

# UFO Interference With Vehicles and Self-Starting Engines

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Disruption of automobile engines by UFOs is a familiar phenomenon. Less well known are instances where an engine that had been killed comes back to life again when the UFO departs, that is, the engine restarts itself without assistance from the driver. Twenty-seven such cases are summarized. A key observation by a mechanic whose engine had been stopped by a UFO suggests a mechanism by which self-starting might be understood. Should a non-firing engine come to rest with one cylinder past top-dead-center, it would entrap a suitable mixture of fuel and air to be ignited by the next arriving spark thereby cranking the engine. Such an event might result from collapse of a gaseous discharge across open breaker points in the distributor. If the discharge had been sustained by ionization of the atmospheric gases caused by the UFO, it would collapse shortly after departure of the UFO.

## Introduction

Unidentified flying objects are frequently reported to have exerted some influence upon the physical environment. All of these events are full of technical implications. One category in particular draws attention because of the promise that much scientific knowledge may be gained from it. A large number of UFO sightings have been made at the same time that a vehicle being driven by the witness suffered some sort of malfunction. UFOs appear to exploit a technology in advance of our own. But there is no reason to assume that the mechanisms by which vehicle interferences take place are beyond the capacity of contemporary science. On the contrary, design of internal combustion engines is a sophisticated endeavor. Engineers who design engines or others who understand them should be able to analyze any phenomenon that causes their failure. At least, every prospect encompassed by existing knowledge should be explored before appealing to esoteric theories.

Progress in understanding very complex subjects sometimes proceeds upon recognizing a basic structure, or pattern, that is inherent in the problem. Most students of UFOlogy fully appreciate the variety of details relating to vehicle interferences. But most of them fall conveniently into the following categories:

1. **Engine Disruption And Failure.** A normally operating engine begins to run roughly and loses power, with accompanying reduction in speed. It may shortly resume normal operation. Either following the disruption, or occurring suddenly, the engine simply stops running altogether.
2. **Failure To Restart.** Efforts of the operator to start the engine are unavailing in the presence of a UFO. Usually, it can be turned over, but does not catch. After the UFO has departed, however, starting is again normal. In a few instances, permanent damage has been suffered.
3. **Self-Starts.** Without any assistance from the operator, the engine starts by itself at the time the UFO flies away or very shortly thereafter.

## **Hypothesis to be Investigated**

Scientific progress is frequently achieved by a single hypothesis having a wide range of implications. A number of different suggestions intended to resolve separate elements of the overall problem, known as ad hoc hypotheses, is an offense to science. They are eventually supplanted by a more comprehensive and useful concept. The hypothesis to be investigated here is that -

The proximate cause of engine interferences in the above categories is ionization of the atmosphere. (Reference 1) (Ionization is the process by which electrons become detached from their parent atoms, leaving as separate particles the electron itself and the positively charged remnant of the atom that is called an ion.

## **Engine Disruption and Failure**

UFOs evidently ionize the atmosphere. Luminous, colored halos sometimes surrounding them must be produced by the recombination of free electrons with ions of the atmospheric gases. (Reference 2) At other times UFOs are reported to be buried inside a dazzling white cloud that is clearly a plasma, a highly dissociated state of electrons and ions. Beyond the luminous boundary one would expect that gases are also being ionized but to a lesser degree. Witnesses repeatedly tell of feeling electricity in the air, hair standing up, prickly sensations, or electrical shocks. Such expressions point directly to electrical phenomena. They are well enough understood, but investigators may have no mental framework into which the message can be fitted, so they may be ignored or forgotten.

Until recently it has been nearly impossible to deal with engine interference cases properly because the mass of data was so widely scattered throughout the literature. It would have required a monumental effort to collect the cases, summarize them, perform statistical analyses, and publish a reference document. But two such documents have now become available. One by the British UFO Research Association (BUFORA) in 1979 (Reference 3) and the other by the Center for UFO Studies (CUFOS) in 1981 (Reference 4). Their respective authors, Geoffrey Falla and Mark Rodeghier, deserve admiration and gratitude for these outstanding contributions. It is now relatively easy to scan the worldwide record of vehicle interferences.

