

SUBJECT INDEX, VOLUMES 1-10

Volume	Year	Volume	Year
1	1936	6	1941
2	1937	7	1942
3	1938	8	1946
4	1939	9	1947/1948
5	1940	10	1948/1949

The number in heavy print beside each subject indicates the volume, and the following number the page.

- Aberrations, optical 9,301
- Acoustics of auditorium, see Auditorium acoustics
- Adhesive force of lacquers . . . 8,147
- Adsorption phenomena at metal contacts 5,238
- Aerial:
- communal — ("Antennaphil") 1,246
 - loop —, aerial effect 7, 65
 - loop —, combination with normal 9, 55
 - receiving — ("Philastatic") 4,320
 - rotating directional — for PCJ-transmitter 3, 59
 - sensitivity to local interference 6,302
- Aerodromes:
- illumination and beaconing . 4, 93
 - illumination by mercury lamps 6, 33
 - radio beacons 2,370
- Aeroplane radio:
- position and course finder 2,184
 - transmitter-receiver V.R. 18 1,114
 - transmitter-receiver with course finder (photograph) 2,182
- After-effect phenomena 8, 57
- Air engines:
- theory 8,129
 - development 9, 97
 - construction 9,125
- Amplifiers
- D.C. amplification with magnetron 8,361
 - inverse feed-back, see under that title
 - noise, see under that title
 - stabilized amplifiers 9, 25
 - 9,309
 - transient characteristic 6,193
 - use in telephony 2,209
- Amplifier installations, see Sound amplification
- Amplifier valves, see Radio valves
- Analysis:
- mixtures of argon and nitrogen 5, 88
 - polarography 4,231
 - X-ray diffraction for — 5,157
- Antenna, see Aerial
- Architecture and illumination 2, 8
- Arc-welding, see Welding
- Armatures, testing dynamo — 4, 88
- Artificial resin:
- X-ray diffraction diagrams 2,256
 - see also under "Philite"
- Artificial respiration, apparatus 4,325
- Audiometer 6,234
- Auditorium acoustics:
- E.L.A.-studio 10,196
 - intelligibility 3,139
- optical models:
- principle, distribution of intensity 1, 46
 - directional distribution 5,321
- reverberation:
- theory 3, 65
 - measurement, principle 8, 82
 - measurement, apparatus 9,371
 - sound absorption 3,363
 - theatre Utrecht 7, 9
- Austempering of steel 6,279
- Band-spread, see Radio receiving sets
- Barretters 3, 74
- Batteries, emergency supply systems with — 9,231
- Beacons for aerodromes:
- light beacons 4, 93
 - radio beacons 2,370
- "Bi-Arlita" lamp (coiled coil) . . . 1, 97
- Bicycle dynamo:
- construction 3, 87
 - investigation 6,215
- Bicycle rear lights and reflectors 5,335
- Biological effect of ultraviolet radiation:
- cure of rickets (vitamin D) 3, 33
 - erythema and conjunctivitis 2, 20
- "Biosol"-lamp 2, 18
- Black-out illumination, see Illumination
- Blended light:
- different kinds 5,341
 - developments ML lamps 7, 34
- Blocking of oscillators:
- investigated with oscilloscope 3,251
 - theory 7,171
- Blocking-layer photocells 8, 65
- Blocking-layer rectifiers, see Rectifiers
- Brightness:
- in connection with blackout problems 6,161
 - definition and significance 1,142
 - of mercury lamp and sun 1, 62
 - of night sky 5,296
- Broadcasting:
- motor van for — 4, 73
 - short wave station PCJ 3, 17
 - studio equipment, see under that title
 - studio, investigation with optical model 5,321
 - transmitters, Netherlands 6, 1
- Bulbs (flower-)
- influence of X-rays 2,321
 - forcing of tulips 10,282
- Bullet finder 5,309
- Cable testing, see Power cables
- Cancer Institute, Amsterdam,
- X-ray installation 4,153
- Candle, new 5, 1
- Carrier telegraphy 8,206
- Carrier telephony, see Telephony
- Cathode 1,367
- Cathode-ray oscilloscope:
- construction:
- GM 3150 1,147
 - GM 3152 4,198
 - GM 3156 (tool-making) 5,277
 - GM 3159 (with two push-pull amplifiers) 9,202
- applications
- armatures, testing in mass production 4, 88
 - "blocking" of oscillators 3,251
 - chemical analysis (polarography) 4,231
 - cooling of hardening oils 9,147
 - electronic switch as auxiliary 3,148
 - frequency measurement 3,341
 - frequency modulation 3,248
 - fuses 4,118
 - gas discharge lamps, current and voltage 3,148
 - hysteresis loop 3,341
 - I_a - V_a diagrams 3,339
 - mechanical stresses 5, 26
 - mechanical vibrations 5,230
 - modulation depth 3,248
 - pitch of orchestras 4,205
 - power mains 3, 50
 - resonance curves of receiving sets 4, 85
 - stresses on Diesel engine parts 6, 94
 - watches, measuring of rate 9,317
- see also under Cathode-ray tubes
- Cathode-ray tubes:
- beam intensity control 1, 91
 - construction, improvements 9,180
 - electrode system, potential field (photograph) 4,229
 - focussing of electron beam 1, 33
 - post-acceleration tube 5,245
 - scanning speed:
 - apparatus for measuring calculation, measurement, practical conclusions 2,148
 - increase by post-acceleration 5,245 - secondary emission of screen 3,211
 - television tube with magnetic deflection 4,342
 - television tube for projection with lens system 2,249
 - television tube for projection with mirror system 10, 97

