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# DAYLIGHT SAVING TIME ACT OF 1975

GOVERNMENT

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## HEARING

BEFORE THE

### COMMITTEE ON COMMERCE

### UNITED STATES SENATE

NINETY-FOURTH CONGRESS

FIRST SESSION

ON

### S. 980

TO AMEND THE UNIFORM TIME ACT OF 1966 IN ORDER TO PROVIDE THAT DAYLIGHT SAVING TIME SHALL BEGIN ON THE FIRST SUNDAY IN MAY AND END ON THE LAST SUNDAY IN SEPTEMBER IN EACH YEAR

### S. 2566

TO PROVIDE FOR DAYLIGHT SAVING TIME ON AN EIGHT-MONTH BASIS, BEGINNING WITH THE LAST SUNDAY IN FEBRUARY AND ENDING WITH THE LAST SUNDAY IN OCTOBER, FOR A TWO-YEAR PERIOD BEGINNING WITH THE LAST SUNDAY IN FEBRUARY OF 1976 AND TO REQUIRE THE FEDERAL COMMUNICATIONS COMMISSION TO PERMIT CERTAIN DAYTIME BROADCAST STATIONS TO OPERATE BEFORE LOCAL SUNRISE

NOVEMBER 13, 1975

Serial No. 94-47

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DAYLIGHT SAVING TIME ACT OF 1915

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# PROPOSED CHANGES TO THE UNIFORM TIME ACT OF 1966

THURSDAY, NOVEMBER 13, 1975

U.S. SENATE,  
COMMITTEE ON COMMERCE,  
*Washington, D.C.*

The subcommittee met at 11:30 a.m. in room 2228, Dirksen Senate Office Building, Hon. Wendell Ford presiding.

## OPENING STATEMENT BY SENATOR FORD

Senator Ford. Today the Senate Commerce Committee will hold hearings on proposals to amend the Uniform Time Act of 1966. I hope each of the witnesses today will specifically address themselves to my proposal and that of Senator Huddleston, to have daylight saving time 5 months a year and the proposal of Senator Stevenson to have daylight saving time 8 months a year for the next 2 years.

In 1973, the Congress enacted the Emergency Daylight Saving Time Energy Conservation Act of 1973 in the context of the overall national effort to conserve energy.

At that time, I was Governor of the State of Kentucky and I saw that the effects of daylight saving time in deep winter months were not confined to energy impacts.

Fortunately, the Congress had the foresight to include in that legislation a requirement that the DOT conduct a thorough study of the Nation's experience under daylight saving time. That report was filed with Congress in August of this year. The Secretary of Transportation has sent his representative here today to discuss that report with us.

Changes in time zone boundaries or time standards inevitably impact every citizen of the United States. Time zone boundaries and time laws shifts affect the convenience of commerce and the scheduling of commercial transactions. Sunrise and sunset times affect recreational opportunities and related industries. They affect family commuting patterns and travel hazards at different times of the day. Time patterns also affect energy consumption. In the aggregate, there may be some small net national savings. But this is only at the expense of many individuals who must use more energy; and that translates into higher electricity bills at the end of the month.

The eastern half of Kentucky is in the westernmost part of the eastern time zone, so its sunrises occur as much as 1 hour and 15 minutes later than cities on the Atlantic coast. That affects the way business is conducted, the way school transportation is conducted, and the psychological attitudes of people as they awake each day in darkness rather than daylight.

I look forward to hearing the witnesses today as they address the need for commercial uniformity in the time laws, the energy impacts that have been identified from extended daylight saving time, and the

Staff member assigned to this hearing: Nicholas Miller.

inconvenience and hazards which individuals feel under extended daylight saving time.

[The bills follow:]

94TH CONGRESS  
1ST SESSION

**S. 980**

---

IN THE SENATE OF THE UNITED STATES

MARCH 6, 1975

Mr. FORD (for himself and Mr. HUDDLESTON) introduced the following bill; which was read twice and referred to the Committee on Commerce

---

**A BILL**

To amend the Uniform Time Act of 1966 in order to provide that daylight saving time shall begin on the first Sunday in May and end on the last Sunday in September in each year.