Where was the witness when his engine failed? -- In the driver's seat. What could he see when looking under the hood at a dead engine? -- Nothing. Where was he when attempting to re-start the car? -- Back in the driver's seat. These circumstances contrive to prevent the witness from observing anything significant, except in one crucial case. (Reference 5) Relevant details of that case are extracted from the British summary. As a very bright light approached a car it mimicked several series of flashlight signals. "...The car radio started to be affected and the engine faltered, the interior of the car became very hot, then the engine failed completely. The driver got out of the car, noted that the object was directly overhead and felt a *prickling sensation like small electric shocks*. He lifted the car hood and *asked his wife to try to start the engine*. The engine turned over, but *sparks were seen to jump from the plug leads across the coil to the metal side of the car* and back again. The man was a master mechanic and had never

seen such an effect before. As another vehicle approached the *object moved away at high speed. The car engine could then be started immediately....*" (Emphasis supplied by the present author.) It is fortuitous that this event took place at 10 o'clock at night as the sparks may not have been noticed in daylight. So of several hundred cases of engine interference, we have one in which the cause was actually observed. And by a mechanic at that:

What does this mean? Very strong electrical surges of 15,000 to 20,000 volts are delivered to the spark plugs through heavily insulated wires. These wires fan out from the distributor to each plug, lying rather snugly to the engine block and grounded components. In normal operation, rubber insulation plus that provided by spatial separation assures that the electrical surge is delivered to the plugs. The insulating properties of air are impressive. It can sustain an electrical tension without breakdown of about 76,000 volts per inch. For a wire carrying a charge of 15,000 volts only half an inch from the engine block, the electric field strength would be roughly 30,000 volts per inch; so the margin for preventing the charge from shorting out is not great. Now comes a UFO that ionizes the air. Free electrons in such a strong electrical gradient will be accelerated. They will quickly acquire sufficient speed and kinetic energy to knock electrons off of other atoms. These, in turn, produce grandchildren, etc. The net result is an avalanche of charge as the atmosphere breaks down in a spark. By this method, Geiger counters register the passage of a single ionizing particle. Once the charge has been dissipated to ground, the conducting path heals itself. This mechanism would prevent the high-voltage surge from reaching the spark plugs. The onset of this condition would first be observed as a disruption of the engine when one or a few cylinders was starved, because their wires were closer to ground or their insulation had deteriorated. When a sufficient number of cylinders do not receive a spark, the engine will fail.

### **Failure to Restart**

Having reached a possible understanding of how UFOs could interfere with internal combustion engines, it is relatively simple to see why the engine might not restart as long as the UFO is present. Turning the ignition switch will crank the engine, but it could not be started as long as high-voltage pulses intended for the spark plugs are shorted to ground by the breakdown of ionized air. There is another sub-category of this phenomenon, namely, cases in which the starting motor reportedly refuses to crank the engine at all. This problem, focusing upon the starter solenoid, is extremely complex, and since it is apparently unrelated to ionization, it must be set aside for the present .

### **Self-Starts**

The most exasperating aspect of engine interference cases is the claim that an engine started by itself when the UFO departed, even though the driver's efforts were futile while it was nearby. This is such a ridiculous notion that even trained mechanics scoff at it. Others find it an impossible concept. (Reference 6) Yet it has happened, if witnesses are to be believed at all. Appendix A gives 27 abstracts of cases taken from the Rodegheir catalogue. Obvious push-starts are not included and the list may not be comprehensive.

Rodeghier found a total of 268 engine failures not including, of course, instances of mere rough running or loss of power. Comparing this number with the 27 self starts, one sees that the latter phenomenon is rare, amounting to only about 10% of the time. At any rate, these cases are adequate to establish some essential factors for self starting. The presence of a UFO is obviously required, usually at rather short range. (No mysterious engine failures followed by self starts are known to the author to have been reported apart from a UFO sighting.) Self- starts occur only in conjunction with departure of the UFO, either simultaneously, within seconds, or a few minutes at most. Cars, trucks, vans, and motorcycles are subject to the phenomenon. All are presumed to have had internal combustion engines using spark plugs as none of the available summaries indicated diesel engines. Based upon conditions within the engines that are necessary for self starting, the rarity of these events will become explicable.