applications:	Cooling methods:	Electron diffraction diagrams:
characteristics of output valves 5, 61	air cooling of transmitting valves 4,121	different applications 5,161
characteristics of transmitting valves 4, 56	idem, improved method 9,171	recording with electron microscope 9, 33
phase angles, measurement 5,208	spray cooler 10,239	texture investigation 7,178
pressure indication 5,348	Copper wire, non-ferrous 8,315	
recording with high speed scanning 2,148	Course finder for aeroplanes 2,184	
applications in which an ordinary oscilloscope apparatus is used, see under Cathode-ray oscilloscope	Crystal structure, see Structure analysis	
Cavity resonators 8,149	Current regulation by barretters 3, 74	
	Cyclotron, iron for electromagnet 10,246	
Ceramics:	Damping mechanical vibrations, see Mechanical vibrations	
survey 10,205	Deaf-aid apparatus 4,316	
titanium dioxide 10,231	Debye-Scherrer camera 10,157	
Change-over to emergency apparatus in communication systems 8,310	Decibel, definition and use 2, 47	
Chrome iron for metal-glass joints 2,306	Decimal classification 3, 27	
Cinematography, light sources for — 7,161	Demonstration studio for electro-acoustic purposes 10,196	
Coal mines, illumination of — 10,334	Density meter 5,331	
Cold emission 4,100	Diamond:	
Colours:	crystal defects 2,254	
chromatic adaptation of the eye 9,257	dies 5, 14	
— deviations, control 6,186	Dielectric constant:	
— diagram (I C I-triangle) 2, 39	materials with high — 10,231	
perception of colour 1,283	temp. coeff. of — and losses 9, 91	
— stimulus and sensation 9, 2	Dies:	
Colour photography, additive method 5, 48	diamond 5, 14	
Colour rendering of light sources:	hard-cemented carbide 4,309	
improvement:	Directing instrument for femur-neck nailing 8,237	
blended-light lamps 5,341	Directional hearing, see Stereophony	
incandescent lamps ("Philiphane"-glass) 3, 47	Disk test for machinability 1,183	
mercury lamps (luminescence) 3,272	Distortion:	
method of comparison of "white" light sources 2, 1	in coil-loaded cables 4, 79	
photometer for investigation 4, 66	in the ear 4,172	
Condensers:	of magnetic origin 2,193	
ceramic — 10,231	measurement of — in loud-speakers 4,354	
electrolytic — 2, 65	in output valves 5,189	
linear action tuning — 4,277	in sound film with oblique slit 6,110	
low-loss — 5,300	reduction by feed-back, see Inverse feed-back	
power — 1,178	Dosimeter for X-rays: 10,338	
pressure — 4,254	Drying lamp: 9,249	
10 000 kVA battery 7,182	Dynamo for bicycle, see Bicycle dynamo:	
Condenser microphone, see Microphones	Dynamo pocket torch: 8,225	
Conduction in solids:	Dynatron: 3,133	
non-metallic materials 9, 46	Ear:	
semi-conductors with large negative temp. coefficient 9,239	directional hearing 6,359	
Conical disk springs 10, 61	distortion 4,167	
Contacts, electrical:	perception of pitch 5,286	
contact pressure, control 6, 61	sensitivity 2, 47	
convergence resistance 4,332	sharpness of hearing 6,234	
transition resistance (influence of adsorption) 5,238	Elastic constants of metals 6,372	
vibration of contact springs 7,155	Electro-acoustic demonstration studio 10,196	
Contact arc welding, see Welding	Electrolytic condensers 2, 65	
Contact therapy, X-ray apparatus for — 8, 8	Electrometer with vibrating condenser:	
Contrast and visibility, see Eye	for p_H -measurement 7, 24	
Converting D.C. into A.C., see Vibrators	direct reading — 10,338	
	Electrometer triode 4, 68	
	Electron, 50 years history 9,225	
	Electronic conductivity of non-metallic materials 9, 46	
	Electron counter, see Geiger counter	
	"Ferroxcube": development and properties 8,353	