1        *Be it enacted by the Senate and House of Representa-*  
2        *tives of the United States of America in Congress assembled,*  
3        That section 3 (a) of the Uniform Time Act of 1966 (15  
4        U.S.C. 260a (a) ) is amended by striking out "During the  
5        period commencing at 2 o'clock antemeridian on the last  
6        Sunday of April of each year and ending at 2 o'clock ante-  
7        meridian on the last Sunday of October of each year" and  
8        inserting in lieu thereof "During the period commencing at  
9        2 o'clock antemeridian on the first Sunday in May of each

1 year and ending at 2 o'clock antemeridian on the last Sun-  
2 day in September of each year''.

3 SEC. 2. The amendment made by this Act shall become  
4 effective at 2 o'clock antemeridian on the last Sunday in  
5 September 1975.

94TH CONGRESS  
1ST SESSION

# S. 2566

---

IN THE SENATE OF THE UNITED STATES

OCTOBER 23, 1975

Mr. STEVENSON introduced the following bill; which was read twice and referred to the Committee on Commerce

---

## A BILL

To provide for daylight saving time on an eight-month basis, beginning with the last Sunday in February and ending with the last Sunday in October, for a two-year period beginning with the last Sunday in February of 1976 and to require the Federal Communications Commission to permit certain daytime broadcast stations to operate before local sunrise.

1       *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*  
3 That this Act may be cited as the "Daylight Saving Time  
4 Act of 1975".

5       SEC. 2. (a) Notwithstanding the provisions of section  
6 3 (a) of the Uniform Time Act of 1966 (15 U.S.C. 260a  
7 (a)), the standard of time of each zone established by the  
8 Act of March 19, 1918 (15 U.S.C. 261-264), as modified

1 by the Act of March 4, 1921 (15 U.S.C. 265), shall be  
2 advanced one hour during the periods commencing at 2  
3 o'clock antemeridian on the last Sunday of February 1976  
4 and 1977, and ending at 2 o'clock antemeridian on the last  
5 Sunday of October 1976 and 1977, respectively, and such  
6 time as so advanced shall for the purposes of such Act of  
7 March 19, 1918, as so modified, be the standard time of each  
8 such zone; except that any State with parts thereof in  
9 more than one time zone, and any State that lies entirely  
10 within one time zone and is not contiguous to any other  
11 State, may by law exempt the entire area of the State lying  
12 within one time zone from the provisions of this subsection.

13 (b) Notwithstanding any other provision of law, if a  
14 State, by proclamation of its Governor, makes a finding prior  
15 to the effective date of this Act, that an exemption from the  
16 operation of subsection (a) or a realinement of time zone  
17 limits is necessary to avoid undue hardship to conserve fuel  
18 in such State or part thereof, the President or his designee  
19 may grant an exemption or realinement to such State.

20 (c) Any law in effect on November 1, 1975, adopted  
21 pursuant to section 3 (a) (2) of the Uniform Time Act of  
22 1966 by a State with parts thereof in more than one time  
23 zone, or adopted pursuant to section 3 (a) (1) of such Act  
24 by a State that lies entirely within one time zone and is not

1 contiguous to any other State, shall be held and considered  
2 to remain in effect as the exercise by that State of the exemp-  
3 tion permitted by subsection (a) of this section unless that  
4 State, by law, provides that such exception shall not apply.  
5 (For the purpose of subsection A.)

6 (d) The provisions of subsections (b) and (c) of sec-  
7 tion 3 and section 7 of the Uniform Time Act of 1966 shall  
8 apply to the provisions of this section.