Most people have a pretty clear, if not detailed, idea of how car engines work. Electric current from the battery flows through the primary circuit of the coil until it is broken by the opening of the breaker points. The resulting collapse of a magnetic field in the coil induces a high-voltage surge in the secondary windings that is distributed in a certain order to the spark plugs. A fuel-air mixture is then ignited to create high pressure within the cylinder. Not so well known is the fact that the spark is normally timed somewhat early because the propagation of the flame front in the cylinder and the build up of pressure are relatively sluggish. At idling speed, the spark is ignited while the cylinder is still approaching top-dead-center (TDC) on the compression stroke. It is usually set at about 5 degrees of crankshaft rotation ahead of TDC, but automatic devices advance it much farther in proportion to the engine speed.

There is a natural threat of sparking across the opening points that would rapidly erode the point surfaces. To offset this problem, a small condenser is included in the circuit to take up the current temporarily when the points open. Thus sparking is prevented. If the air around the points was ionized, however, an electrical breakdown between the points would be likely. Fairly high electrical field strengths exist at the instant of point separation. With a supply of free electrons and ions around the points, a spark over could easily occur and persist while the points continued to recede to their maximum spacing. Such a current is technically known as an arc discharge. These arcs, having a negative resistance characteristic, produce a runaway current unless it is limited by resistance in the circuit itself. As the current under normal conditions is limited by the resistance in the primary circuit, it will be limited in the arc to exactly the design value. Only when the UFO leaves the scene would the ionization be reduced until the arc could no longer be sustained. It would then extinguish itself instantly. As far as the electrical behavior of the primary circuit is concerned, this event would not be distinguishable from normal opening of the points, that is, a sudden breaking of the circuit. A strong surge must then be induced in the secondary circuit. It could then reach the spark plugs if departure of the UFO has removed the cause of such surges being shorted to ground. So a cylinder in a warm engine, being fully charged with a fuel-air mixture is ignited. If it had come to rest somewhat past TDC, the force due to firing will crank the engine gingerly. One need only remember how push-starts were done in manual shift cars. One cylinder firing and off you went:

Cranking of the engine would be effective from a cylinder position between a few degrees past TDC to 1200 or so. But the crankshaft rotates twice for each power stroke of a cylinder in a 4-cycle engine. So, as a first approximation, one could estimate the

favorable circumstances for a given cylinder to be about  $(120/2 \times 360) \times 100$  16.4%, if the rest position was purely random. However, it is not. Cylinders act in pairs with one in the compression stroke being balanced by another in the power stroke. If the valves opened and closed at exactly 0 and 180-degrees, the trapped gases in a non-firing engine would merely act as efficient springs, balancing out the net torque on the shaft. Again, because of the relatively sluggish movement of the gases into and out of the cylinders, valves are timed to operate in anticipation of these two angles. A net torque causes a coasting and stopping engine to approach, then slightly back away from TDC. Its companion would correspondingly approach and slightly back away from its bottom position at 180-degrees, an unfavorable location for self starting. Hence the probability of favorable circumstances for a given cylinder should be much less than 16%. Furthermore, if the engine remained dead for a long time, the fuel-air mixture would leak out past the rings, making self starts impossible. The duration of engine failure is seldom reported, but it must be limited to a matter of minutes, or even to several seconds. While calculating the probability of self starts seems to be impossible, these conditions illustrate why it is so small in the case histories.

One would expect stronger influences upon automobiles from UFOs that are quite close. This question was subjected to statistical analysis by Johnson who found that the distance factor was strongly related to engine disruptions and failures. (Reference 8) Fifty-six cases were subdivided into three groups according to whether the UFO was closer than 30 meters, between 30 and 120 meters, or beyond 120 meters. This corresponded to a grouping of the data and changes in the selected cut offs had no effect. Of a total of 43 failures, the number of events in the three categories were 16, 18, and 9, respectively. In other words, 79% of the failures were produced at distances less than 120 meters. The maximum recorded distance for engine failure was not given.