applications:			
carrier telephony	9,161		
pulse generator television	10,353		
saw-tooth generator	10,125		
transformer frame aerial	9, 62		
Field strength measurement:			
accuracy	5,149		
recording apparatus	2,216		
Field strength in high-voltage installations	6,270		
Film projection:			
incandescent lamps for —	8, 72		
— with water-cooled mercury lamps	4, 2		
Filters, electrical:			
general theory	1,240		
practical calculation	1,270		
low pass —	1,298		
high pass and band pass —	1,327		
table	1,332		
transient phenomena	1,363		
— for carrier telephony	7,104		
influence of losses	7,138		
Filters for oil, see Oil filters			
Fitting for road lighting	5,222		
Flashlight lamps:			
“Photoflux”			
description	1,289		
peak time of flash	4,148		
synchronizers for —	2,334		
gas-discharge —			
for stroboscope —	8, 25		
for Wilson chamber	10,178		
Flickering:			
improvement by luminescence	3,272		
of electric light sources	6,295		
Fluctuations, see Noise			
Fluorescence:			
phenomena, theory	3,125		
— and phosphorescence, different forms	3,241		
— of solids, theory	6,349		
applications:			
general survey	9,215		
in low pressure mercury lamp, see Fluorescent lamps			
in high pressure mercury lamp	5,341		
for testing and research	3, 5		
for X-ray screens	9,321		
Fluorescent lamps (tubular):			
principles	3,272		
application in coal mines	10,334		
application in living rooms	8,267		
construction:			
for high voltage	4,337		
for low voltage	6, 65		
starter switch for —	10,141		
Foundry:			
high-frequency furnace	1, 53		
X-ray testing of castings	2,377		
Frequency analysis, recording apparatus	7, 50		
Frequency, measurement of —, with oscilloscope	3,341		
Frequency-changing valves:			
diode as —	6,285		
four-beam octode	3,266		
Frequency characteristics, recording:			
automatic recording apparatus	4,354		
tone generator for —	5,263		
Frequency modulation:			
comparison with amplitude modulation	8, 89		
control with oscilloscope	3,248		
principles	8, 42		
ultra short wave link with —	8,121		
ultra short wave link with —	8,193		
Fuses, testing with oscilloscope	4,118		
Galvanometer	7,113		
Gases, detection of poisonous	8,341		
Gases, permeability of metals for:			
theory	6,365		
experiments	7, 74		
Gas-discharges:			
comparison of sodium and mercury lamp	1, 2		
excitation and ionization in positive column	3,157		
high frequency oscillations in sodium lamps	1, 87		
light emission in positive column of mercury, sodium, neon	3,197		
luminescent tube-wall with low pressure mercury column	3,272		
Gas-discharge lamps:			
A.C. circuits for —	2,103		
flicker	3,272		
oscillographic investigation	3,148		
photometry	1,120		
recording — for facsimile	5,166		
see also Gas-discharges and Lamps			
Gas-filled photocells, time lag	4, 48		
Gas-filled rectifier valves:			
physical principles	2,122		
see also Rectifiers			
Gearing, epicyclic —	9,285		
Geiger counter:			
application in tracer method	8,330		
electron counter, description	6, 75		
X-ray spectrometer with —	10, 1		
Getters	5,217		
Giorgi units	10, 55		
Giorgi units	10, 79		
Glare:			
in road lighting	1,225		
in tunnel lighting	10,299		
Glass:			
alloys for sealing to —	10, 87		
composition, properties, use	2, 87		
joints with metals (chrome iron)	2,306		
metal leads through glass	3,119		
sintered glass	8, 2		
stresses in glass	9,277		
vitreous state	8,231		
Glow discharge tube for voltage stabilization	8,272		
Gramophone records:			
simple apparatus for recording	4,106		
speed of playing	2, 56		
stereophony on —	5,182		
Hardening oils, investigation of cooling process	9,147		
Hard metal (“hard cemented carbides”)	4,309		
Hardness, definition and measurements	2,177		
Hearing aid apparatus	4,316		
Heliographic printing, mercury lamps for —	6,250		
High frequency furnace with valve generator	1, 53		
High voltage:			
assembly of 10^6 V generator (photograph)	4,159		
field strength in — constructions	6,270		
impulse voltage generators, see under that title			
generator for 10^6 V on the cascade principle	1, 6		
generator with stabilized voltage	10,135		
installation Cavendish Laboratory	2,161		
rectifying valves, see Rectifiers			
X-ray tube — construction	4,153		
Hysteresis:			
distortion caused by —	2,193		
measuring apparatus for soft iron	2, 84		
oscillographic recording	3,341		
Iconoscope	1, 18		
Illumination:			
aerodromes	4, 93		
architecture and —	6, 33		
black-out illumination:			
brightness of night sky	5,296		
concept of brightness	6,161		
filter method	5, 93		
principles	4, 15		
blended light	7, 34		
coal mines	10,334		
efficiency of installations	7, 97		
exhibitions:			
Liège 1939	5, 42		
Paris 1937	2,361		
“Well-lighted House”	4,174		
indirect —, light distribution on reflection	5,125		
— intensity in offices and homes	8,242		
League of Nations Palace, Geneva	3,175		
linear light sources:			
illumination intensity, shadows, reflections	4,181		
reflecting surfaces	5, 16		
calculation of installations	6,147		
living room —, see under that title			
principles of public —	2,110		
railway yards	4, 61		
road lighting, see under that title			
ships (“Nieuw-Amsterdam”).	3,356		
standards for illumination levels	10,214		
streets:			
principles	2,142		
reflector	5,222		
tennis courts	1,252		
theatre Utrecht	7, 1		
traffic tunnels	10,299		
work benches	3, 53		