9 SEC. 3. (a) The Secretary of Transportation shall, on or  
10 before July 31, 1976, submit an interim report, and on or  
11 before July 31, 1977, submit a final report to the Congress  
12 on the operation and effects of this Act. Each such report  
13 shall give particular attention to such effects on the use of  
14 energy in the United States, traffic safety, including the  
15 safety of children traveling to and from school, and the effect  
16 on school hours. Each such report shall also include such  
17 recommendations for legislation or other action as the Sec-  
18 retary may determine. The final report shall include any  
19 recommendations of the Secretary with respect to time zone  
20 limits.

21 (b) The Secretary of Transportation shall consult with  
22 the departments, agencies, and instrumentalities of the  
23 United States having information or expertise with respect  
24 to the operation and effects of this Act, Each such depart-

1 ment, agency, and instrumentality shall exercise its powers,  
2 duties, and functions in such manner as will assist in carrying  
3 out the provisions of this section.

4 SEC. 4. The authority of the Secretary of Transportation,  
5 under the first section of the Act of March 19, 1918 (15  
6 U.S.C. 251), to modify the limits of any time zone is sus-  
7 pended until after the last Sunday of October 1977.

8 SEC. 5. Notwithstanding any other law or any regula-  
9 tion issued under any such law, the Federal Communications  
10 Commission shall, consistent with any existing treaty or  
11 other agreement, make such adjustment by general rules, or  
12 by interim action pending such general rules, with respect  
13 to hours of operation of daytime standard amplitude modula-  
14 tion broadcast stations, as may be consistent with the public  
15 interest, including the public's interest in receiving interfer-  
16 ence-free service. Such general rules, or interim action, may  
17 include variances with respect to operating power and other  
18 technical operating characteristics. Subsequent to the adop-  
19 tion of such general rules, they may be varied with respect  
20 to particular stations and areas because of the exigencies in  
21 each case.

Senator FORD. I would like to submit for the record the statement from my colleague, Senator Huddleston with regard to this legislation and ask that it be made a part of the record.

[The statement follows:]

STATEMENT OF HON. WALTER D. HUDDLESTON, U.S. SENATOR FROM KENTUCKY

I appreciate this opportunity to support legislation which I am cosponsoring with Senator Ford to shorten by approximately five weeks a year the period during which daylight saving time is in effect under the Uniform Time Act of 1966, and to strongly urge the committee to resist all efforts to extend the daylight saving time experiment which we have endured for the past two years.

In December, 1973 the Congress enacted the Emergency Daylight Saving Time Energy Conservation Act placing the nation on year-round daylight saving time for two years in the vague hope of significant energy savings. Upon the recommendation of the Department of Transportation following an interim report on the effects of the Act which was unable to document any of the positive effects many members of Congress had anticipated, the Act was amended last year to include a period of standard time from November 1974 through February 1975. And now, after two years of experimentation, the Department of Transportation is asking the Congress to extend that experiment for two more years on the strength of nothing more than indications of "modest overall benefits—difficult to isolate from the larger effects of seasonal variations and of changes in energy availability and prices." They want two more years "to permit further analysis and more effective measurement of public acceptance and response."

I can assure you that the people of Kentucky, and I'm sure that people of many other states, can give you a full analysis and an effective measure of their acceptance and response right now. Winter time daylight saving time has disrupted the working day of our farmers, forcing them to labor additional hours in the dark and making their daily routine more difficult. It has imposed immeasurable anxiety on parents forced to send their children to school in darkness. It has hindered commerce and inconvenienced the public in general—all in the vague hope of saving energy.

And still, after two years, we do not know that we are saving significant amounts of energy. Indeed, even the Department of Transportation concedes that the use of daylight saving time may encourage the use of additional energy in certain cases as workers get up in the coldest part of the day, as parents drive their children to school rather than permit them to walk along dark roads or take the bus or as a person decides to drive rather than wait in the dark for public transportation.

I have opposed extended daylight saving time from the time it was first proposed. I voted against its enactment and I have seized on every opportunity since then to get it repealed or at least amended. But, I would gladly reassess my position if the Department of Transportation—after two years of experimentation and study—could give us one shred of conclusive evidence that extended daylight saving time has had significant positive effects. But, after two years, we have only "indications of modest overall benefits—difficult to isolate from the larger effects of seasonal variations and of changes in energy availability and prices."