Additional data on this point is available from Rodeghier in the form of a bar chart. (Reference 9) Distances were broken down generally into increments of 200 feet, but intervals of 50 feet were used in the first 200 feet. By estimating from the scale and suitably combining the first four categories, one obtains the following results:

<b>Range (ft)</b>	<b>Number of Events</b>
0-100	64
100-200	28
200-300	14
300-400	15
400-500	6
500-600	7
600-700	3
700-800	5

From 800 to 2,000 feet the distances were clustered in four intervals of 200 feet, then one of 400 feet, and finally, one for all distances beyond 2,000 feet. Therefore, the above table cannot be extended further. Let it suffice to observe that the remaining data give a fair approximation to an exponential tail. A surprising total of 15 cases were

greater than 2,000 feet. The importance of UFO proximity is clearly evidenced by the large number of cases within 100 feet and the steady fall-off out to 800 feet. The above table certainly suggests a decrease in the influence from UFOs according to the inverse square of the distance, as would be the case for isotropic radiation. The data are somewhat contaminated, however, by a few instances where beams of "light" were directed at the vehicles.

Many cases in the record do not give information on the distances of the UFO possibly because the size was not known and no distance could be judged, or the event took place at night so reference points were missing, or the investigator didn't ask. So it is with the record of self starts. Of the 27 such cases under review, estimated distances are available for only 10, but they are instructive. The distance figures are 12, 25, 45, 60, 200, 300, 600, 1000, and greater than 2000 feet. Four cases are within 100 feet, but others range to beyond 2000 feet. It seems that the previous table of general interference and these self starts are consistent; proximity increases the likelihood of the effect. There is no threshold distance within which it takes place, and interference may take place up to a half mile or more.

### **Cause of Ionization**

What possible means could cause ionization in the engine compartment and inside the distributor housing? One prospect would be the photoelectric effect that pries electrons out of material surfaces up on absorption of a photon. As iron is in great abundance under the hood, it should be suspect. The energy required to pull an electron out of iron, called the work function, is 4.4 volts. Electromagnetic radiation having photons of that energy or greater would have to have wavelengths of

$2.76 \times 10^{-5}$  cm

or shorter, which lie in the ultraviolet region of the spectrum near the visible. This is the radiation used in psychedelic displays and because it is invisible it is called black light. It could enter the engine compartment through the air passages in the radiator or by scattering through the open areas around the bottom of the engine. As both the steel distributor housing and the phenolic cap are opaque to ultraviolet, it could not be responsible for ionization inside the housing. Therefore, this potential source of free electrons must be ruled out. Another possibility would be direct photoionization of the air molecules. But again, the photons would have to be in the ultraviolet. Many natural materials exhibit fluorescence, but none has been reported in the vicinity of UFOs. It is unlikely that UFOs emit ultraviolet radiation, because there is no evidence indicating that they do.

On the other hand, radiation in the microwave region has long been suspected as contributing to UFO effects. Wavelengths in the range from 0.5 cm. down to 0.5 mm. are resonantly absorbed by oxygen molecules and water vapor. (Reference 10) The absorption throws the absorbing molecules into higher states of rotation, but that energy is instantly transferred to neighboring molecules by collision. The increased kinetic motion of some receiving molecules should become vigorous enough to dislodge electrons. Considering what is suspected about other aspects of such radiation near UFOs, microwave radiation should be considered as a candidate means of ionization.

## Conclusions

The hypothesis that ionization of the atmospheric gases by UFOs appears to have some merit. It has pinpointed physical processes that can clarify the malfunctioning and killing of engines and, in particular, the hitherto incredible claims that engines restarted themselves. It teaches us that credence should be lent to sighting reports no matter how bizarre their content. The success of the hypothesis also implies that some UFOs are probably physical machines because their reported influence upon motor vehicles is physical. Radiation from UFOs is apparently associated with their propulsion system and every effort should be made to determine all the electromagnetic parameters. In doing so, one would expect to find, not a group of accidental quantities, but an integrated design optimization by those who manufacture UFOs.

Concepts discussed here are subject to experimental verification. Although the equipment required may not be available to an independent researcher, it could easily be assembled by a substantial laboratory. A research program is envisioned in three stages:

1. Investigate individual components of the electrical system in a simulated environment to establish the level of ionization required to produce high-voltage sparks and low-voltage arcs.
2. Attempt to disrupt running engines with simulated sources of ionization such as a radioactive source lowered into the engine compartment and, particularly, near the distributor.
3. Measure the ionization produced by microwave radiation over a broad range of wavelengths and intensities. Then flood a running engine with ionizing microwaves, measuring the level of ionization and microwave intensity. Determine the values required to produce engine malfunction and stoppage. Test the present hypothesis concerning selfstarts and measure the relevant factors.