Impedance measurement:	
with resonant Lecher system	8, 16
with non-tuned Lecher system	8,278
Impulse generator (carrier supply)	8,137
Impulse-voltage generators:	
for 2×10^6 V	1,236
up to 4×10^6 V and 80 kW sec	3,306
Incandescent lamps:	
assembly of 10 kW lamp (photograph)	4, 41
“Biarlita” lamp (coiled-coil)	1, 97
bicycle rear lights	5,335
— for cinematography	7,161
colour rendering, see under that title	
efficiency, improvements	6,334
— for film projection	8, 72
flickering	6,295
lighthouse lamps	4, 29
— for photography	6,259
“Protector” lamp	4, 15
series connection	6,105
— for testing fastness-to-light	1,277
tungsten ribbon lamps	5, 82
see also Illumination	
Indicator for internal combustion motors , see Pressure indicator	
Infrared radiation:	
drying with —	9,249
surveillance system	1,306
therapeutic use	
large apparatus	6,202
“Infraphil”	8,177
Intelligibility of speech	3,139
Inverse feed-back:	
principle and possibilities for application	2,289
applications:	
in electrometer amplifier	10,339
for expansion in sound reproduction	3,204
in receiving sets	1,264
in repeaters	2,209
for stabilization of amplifiers	9, 25
9,309	
Ionosphere, radio investigation of	8,111
Iron content of copper wire	8,315
Iron for cyclotron magnet	10,246
Iron filament in barretters	3, 74
Iron lung	4,325
Iron, transition α to γ	1,317
Isotopes , see Tracers	
Krypton , in incandescent lamps	6,334
Lacquers, adhesive force	8,147
Lamps , see Blended light	
Flashlight lamps	
Fluorescent lamps	
Gas-discharge lamps	
Incandescent lamps	
Mercury lamps	
Sodium lamps	
also Illumination	
Laryngophone	5, 6
League of Nations Palace, Geneva:	
electro-acoustic equipment	3,322
illumination	3,175
Lecher systems	6,240
Liège, illumination of Water Exhibition 1939	5, 42
Light distribution of projectors	9,114
Light sources , see Lamps	
Lighthouse lamps	4, 29
Lightning, electrical data	2,225
Linear light sources , see Fluorescent lamps and Illumination	
Living room lighting:	
with fluorescent lamps	8,267
illumination intensity	8,242
“Well-lighted House”	4,174
Loading coils:	
magnetic core material	2, 77
X-ray examination of core material	2, 93
use, see Telephony	
Losses:	
— by after-effect phenomena	8, 57
connection with temp. coeff.	
of dielectric constant	9, 91
influence on networks	7,138
magnetic —	8,353
measurement phase angles	5,300
Loud speakers:	
directional effect, sound diffusers	4,144
efficiency	4,301
electrical megaphone	4,271
testing	4,354
Luminescence , see Fluorescence and Fluorescent lamps	
Luminous standard	5, 1 10,150
Machinability, estimation by disk test	1,183 1,200
Magnets:	
calculation	5, 29
lifting power	5,195
use in dynamo	8,225
Magnetic material:	
hysteresis measurements	2, 84
— for loading coils	2, 77
non-metallic — for high frequencies	8,353
soft iron for cyclotron	10,246
Magnet steel:	
high power steel	6, 8
theory, properties of different kinds	2,233
use for magnets	5, 29
Magnetostriiction, effect on thermal expansion	10, 87
Magnetron:	
as direct current amplifier	8,361
theory	4,189
use in transmitter	2,299
Mains:	
oscillographic investigation	3, 50
protection against surge voltages	2,225
Manometers for high vacua	2,201
Manufacture, methods of checking:	
cathode-ray oscilloscope for testing	4, 85
universal testing set for radio valves	2, 57
X-ray control of assembly	3,186
Material testing:	
automatic — with ionization chambers and X-rays	3,228
electron microscope for —	1,312
fastness-to-light	1,277
hardness	2,177
machinability	1,183
X-ray testing:	
apparatus	5, 69
examples:	
assembly	3,186
castings	2,377
riveted joints	2,350
welds	3, 92
method	2,314
see also Structure analysis and Texture investigation	
Measuring bridge, simple apparatus (Philoscop)	2,270
Mechanical stresses, investigation:	
with cathode-ray oscilloscope	5, 26
(varying —)	6, 94
— of glass	9,277
with X-ray diffraction	1,373
Mechanical vibrations:	
of contact springs	7,155
damping of —	1,370
pick-up for investigation of —, with oscilloscope	5,230
vibration-free mountings	9, 16
9, 85	
Megaphone, electrical	4,271
Melting point, connection with thermal expansion	10, 87
Mercury-cathode valves , see Rectifiers	
Mercury dropping electrode	4,231
Mercury lamps:	
“Biosol” lamp	2, 18
colour rendering, see under that title	
comparison with sodium lamps	1, 70
for heliographic printing	6,250
high pressure —, air cooled:	
HP 300	1,129
HPL (fluorescence)	5,341
HPL for photography	4, 27
in enlarging apparatus	3, 91
high pressure —, water cooled:	
for aerodrome	6, 33
brightness	1, 62
for film projection	4, 2
properties and applications	2,165
low pressure —, with fluorescence, see Fluorescent lamps	
see also Blended light and Illumination	
Metal leads through glass , see Glass	
Metal-vapour lamps , see Gas-discharge lamps	
Microphones:	
calibrated —	1, 82
condenser microphone:	
construction	9,330
circuit with low noise level	9,357
laryngophone	5, 6
survey of different types	5,140
Mirror for telescope	1,358

