Silver h Iron and Steel i Lead j Mercury k Nickel and Cobalt l Platinum Metals m Radium and Uranium n Silicon and Titanium o Sodium p Tin q Tungsten r Zinc
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B28 A7 Prof. E. E. (Leland Stanford Jr. University)
 B23 A27 Research Engg.
 B2 A7 Consulting Engg.
 ES, F, L3d, M5, R4, S1

INDEXING SCHEDULE

(Continued)

L MATERIALS (Continued)

- 3 Non-Metals
 - a Abrasives
 - b Asbestos
 - c Belting Materials
 - d Insulating Materials
 - e Lubricating Oils
 - f Carbon Products
 - g Concrete, Reinforced Concrete
 - h Timber
 - i
- 4 Chemicals
 - a Acids, Alkalies and Salts
 - b Alcohol and Acetone
 - c Ammonia
 - d Analytical Chemistry
 - e Barium Compounds
 - f Cement, Lime (see L-3)
 - g Coke and Tar
 - h Dyes and Textiles
 - i Explosives (high)
 - j Explosives (black powder)
 - k Fats and Soaps
 - l Fertilizers
 - m Foods
 - n Glass and Ceramics
 - o Inorganic Chemicals
 - p Nitrogen (synthetic)
 - q Organic Chemicals (other than b)
 - r Paints and Varnish
 - s Petroleum and Asphalt
 - t Pharmaceuticals
 - u Pyrotechnics
 - v Rubber and Allied Substances
 - w Sugar, Starch, and Gums
 - x Toluol, Benzol
 - y Wood Products
- 5 Supplies
 - a Bolts and Nuts
 - b Brass Products
 - c Pipe and Fittings
 - d Tubes
 - e Wire
 - f

M MEASURING AND TESTING APPARATUS

- 1 Calipers and Gages
- 2 Pressure Gages
- 3 Flow Meters
- 4 Dynamometers
- 5 Electrical Instruments
- 6 Pyrometers
- 7 Recording Instruments
- 8 Testing Machines
- 9 Weighing Apparatus
- 10 Photometers
- 11

N METALLURGICAL EQUIPMENT

(For Heat-treatment, etc., see Z)

- 1 Foundry Equipment (Specify what equipment)
- a

N METALLURGICAL EQUIPMENT (Continued)

- 2 Iron and Steel Works Equipment
 - a Blowing Engines
 - b Coke oven (including by-product) Equipment
 - c Rolling Mill Equipment
 - d
- 3 Forging Equipment
 - a Forging Presses
 - b
- 4 Electric Furnace

O MUNICIPAL AND COMMUNITY

- 1 Pavements and Roads
- 2 Sewerage and Water Supply
- 3 Irrigation

P MUNITIONS

- 1 Artillery
- 2 Machine Guns
- 3 Rifles
- 4 Side Arms
- 5 Explosives
- 6 Shells
- 7 Fuses
- 8 Cartridges
- 9 Aircraft Bombs
- 10 Torpedoes
- 11 Mines
- 12 Grenades
- 13

Q GAS MANUFACTURE AND SUPPLY

- 1 Coal Gas Plant
- 2 Water Gas Plant
- 3 Pintsch Gas Plant
- 4 Distribution System
- 5 Lamps (see Ha)
- 6

Qa OIL AND NATURAL GAS SUPPLY

- 1
- 2 Natural Gas Wells Equipment
- 3 Natural Gas Distribution
- 4 Oil Well Equipment
- 5 Oil Distribution
- 6 Oil Refining
- 7 Lamps (see Ha)
- 8

R POWER GENERATION

- 1 Steam Power and Plant Equipment (For Furnaces see G)
 - a Boilers
 - b Superheaters
 - c Economizers
 - d Feedwater Heaters
 - e Engines

R POWER GENERATION (Continued)

- f Turbines
- g Condensers
- h Piping, Valves and Fittings
- j Steam Specialties
- k
- 2 Gas Power and Plant Equipment
 - a Gas Producers
 - b Blast Furnace and Coke-oven Gas Equipment
 - c Gas Engines
 - d Oil Engines
 - e Gasoline Engines
 - f High-speed Gasoline Engines

g

3 Hydraulic Power and Plant Equipment

a Turbines

b

4 Electric Light and Power } much limited.

- a Central Stations
- b Isolated Plants

c

d Substations

S POWER TRANSMISSION

- 1 Electric
 - a Motor Drive
 - b Motor Control

c

2 Belt Transmission

- a Shafting
- b Pulleys

c

3 Rope Transmission

4 Chain Transmission

- 5 Gearing
 - a Reduction Gearing

b

T SHIPS

- 1 Merchant Ships and Transports (Specify wood or steel)
- 2 Warships
- 3 Patrol Boats
- 4 Small Boats, Yachts
- 5 Submarines
- 6 Trawlers and Mine Sweepers
- 7

U STRUCTURES AND BUILDINGS

- 1 Foundations
- 2 Factories
- 3 Tanks
- 4 Power Houses
- 5 Docks, Dikes, Levees
- 6 Bridges
- 7 Dams
- 8

V TRANSPORTATION

- 1 Animal
- 2 Automobiles (Specify whether gasoline, electric or steam)
 - a Pleasure Cars
 - b Road Tractors
 - c Trucks
 - d Motor Cycles
 - e Motors
 - f Accessories and Parts
 - g
- 3 Railway, Electric
 - a Maintenance of Way
 - b Valuation
 - c Trolley Cars
 - d Gasoline-electric Cars
 - e Car Barns and Sheds
 - f Electrolysis Prevention
 - g

4 Railroad, (Steam or Electric) (Specify whether steam or electric)

- a Maintenance of Way
- b Cars
- c Locomotives
- d Brakes
- e Locomotive Terminals and Equipment
- f Signals
- g

5 Railway, Industrial

6 Marine

- a Boilers
- b Oil-burning Equipment
- c Steam Engines
- d Oil and Gasoline Engines
- e Turbines
- f Electric Drive
- g Propellers
- h Steering Gear
- j

7 Canal

- a Electric
- b

W

X

Y

Z MANUFACTURING AND SPECIAL PROCESSES

- 1 Machine Shop Processes
- 2 Cement Manufacture
- 3 Paper Manufacture
- 4 Textile Manufacture
- 5 Electrochemical
- 6 Electrometallurgical
- 7 Special Processes (Please add any processes with which you have had experience.)
 - a Dynamic Balancing
 - b Die Casting
 - c Heat Treatment
 - d Metal Coating
 - e Wood Preservation
 - f Lamp Manufacture
 - g