I believe now as I did then that the action taken in December of 1973 was the wrong action, and I believe that we should move now to rectify the mistake that was made. Certainly we should not perpetuate it.

Senator FORD. I am very pleased this morning to have my distinguished colleague here from the neighboring State of Ohio. Senator Taft, you may proceed.

STATEMENT OF HON. ROBERT TAFT, JR., U.S. SENATOR FROM OHIO

Senator TAFT. Thank you very much, Mr. Chairman and members of the committee. I am very happy to be here this morning and say a few words to this subject. I commend the committee for bringing it up for consideration because I know it is a matter of great concern. I know the committee has a full list of witnesses, so I will be brief.

I want to state to the committee at the outset, in my opinion, the citizens of Ohio are strongly opposed to the proposal that the 8-month daylight savings time be renewed for another 2 years.

I have seldom seen an issue where opinion in my State has been so united. The primary reason for this strong opposition arises from the fears of parents sending their children to school in the dark in the morning.

When this experimental program started, working parents had to rearrange their schedules as they wanted to drive their children to school in the dark while they were able to walk in the daylight. This also causes increased consumption of gasoline in our State. This may be off balance in some other areas as we noticed the Department of Transportation's study doesn't indicate any appreciable saving, one way or another.

Ohio is on the western side of the eastern time zone, so when daylight reaches the east coast, there is still another hour of darkness in Ohio.

I would particularly talk to the chart the committee has supplied, from the March 1 date and point out to the committee that for most of the State of Ohio, certainly the western half very fairly assumes that the daylight situation is compared to Boston, Mass., which was the same time zone, is at least an hour later in arriving.

So, even as you look at the chart here, you see that even on March 1, when you're beginning to move somewhat out of darkness hours, we are still talking about a sunrise that comes about 8:15 or 8:20 in the morning, and that I think is a very substantial hardship and just hope that the senators who are from the east coast will not be blinded by the fact that morning sunlight here in Washington or in Boston is an hour earlier than what you're dealing with in most of the State of Ohio.

I know that all Americans are aware of our energy crisis. We need to take significant steps to become independent of foreign energy sources.

The people of Ohio are willing to take any meaningful step in this direction, but every study has shown that year-round or 8 month daylight saving time produces little real energy savings.

The final report on daylight saving time issued by the DOT states that the imposition of 8 months daylight savings time versus 6 months would only bring a reduction of electrical load of 1 percent. Now, this isn't meaningful energy savings.

This saving of 1 percent of our electricity consumption translates into six-tenths of 1 percent of our daily consumption of 17 million barrels of oil per day.

Again, I repeat, this is not meaningful energy legislation.

I believe that the Congress is trying to enact a total energy program that will include deregulation to encourage exploration of new oil and gas, the establishment of a strategic oil reserve, an expanded research effort into new energy sources.

I support this effort and I believe the people support this program. However, they are unwilling to take token steps that do more harm than good.

Eight month daylight savings time is such a token piece of legislation that will do more harm than good in getting public support for energy conservation.

In reviewing the final report on daylight savings time, it is clear that there is no real advantage to its approval.

While each agency states that there would be no harm from passage, none states any significant advantage. I can assure you that parents of schoolchildren see one very large disadvantage and that is sending their children off to school in the dark.

Another, of course, of the major factors which ought to be of concern, I believe, particularly in view of our economic problems in this country and essentially economic problems in the construction industry is the fact that construction workers are greatly handicapped by this inconvenience in hours, whereas you say on the western side of the time zone you either work in the dark or change your hours to those which are desirable, and that doesn't coincide with the other working hours that they have tried to coincide with.

Mr. Chairman, I know that many other of my colleagues might wish to testify on this topic, so I will not take any further time.

I can only state once again that there is no significant energy savings provided by 8 month daylight savings time and I hope we in Congress will allow the 6-month program to once again be the national policy.

Thank you very much.