Mixing stage with triodes, self-oscillating 8,193
 Modulation depth, measured with oscillograph 3,248
 Modulators for carrier telephony 7, 83
 Moisture content, determination 9, 13
 Molybdenum, texture 7,120
 Moving coil meters, non-ferrous copper wire for 8,315

Multipliers:
 construction with magnetic focussing 3,133
 construction with electrostatic focussing 5,253
 applications
 television transmitter 2, 72
 facsimile transmitter 10,257
 X-ray camera-photography 10,107
 Multireflection tube 8,257

Music:
 duplication of concerts 10,169
 fortissimo and pianissimo 2,266
 perception of pitch 5,286
 pitch intervals 2, 47
 pitch of orchestras, statistics 4,205
 pitch, standard 5,243
 playing speed of gramophone records 2, 56

Musical instruments:
 church bells 5,293
 compass of various— 2, 47
 violin, amplification of sound 5, 36

Neon lamps for irradiation of plants 1,193

Networks:
 duality of —, and geometrical configurations 5,324
 equivalent —, with highly saturated iron core 2,276
 filters, see under that title
 influence of losses 7,138
 Neutrons, production and use 3,331
 Nickel-iron strip, texture 2, 93
 "Nieuw Amsterdam", illumination 3,356
 Night-blindness, testing for 9,211

Nipkow disk:
 construction 4, 42
 interlaced scanning 3,285
 use in television transmitter 2, 72

Noise:
 causes of — 6,129
 in amplifiers 2,136
 in amplifier valves 2,329
 in receiving sets 3,189
 in sound film reproduction 8, 97
 in ultra short wave reception 5,172
 microphone circuit with low noise level 9,357
 "Normandie", sound distribution 1, 22

Nuclear physics:
 apparatus for transmutation (1250 kV) 6, 46
 neutrons, production and use 3,331
 survey 1937 2, 97

Octaves and decibels 2, 47
Offices, illumination intensity 8,242

Oil-filters, magnetic:
 action of— 6,169
 construction 2,295

Operational calculus in electrical filter theory 1,363
Optical aberrations 9,301
Optical models for investigation auditorium acoustics, see Auditorium acoustics

Optical telephony 1,152

Oscillations:
 relaxation oscillations 1, 39
 see also Mechanical vibrations

Oscillator, for testing radio sets 6,154

Oscillator, see Triode-oscillator

Oscillograms, distortion:
 causes in the amplifier 5,281
 causes in the tube 4,199
 5,245

Oscillograph, see Cathode-ray oscilloscope

Paris, illumination World Exhibition 1937 2,361

Peak voltage meter 7, 20

Pearls, X-ray testing for genuineness 1, 60
 2,156

Pentodes, see Radio valves and Transmitting valves

Perception of colour 1,283

Perception of pitch 5,286

Permeability of metals for gases, see Gases, permeability of metals

Phase angles, measurement with cathode ray tube 5,208

"Philiphane" glass, influence on colour rendering 3, 47

Philips-Miller system of sound recording:

principle 1,107
 sound recorder 1,135
 sound-track cutter 1,211
 recording strip 1,231
 machine for recording and reproduction 5, 74
 stereophonic recording 6, 80
 use in motor van 4, 73
 copying of sound track 9, 65
 9,289

"Philishave" dry shaving apparatus 4,350

"Philite":
 properties and manufacture 1,257
 use, table of properties 3, 9

"Philoscop" measuring bridge:
 description 2,270
 polarography with— 4,231
 resistance measurement of liquids with— 3,183

pH-measurement:
 with electrometer triode 5, 54
 with vibrating condenser 7, 24

Phosphorescence, see Fluorescence

Photocells:

principles and development 2, 13
 blocking-layer— 8, 65

application:
 optical telephony 1,152

. 4, 68

photometry 4,260
 5,166

surveillance system 1,306

time lag of gas-filled— 4, 48
 —with amplification by secondary emission, see Multipliers

Photocurrent, measurement with 4, 66
 electrometer triode 5, 54
 "Photoflux" lamp, see Flashlight lamps