This program, while modest, could go far toward elucidating the observed phenomena and, more importantly, quantifying the radiation that may be emanating from UFOs. Should results prove to be unproductive, then research can be redirected away from microwave radiation in continuing efforts to understand the numerous puzzling details of UFO reports.

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(NICAP note: Appendix chart A below is abbreviated with only the date, time, location & vehicle shown, for use with the NICAP search engine to locate case information by keyword. The GIFs of each full page can be found onsite by clicking the active link preceding each abbreviated page)

### APPENDIX A. Vehicle Selfstart Cases (from Rodeghier)

Date	Time	Location	Vehicle
Spring 44 or '45	????	Auberry, CA	car
Dec 8, 1957	1730	Woodward, OK	car
Aug 5, 1962	0145	Argentina	truck
May 10, 1964	2130	Argentina	van
Jan 14, 1965	2200	Enfield, NH	car

Oct 8, 1965 0025 England car  
Nov ?, 1966 2300 Belgium motorcy  
Feb 13, 1967 2200 Bigfork, MT pickup  
Apr 10, 1967 1920 Jonestown, PA car  
Oct 11, 1967 2000 Canada car  
Dec 24, 1967 Evening Tucson, AZ car  
Jul 25, 1968 Argentina car

Feb 2, 1969 Night Chile 2 cars  
May ?, 1972 U.S.S.R. car  
Jul 25, 1972 Evening Australia car  
Nov 10, 1972 2300 England motorcyc  
Jan 1, 1973 Midnight Chile car  
Feb 9, 1973 0300 England car  
May 2, 1973 1930 Australia truck  
Jul 21, 1973 2100 France car  
Oct 24, 1973 2100 Dobson, NC car  
Jan 24, 1974 1600 Belgium car

Apr ?, 1974 Evening Belgium car  
Dec 23, 1975 2300 Goodridge, MN car  
Sep 17, 1976 0330 Australia car  
Jun 23?, 1977 0515 South Africa van  
Aug 24, 1978 2200 Ottumwa, IA car

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## APPENDIX B. HISTORICAL MUSING

The only reported self-start prior to 1957 occurred in the spring of 1944 or 1945 in Auberry, California. As this predated the wave of 1947 by 2 or 3 years the case may be suspect, but it is provisionally accepted at face value. (Reference 11) As there were a great many UFO sightings in the decade from 1947 to 1957, one wonders about the paucity of self-start reports in that period. Whether witnesses were reluctant to report them or UFOs were keeping greater distances from automobiles will never be known, but the timing is curious. It is possible that the onset of self-start reports began in 1957 because of design changes about that time in the electrical system of automobiles. In 1953 the luxury cars (Buick, Cadillac, Chrysler, and Oldsmobile) converted from 6-volt to 12-volt electrical systems. Other manufacturers followed suit and by 1957 all new American cars (except Willys) had adopted the 12-volt system. (Reference 12) European manufacturers made a similar transition with a delay of about 5 years. Of course, in 1957 the majority of cars on the road still were 6-volt.

In the new designs, the 6-volt coil was retained, but a resistor was added to the primary circuit to limit voltage at the points to 6 volts. Various methods were developed to switch this resistor out of the circuit when the engine was dead to allow for easier starts

with the full 12 volts across the points. It is then switched into the circuit during operation, since the use of 12 volts for extended periods would erode the points. So automobiles began in 1953 to have 12 volts across the points, whereas prior to that year they all had 6-volt systems. The question is whether the arc discharge herein postulated is substantially easier to generate and sustain in the newer systems. Applying a large voltage across a gap of air produces a weak trickle of current that increases as the voltage is increased. At the time of electrical breakdown of the air, the current rises to very high values and the voltage drops across the gap to about the ionization potential of the gases in it. (Reference 13) Ionization potential is the energy required to remove an electron from a molecule or an atom. For the principal constituents of air, molecular nitrogen and oxygen, the ionization potentials are respectively 15.8 ev and 11.2 ev. (An electron volt, ev, is the kinetic energy acquired by an electron being accelerated through an electrical potential difference of one volt.) For trace gases the ionization potentials are higher. So a potential difference of 12 volts across the gap would accelerate electrons to energies sufficient to ionize oxygen. This additional source of free charges would certainly improve the chances of sustaining an arc. The mechanism would probably be ineffective in a 6-volt gap because the accelerated electrons would not acquire sufficient energy to ionize the gases.