Senator FORD. Thank you Senator.

I appreciate your coming today. I am very glad to have you with us.

Senator STEVENSON.

Senator STEVENSON also has a daylight saving time proposal in which he is very interested.

Senator STEVENSON. I don't have a prepared statement. I think we should make it quite clear on the record, though, in addition to our proposals, there is also a proposal which I am cosponsoring for 9 months daylight saving time.

Senator TAFT, you have made your views on 9-month daylight saving time quite plain through your statement on 8-month daylight saving time.

Senator TAFT. I think it would follow that it would be that much worse; 7 would be better than 8; 6 better than 7.

Senator STEVENSON. I can certainly sympathize with the concerns which you have expressed, and I have heard them expressed by others representing other States, including Kentucky.

I do have to disagree with your observation about the energy savings. Even if the saving is as low as 100,000 barrels a day, which you indicate, I don't think that's all together—

Senator TAFT. That's talking about, of course, 2 months.

Senator FORD. I might inject here, if I may, those on the far western end of each time zone will have higher electrical bills; industries will have to turn their lights on earlier and heat up earlier, because of the difference in sunrise and sunset times.

In Kentucky, the western half of the eastern time zone has a sunrise over an hour later than the east coast. Therefore, daylight saving time creates an additional hardship on industry and creates additional hardships on the consumer because of the additional energy costs.

Senator TAFT. Thank you very much.

Senator STEVENSON. Thank you, Senator.

Senator FORD. Do we have anyone in the audience that needs to leave early?

Mr. BAKER. Yes.

Senator FORD. Will you come forward. Mr. Baker has a plane to catch at 1 o'clock, and he's asked that he be allowed to come forward at this time.

This is James E. Baker, superintendent, Middlesboro Schools in Kentucky. Mr. Baker, you may proceed.

STATEMENT OF JAMES E. BAKER, SUPERINTENDENT,  
MIDDLESBORO SCHOOLS, MIDDLESBORO, KY.

Mr. BAKER. Thank you, Mr. Chairman, and other members of the committee for allowing me to present my statement.

Yes, I am superintendent of schools in Middlesboro, Ky., and we go from the Cumberland Gap where it divides Tennessee from Kentucky, the southeastern area of the State, and other school superintendents, having conversed with a number of school superintendents in the eastern section, from the Ohio River, south to Tennessee, we have a position to take concerning daylight saving time.

We would support a program which would, and request that the Senate and the Congress of the United States support a daylight saving time that would put it on a minimum of 6 months of regular time and not more than 6 months of daylight time.

We would support the Senate bill and the reason for that is that in the mountain areas, our schoolchildren, those who are transported, and today, I think some 85 to 95 percent of the children are transported; many of them traveling at least 1 hour before daylight during the winter months.

These are over some very mountainous terrains, some secondary roads and as it is a rural area, most of these have to travel many miles.

I would want to remind you that the mountain range, the Appalachian Range runs generally from northeast to the southwest in a northerly, southerly direction and the Sun rising in the east makes a shadow area in most of these areas which means that the Sun is rising approximately an hour later than it is in the nonmountainous areas.

This causes a problem for those people who are working, having to get up early to make work commitments, including commitments of children to school and in most of the Nation today, there are commuters going from suburban to rural areas to inner cities, or industrial areas; they're having to travel under these conditions.

Consequently, we see a justification of fuel consumption; but we are not only talking about the use of fuel, having to run greater hours before daylight, but the fact in our areas, there's a tremendous personal increase in cost, because the increase in utilities has gone anywhere from 8 to 23 percent, and this has brought quite a burden upon the individual home owners, industry, public facilities, et cetera.

Again, another thing as I referred to, and I repeat, in behalf of the schoolchildren over very secondary roads, interstates are not in existence, and I'm sure this exists not only in eastern Kentucky, but in western Virginia, and eastern Tennessee, and areas which we know and are familiar with that are secondary roads, and very few four-lane or super highways that we know, and in some other areas of our country.