Photographic reproduction:
 of sound film 9, 65
 metal-diazonium system 9,289

Photography:
 colour photography, additive method 5, 48

enlarging apparatus with mercury lamps 3, 91
 flashlight lamps, see under that title

incandescent lamps for— 6,259
 lamps for cinematography 7,161

—with mercury light (HPL lamp) 4, 27
 —with sodium light 2, 24

Photometry:

definition of brightness 1,142
 general problems 1,120

new candle 10,150
 physical— 4,260

spectral— (block method) 4, 66
 subjective— 5,270

technical — of gas-discharge lamps 5,166
 tungsten ribbon lamps for — 5, 82

Pick-up for mechanical vibrations 5,230

Pitch, see Music

Planigraphy 5,309

Plants, irradiation of:
 experiments with neon light 1,193

forcing of tulips 10,282

seed potatoes 10,318

Poisonous gases, detection of 8,341

Polarography 4,231

Positive column, see Gas discharges

Potatoes, storing in artificially-lighted cellars 10,318

Potential fields, investigated with electrolytic tank:

method 4,223

applied to igniter of relay valve 8,346

Potter-Bucky diaphragm 8,183

Powder metallurgy 4,309

Power cables:

localization of flaws 7,113

testing apparatus 7, 59

Pressure condensers 4,254

Pressure indicator:

construction 5,348

recording of diagrams 6, 22

Projection, see Film projection

Projectors, light distribution of— 9,114

Protection of overhead lines 2,225

"Protector" lamps 4, 15

Push-button tuning, see Radio receiving sets

Pyrometer, optical, in hardening department 6, 30

Quartz glass, metal leads 3,119

Radiation measurements:	
comparison of fastness-to-light apparatus and sun . . .	2,282
density meter	5,331
with ionization chamber and electrometer triode	5, 58
photographic (X-ray dosage)	1, 62
X-ray dosimeter	10,338
Radio interferences:	
causes and transmission	3,235
combating —	4,237
— due to sodium lamps	1, 87
sensitivity of aerials to —	6,302
Radio investigation of the ionosphere	8,111
Radio receiving sets:	
aerial, see under that title	
aeroplane radio, see under that title	
band spread:	
principles, different types	4,284
simple system	6,265
car radio	3,112
compression and expansion	3,204
directional reception	9, 55
diversity reception	9, 55
frequency characteristics	5,115
h.f. oscillator for testing —	6,154
magnetic tuning, negative feed-back	1,264
noise, see under that title	
push-button tuning	
with linear action condenser	4,277
with motor	3,253
resonance curves, control in mass production	4, 85
secret production in war time	8,337
superheterodyne principle, demonstration	1, 76
super-regenerative reception	5,315
see also Telephony, ultra short wave connections	
Radio valves:	
characteristics, recording	3,339
with oscilloscope	5, 61
construction, all-glass —	4,162
construction, glass or metal	6,317
diode for frequency changing	6,285
electron trajectories in —	5,131
influence of transit times and space charge; amplification with negative anode	1,171
influence of transit times, self-induction, mutual induction of connections	3,103
noise of —	2,329
pumping plant (photograph)	3,147
series of small — ("Rimlock")	8,289
testing set for —	2, 57
secondary emission in —:	
application	3,133
counteracted in output valves	10,346
harmful results	3,211
special valves:	
diode as effects channel	6,285
diode for voltage measurement	7,124
diode, magnetically controlled	8,361
double cathode connection (EF 51)	5,357
electrometer triode	5, 54
four-beam octode	3,266
gasfilled triode	1,367
output valves for low voltage	10,346
output valves, power and distortion	5,189
output valves, testing with oscilloscope	5, 61
push-pull amplifier valve (EFF 50)	5,172
see also Transmitting valves	
Radiowaves, propagation	4,245
Railway yards, illumination	4, 61
Rare gases:	
analysis of argon-nitrogen mixtures	5 88
manufacture of	4,128
Rear lights for bicycles	5,335
Receiving sets, see Radio receiving sets	
Receiving valves, see Radio valves	
Recrystallization, X-ray investigation	2, 29
Rectifiers:	
blocking-layer rectifiers:	
construction, theory	4,100
use of selenium —	5,199
small selenium —	9,267
cascade generator:	
for 1200 V	6, 75
for 25 kV (television)	10,125
see also: High Voltage controllable unit 20 kV, 18 A	1,161
high voltage valves:	
for cascade generators	1, 6
for X-ray diagnostics	8,199
hot-cathode rectifier valves	
principles of gas-filled —	2,122
relay valve (DCG 5/30)	1,163
mercury-cathode valves:	
with dielectric igniter	8,346
with metal envelope	1, 65
preservation rectifier	9,233
with stabilized voltage, see Stabilization of voltage	
for telephone exchanges	1,295
voltage impulses in	6, 39
Reflection:	
brightness coefficients of road surfaces	3,313
light distribution upon — by different materials	5,125
— with linear sources of light	5, 16
reflectors for bicycles	5,335
Relaxation oscillations	1, 39
Relay valves:	
rectifier unit with— DCG 5/30	1,161
— as timing devices in welding	1, 11
see also under Rectifiers	
Resistance measurement	
apparatus for —	2,270
— of liquids	3,183
Resistors, automatic starting —	1,205
Resonance circuits, u.h.f.	6,217
Resonance curves of receiving sets, measurement	4, 85
Reverberation, see Auditorium acoustics	
Ribbon lamps	5, 82
Riveted joints, X-ray examination	2,350
Road lighting:	
installed systems:	
measurements	4,292
Purley Way, Croydon (photograph)	1,230
physiological principles	
survey	9,149
general properties of eye	1,102
brightness and apparent brightness	1,142
contrast sensibility and richness of contrast	1,166
visual acuity and speed of vision	1,215
glare	1,225
principles of public lighting	2,110
reflection of road surface:	
desired brightness and contrast	2,239
distribution of brightness	3,313
street lighting, see Illumination (streets)	5,222
visibility meter for judging —	1,349
"Rotalix" X-ray tube	3,292
8, 33	
Scanning speed, see Cathode-ray tubes	
Schmidt-optical system:	
principle	9,301
correction plates, manufacture of —	9,349
for projection-television	10, 69
testing of spherical mirror	10,286
Secondary emission:	
emission of different materials	3, 80
undesired effects in amplifier valves	3,215
valves	10,346
applications:	
cathode-ray tube	3,214
dynatron, multiplier, amplifier valves	3,133
amplification of photo-electrical currents, see Multipliers	
Selenium photocell	8, 65
Selenium rectifiers, see Rectifiers (blocking layer —)	
Semi-conductors with large negative temperature coefficient	9,239
Shaving apparatus, "Philishave"	4,350
Short waves, see Ultra short waves	
Short-wave therapy, generator	7,147
Signalling in carrier telephony	8,168
Sintered glass:	
description, properties	8, 2
use in transmitting valves	10,273
Soap film models of electrical networks	7,138
Soapstone, X-ray testing	1, 60
Sodium lamps	
applications in photography	2, 24
comparison with mercury lamps	1, 2
h.f. oscillations in —	1, 87
principles and development	2,353
see also Illumination	
Sound:	
absorption	3,363
amplification:	
apparatus for improving defective hearing	4,316
League of Nations Palace	3,322
megaphone	4,271
"Normandie"	1, 22
principles, applications	3,221
audiometer	6,234
auditorium acoustics, see under that title	