#### REFERENCES AND NOTES

1. A previous suggestion by the author that increased resistance of the tungsten breaker points due to absorption of microwave radiation caused engine failure may be incorrect and, for the present, must be disregarded. Such is the nature of research. McCampbell, James M., "Further Evidence of UFO Radiation," MUFON Symposium Proceedings, (Scottsdale, Arizona, July 16 and 17, 1997).
2. McCampbell, James M., UFOlogy, Chapter 3, "Composition and Luminosity," (Celestial Arts, 1976).
3. Fallas, Geoffrey, Vehicle Interference Project, edited by Charles F. Lookwood and Anthony Pace, British UFO Research Association, 1979).
4. Rodeghier, Mark, UFO Reports Involving Vehicle Interference, A Catalogue and Analysis, edited by Mimi Hynek and Sanna Hans Longden, (Center for UFO Studies, October, 1981).
5. Originally published as an apparent series of articles by Bill Chalker, Road Hazard, Conclusion, AFRO Bulletin, Vol. 25, No. 2, pp 1 and 3. This case was summarized by Falla, then independently by Rodeghier. Extracts of key elements from the Falla summary, verified by consulting the original report, are used as the details relating to electrical phenomena and were omitted in the Rodeghier version. This deficiency illustrates the problem of producing summaries, namely, the absence of guidelines for assuring preservation of significant details.
6. Rodeghier, op cit, p. 128, well expresses a widely held opinion as follows regarding "...the act of disappearing and re-starting of a vehicle's engine by itself. These last two characteristics are positively associated, not surprisingly, because both are nonsensical, extraordinary, unphysical events. Things do not disappear, nor machines start themselves, at least in this world." And again on p. 131, "It is true that the engine was

reported to have started by itself, but that only confirms the messy nature of the EM data and the need for statistical methods to sort out patterns." The messy nature of the data is readily acknowledged, but statistical methods, while powerful and revealing in the larger view of things, must give way to the perspectives of engineering and science in the analysis of details.

7. The assistance of Richard K. Sooy is gratefully acknowledged. He is the owner/manager of a modern service station, Carlmont Village Shell, 2000 Ralson Avenue, Belmont, California and holds, among other qualifications, a current certificate in Engine Tune-Up from the National Institute for Automotive Service Excellence. He also provided access to some old repair manuals that must be quite rare.

8. Johnson, Donald A., The Effects of Position and Distance in UFO Ignition Interference Cases, *Journal of UFO Studies*, 1981, 3\_, (in press). He also presented a paper at an international conference sponsored by CUFOS, "Size, Distance, and Duration Parameters of the Ignition Interference Effect," *Proceedings of the 1981 CUFOS Conference*, Evanston, Illinois, CUFOS 1981, (in press). Three variables found to be significant were (a) duration of the event, (b) size of the UFO, and (c) distance to the UFO. Sophisticated statistical methods showed that disruption cases were associated with brief encounters with small objects. Also, that complete stalling was associated with the observation or contact with strange creatures. This cannot do justice to the work that is eagerly awaited in the open literature.

9. Rodeghier, op. cit., p. 82.

10. Technical data were reviewed in McCampbell, James M., "An Hypothesis Concerning the Origin of UFOs -- Horses Under the Hood," *Thesis - Antithesis Proceedings*, (Los Angeles and Orange County Chapters of the American Institute of Aeronautics and the Los Angeles Chapter of the World Futures Society, September 27, 1975, p. 37).

11. Bloecher, Ted, *Report on the UFO Wave of 1947*, privately published, 1976. The classical sighting by Kenneth Arnold, marking the onset of the modern era for UFOs, was accompanied during June and July, 1947, by "many hundreds" of sightings in the United States. A truly remarkable document".

12. *Motor's Auto Repair Manual*, 21st Edition, The Hearst Corporation, 1958.

15. This subject is covered to various degrees in many textbooks on atomic physics and electronics. An excellent, general reference that is available in many libraries is the *McGraw-Hill Encyclopedia of Science and Technology*, 1967. Articles are accessible through the index volume.

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