The gas consumption by school buses are constantly—you're getting less miles per gallon, because of the size and under the transportation system, of course, this is a fuel supply that is being consumed in the Nation's shortage, and coming into existence and the price of gasoline, again, and operating, meeting budget requirements by school districts, and this is another basic factor that gets into our interest in the request for containing of daylight saving time to not less than 6 months. Correction, not more than 6 months of daylight saving time; certainly would want less.

Another factor that gets into our request and this comes from a number of mothers, working mothers, particularly, who have expressed an interest to us as a fact that they do have commitments to meet in meeting job requirements and opportunities, and being able to get the children off to school, and the factors of being into the offices, wherever it might be, the hours of the requirement before daylight again, is a factor.

Mr. Chairman, those are the basic factors and I want to repeat that every school superintendent that I contacted and surveyed, all had the same factor in mind; that daylight saving time, if it's before October or if it's after April, or before April 1, is a hazard and it is not a good factor for the school system in eastern Kentucky.

Senator FORD. I have no questions of the witness.

Senator STEVENSON. Thank you, Senator.

Mr. Baker, you've said you can accept 6 months of daylight saving time at a maximum. Those 6 months would presumably extend, as in the past, through the months of September and October. Can you live with daylight saving time, as we have in the past, in September and October?

Mr. BAKER. We would prefer that it end no later than the first of October and, again, in the mountainous areas, evening comes early, and morning comes even earlier, if on daylight saving time.

Now, during the past October, our schoolchildren to meet their class requirements, and I'm talking about—well, you say schools can start when they want to. Not really, when you have working parents and those going to and from work, having to meet work commitments.

Many of our children even in the city school district, are leaving home prior to daylight in October.

Senator STEVENSON. You have lived with daylight saving time in October in the past?

Mr. BAKER. Yes.

Senator STEVENSON. Have you had these problems in the past with daylight saving time in October?

Mr. BAKER. Yes.

We've had problems with the fact that the children are going to be picked up by school buses prior to daylight, yes, sir.

Senator STEVENSON. If Congress were to adopt a time law policy purely, exclusively for the convenience and the wishes of the majority of the American public, there wouldn't be any doubt about the outcome.

We now have surveys which indicate that the American public by a majority of more than 2 to 1 wants 8 months daylight saving time.

Why cannot the minority accommodate itself to such an overwhelming majority and in areas such as you represent adjust their habits,

namely, starting school and businesses an hour later during October, March, and April.

Mr. BAKER. Well, of course, I can only speak from the standpoint of schools, an agency which I represent, and it is my expressed philosophy and belief to try to operate accordingly and meet the needs of the public which we serve; this includes business, industry, governmental agencies, wherever, and certainly we cannot do it and do it within the realm of safety for the children with daylight saving time existing in those areas, and other agencies operating under schedules that have in the past.

Senator STEVENSON. You say you cannot do it, but that you do exist to serve the public?

Mr. BAKER. Yes.

Senator STEVENSON. If the public wants school to begin in daylight in the morning, why don't you serve the public by starting schools an hour later?

Mr. BAKER. Well, Senator, I believe that I expressed that we will try to keep our hours consistent with the world of work; based upon their hours. That's what we're trying to do now, and if they were to change, certainly the schools would adjust accordingly.

Senator STEVENSON. I don't understand why work can't start an hour later, too.

Senator FORD. I've lived there, Senator, and industry relates to other industry. Plants of one company in Kentucky, and plants of the same company in Schenectady, N.Y., have to be operating on the same time in order to communicate.

If you start schools and businesses later, say if your plant opens at 8 and it is still dark, and then schools go in at 8:30 or 9, you will find a greater hazard to the children because they are left at home while their parents go to work earlier. People have to live and work and get paychecks. I think that is what the superintendent is saying. The school districts are trying to adjust the school system to accommodate industry.

If all industry started an hour later, we wouldn't need daylight saving time.

Senator STEVENSON. Mr. Chairman, you know just as well as I do, we do not have the authority in Congress to repeal laws of the universe.