electro-acoustic demonstration studio	10,196	formation of images	8, 51	use	1,353
intensity of different sources	2, 54	localization "in front" and "behind", angle of elevation	6,359	optical telephony	1,152
pitch, perception of	5,286	principles	5,107	rectifiers for small telephone exchanges	1,295
radiation:		recording on gramophone disk	5,182	repeaters	2,209
pressure measurements	1, 82	recording on Philips-Miller film	6, 80	switchboard wire	6, 85
theory and models	4,213	Street lighting , see Illumination		ultra short wave—connections:	
recording:		Stroboscope	8, 25	Eindhoven-Nijmegen	2,299
gramophone records, simple apparatus	4,106	Structure analysis, X-ray:		Eindhoven-Tilburg, first installation	2,171
machines for sound film	5, 74	methods:		Eindhoven-Tilburg, with frequency modulation	8,121
Philips-Miller system, see under that title.		apparatus with Geiger counter	10, 1	with moving automobiles	8,193
reproduction:		Debye-Scherrer-camera	10,157	for the tropics	5,315
compression and expansion	3,204	general	1, 29	Telescope mirrors	6,120
duplication of concerts	10,169	"sensitive" lines	1,253		1,358
fortissimo and pianissimo	2,266	X-ray tube for—	3,259		
in radio apparatus	5,115	applications			
spectra:		survey	5,157		
acoustic spectroscope	4,290	analysis of mixtures	1,158		
light diffraction by sound film	3,298	crystal defects	2,254		
recording apparatus for frequency analysis	7, 50	crystal size	2,255		
stereophony , see under that title		identification	1, 31		
synthetic sound	4,167	mixed crystals	1,220		
tone generator	5,263	recrystallization	1,253		
units	2, 47	strains	2, 29		
Sound diffusers in loud speakers	5,243	texture investigation , see under that title			
Sound film:					
copying with metal-diazonium system	9,298	Studio equipment:			
distortion with oblique slit	6,110	broadcasting studios	4,136		
light diffraction by—	3,298	electro-acoustical demonstration studio	10,196		
machines for recording and reproduction	5, 74	new principles of construction	6,139		
noise in reproduction, counter-acting	8, 97	peak-voltage meter for—	7, 20		
Philips-Miller system, see under that title		see also Auditorium acoustics			
problems in reproduction of—	9, 65	Supèrheteterodyne reception, demonstration model	1, 76		
Spinels	9,185	Super-regenerative receiver	5,315		
Springs:		Surge protection of overhead lines	2,225		
conical disk—	10, 61	Surveillance system with infrared rays	1,306		
helical—	9, 85	Switchboard wire for telephone installations	6, 85		
Spring balance	1,126	Synchronization , see Facsimile and Television			
Stability of triode-oscillator	7,171	Synchronizers for flash-light photography	2,334		
Stabilization of voltage		Synthetic sound	4,167		
D.C. generator,— by means of triodes	3, 97	Telephony:			
"preserving" rectifier	9,231	carrier telegraphy	8,206		
rectifier for telephony exchanges	6, 39	carrier telephony:			
— with highly saturated iron core	2,276	on coil-loaded cables	4, 20		
stabilizing tube	8,272	distortion in loaded cables	4, 79		
voltage supply, low tension	6, 54	carrier supply (17 channels)	8,137		
voltage supply for electron microscope	10,135	equalization of cables (17 channels)	7,184		
Starter switch for fluorescent lamps	10,141	filters (17 channels)	7,104		
Starting resistors, automatic	1,205	maintenance measurements	8,249		
Steel:		modulators	7, 83		
austempering	6,279	principles	6,325		
examination with disk test	1,183	selenium rectifiers for modulators	9,267		
magnet steel, see under that title		signalling with carrier waves	8,168		
Stereophony		48-channel system			
apparent elevation	9, 8	method of modulation	9,161		
condenser microphone for—	9,330	construction	10,353		
deaf-aid apparatus with—	4,316	change-over to emergency apparatus	8,310		
duplication of concerts	10,169	loading coils			
		core material	2, 77		
				Tracers:	
				isotopes used as tracers	8,296
				technique of tracer method	8,330
				Transforming D.C. into A.C., see Vibrator	
				Tone generator:	
				for 440 c/s, with string	4,205
				up to 16000 c/s	5,263
				up to 100 000 c/s	8,251
				Topology and electrical networks	5,324

Transmitters:		X-ray:	
broadcast — in the Netherlands	6, 1	diagnostics:	
rotating directional aerial for PCJ transmitter	3, 59	apparatus for mass chest survey	10,105
short wave station PCJ	3, 17	camera photographs	5,258
television —, see Television.		fluoroscopy (protection against radiation, observation of objects)	4,114
transmitter-receiver installations:		fluoroscopy with enlarged image	8,321
for aeroplanes	1,114	high voltage rectifier valves for —	8,199
for automobiles	5,315	localization of objects (projectiles)	5,309
for the tropics	6,120	miniature apparatus for dentists (Oralix)	10,221
Eindhoven-Nijmegen	2,299	organization of tuberculosis detection	1,335
Eindhoven-Tilburg	2,171	scattered radiation in X-ray photographs	8,183
idem, with frequency modulation	8,121	small apparatus (Centralix, Practix)	6,225
modulation	8,193	universal apparatus with automatic current adjustment	6, 12
Transmitting valves:		universal apparatus with exposure technique indication	10, 37
air-cooled —	4,121	diffraction diagrams:	
characteristics, recording with cathode-ray tube	9,171	Debye-Scherrer-camera	10,157
development till 1937, manufacture	4, 56	spectrometer with Geiger counter	10, 1
discharge phenomenon (Rocky Point effect)	6,208	survey of interpretation and applications	5,157
gas-filled triodes	1,367	for special applications, see under Structure analysis and Texture investigation	
hum of —	5,100	directing instrument for femur-neck nailing	8,237
pentodes	2,257	dosimeter	10,338
for ultra short waves:		irradiation of flower bulbs	2,321
technological problems	6,253	material testing, see under that title	
for 100 M.c/s	10,273	photographs:	
magnetrons, see under that title		camera photographs	5,258
velocity modulation valves, see under that title		density meter for X-ray films	5,331
use in h.f. furnace	1, 53	short exposure times (10^{-6} sec.)	5, 22
use for short wave therapy	7,147	stereoscopic —	5,309
water cooled, with increased turbulence	10,239	welding process (transfer of drop)	1, 26
Transmutation, 1250 kV-apparatus for —	6, 46		4, 9
Triodes, see Radio valves and Transmitting valves		protection against radiation	1, 62
Triode-oscillator		scattered radiation in — photographs	8,183
analysis of action	7, 40	screens:	
stability	7,171	blurring of image	9,364
Tuberculosis-detection by large scale X-ray examination:		light-emission	9,321
organization	1,335	structure analysis, see under that title	
principle of X-ray camera photography	5,258	therapy	
apparatus for mass chest survey	10,105	contact — apparatus	8, 8
Tulips, forcing of	10,282	with 10^6 V tube	4,153
Tungsten:		400 kV-installation	8,105
preparation	4,309	tubes:	
recrystallization	2, 29	for structure analysis	3,259
thorium in —	1,188	for therapy up to 10^6 Volts	4,153
working (photograph)	5,121	hard glass — in oil	6,309
α - and β -modification	1,190	with rotating anode (Rotalix-tube)	3,292
Tungsten ribbon lamps	5, 82	small-focus tube	8, 33
Tunnels, illumination	10,299		
Ultra short waves		Zirconium	
cavity resonators	8,149	preparation and use	3,345
impedance measurements, see under that title	9, 73	use as getter	5,217
Lecher systems	6,240		
noise in — reception	5,172		
resonant circuits for —	6,178		
valves:			
behaviour of amplifier	1,171		
valves at v.h.f.	3,103		
amplifier — with double cathode connection	5,357		
push-pull amplifier —	5,172		