It is impossible to put all industry in the United States on the same time. Between the east and west coast, the times are going to be different, but what we have to try to do is adopt a policy that is as convenient to as many people as possible.

On that basis, I think we have to support 8 months of daylight saving time each year. It is clearly preferred by an overwhelming majority, because it is a convenience in their lives, including their businesses.

So, the next step seems to me to encourage everyone to adjust where necessary. And the smallest minority that would be inconvenienced would be under the 8-month daylight saving time proposal.

Some businesses, including the farmers, I should think could adjust without much inconvenience, but I'm now becoming a witness.

Senator FORD. So am I, and I'm enjoying it.

When we can by law take the dew off the hay and that sort of thing, then we're not in the right position.

Senator STEVENSON. I can't do that and I'm a farmer, too.

Senator FORD. I have no further questions.

Thank you, Superintendent.

Mr. BAKER. Thank you.

Senator FORD. The next witness is Robert H. Binder, Assistant Secretary for Policy and Plans, the Department of Transportation.

**STATEMENT OF ROBERT H. BINDER, ASSISTANT SECRETARY FOR POLICY, PLANS AND INTERNATIONAL AFFAIRS, DEPARTMENT OF TRANSPORTATION**

Mr. BINDER. Mr. Chairman and members of the committee, I am pleased to appear before you today to discuss the results and recommendations contained in the Department's final report on daylight saving time [d.s.t.]. I am accompanied by Robert I. Ross of the General Counsel's office, who has the responsibility within the Department for administering the various time laws; by Nancy Ebersole of my Transportation Energy Policy Staff, and by David Rubin and Eugene Darling of the Transportation Systems Center, Cambridge, Mass. These three people served as study codirectors for both the interim and final reports.

As you know, the Emergency Daylight Saving Time Energy Conservation Act of 1973 was passed to switch from the 6-month daylight saving time that had been used since 1966 to year-round daylight saving time for a 2-year trial period. In addition to expected energy savings in electrical power consumption, energy economies in other areas were anticipated. Also, a number of ancillary benefits were anticipated including reduced crime, improved traffic safety, and increased opportunities for shopping and recreation activities. These benefits were impossible to quantify at the time the act was passed. To gain a broader understanding of the effects of year-round daylight saving time, the act required the Secretary of Transportation to prepare interim and final reports on the operation and effects of the act.

The interim report of June 1974 examined the effects of the act during the first 4 months of operation, and reported public opposition to daylight saving time for January and February. As recommended in the report, Congress amended the act to provide for an 8 to 4 system during the second year of the daylight saving time experiment, including a period of standard time from November 1974 through February 1975. The experiment with an 8 to 4 system this year involved a broader investigation of daylight saving time effects and the use of more sophisticated analytical techniques.

The final report was transmitted to Congress on July 31, 1975, and noted favorable public reaction to daylight saving time during the 8 months of March through October. More importantly, there was not any evidence that the lengthened daylight saving time period increased the overall risk of pedestrian or motor vehicle fatalities among school age children.

With respect to the areas of energy conservation, overall traffic safety and reduction of violent crime, the report concluded that modest overall benefits might be realized by a shift from the historic 6-month

daylight saving time system [May through October] to an 8-month daylight saving time system [March through October]. The potential benefits, however, were small and difficult to isolate completely from the large effects of seasonal variations and of changes in energy availability and prices. Though the study findings were based on the best available evidence and statistical techniques, they did not provide conclusive support for recommending permanent changes in the Uniform Time Act of 1966 under which the 6-month daylight saving time system is now in operation.

We believe that the findings, while not conclusive, support our recommendation that the Nation use an 8 to 4 system for 2 more years to permit further analysis and additional measurement of public acceptance. We do, however, recommend a change from the transition days which have been in effect this past year. The best transition days to minimize late sunrises under an 8 to 4 system are March 4 and November 3. Therefore, an 8-month daylight saving time period should begin the first Sunday in March and end the first Sunday in November.

With respect to time zone boundaries, Governors of the 25 States bordering or divided by time zone boundaries were queried regarding the need to change existing boundaries. Every response favored the present time zone boundary except one which favored having only two continental time zones. Based on this survey, we do not recommend any change in the existing time zone boundaries.

I would like now to discuss in more detail the methodology, findings, and recommendations of the final report.

#### ENERGY SAVINGS

The final report concluded that daylight saving time results in probable electricity savings of 1 percent in March and April, equivalent to roughly 100,000 barrels of oil per day over the 2 months. The savings were computed from Federal Power Commission data for transition period during both years of the daylight saving time experiment. Evidence of peak saving for electric power companies was found in the daylight saving time weeks preceding the fall transition, but not at the spring transition. Savings in home heating fuel consumption were found to be minimal. Also daylight saving time appears to have no discernible effect on travel demand or gasoline use.

#### MOTOR VEHICLE FATALITIES, TOTAL POPULATION

In the interim report, we were unable to discern the influence of daylight saving time on motor vehicle fatalities in isolation from other causal factors of reduced speed limits and reduced trip making associated with the gasoline supply constraints during the 1974 daylight saving time experiment. Most of the available data covered only a single year; thus, comparisons between 2 successive years were not possible. Furthermore, time of day data necessary to detect a daylight saving time influence was only available for a limited number of States.

This year we were able to obtain 1973 and 1974 data for the entire United States. Also, the additional time available for the 1975 study

made it possible to apply new techniques which we believe are capable of filtering daylight saving time effects from long-term seasonal trends and other effects, such as the reduced speed limit.

A comparison between national motor vehicle fatal accidents in March and April 1974 [with d.s.t.] and March and April 1973 [without d.s.t.] revealed a reduction in traffic fatalities of 0.7 percent during daylight saving time, which corresponds to a saving of about 50 lives and 2,000 injuries. In addition, an analysis of fatalities before and after the spring and fall transitions in 1973 revealed an approximate net reduction in fatalities of 1 percent during daylight saving time. I should add that our analysts believe that further study may reveal that daylight saving time actually reduces fatalities on the order of 1.5 to 2 percent.

#### SCHOOLCHILDREN SAFETY

The interim report findings regarding daylight saving time effects on schoolchildren fatalities were inconclusive, due primarily to a lack of data. As a result of public apprehension over the safety of schoolchildren traveling to school on dark mornings, we recommended the elimination of the four darkest winter months from the second year's experiment. Our recommendation to retain March and April in the second year's experiment was based on our belief that sunrise in those months occurred early enough to alleviate concern about schoolchildren safety. Judging from the substantial decline in public correspondence on the issue during the second year, we feel that public concern has largely subsided. Our conclusion is supported by the results of this year's public opinion poll where only 7 percent of the respondents expressed concern for schoolchildren safety compared to 38 percent in last year's poll.

Two studies of schoolchildren traffic fatalities are contained in the final report: A DOT study and a study conducted by the National Safety Council at DOT's request.

The theory underlying both studies was that if daylight saving time had a special effect on the number of schoolchildren fatalities, then the change in such fatalities should be significantly different from the change observed in all pedestrian and motor vehicle fatalities.

DOT's study indicated that for the daylight saving time period of January through April 1974, schoolchildren did not at any period of the day experience a greater involvement in fatal accidents than the general population.

The National Safety Council reported that including March and April in the daylight saving time cycle would not have any appreciable effect on the number of children killed traveling to and from school.

Thus, we conclude that there is no statistically apparent national daylight saving time impact on fatal accidents involving schoolchildren during March and April.

#### CHANGES IN SCHOOL HOURS

The Department of Health, Education, and Welfare advised us that only a small number of schools in two Midwest and Western

States adjusted school hours during March and April as a consequence of daylight saving time.

#### PUBLIC PREFERENCE

Public opinion was mixed in two polls conducted during the 1974 experiment with year-round daylight saving time. In a February 1974 poll, 50 percent of the public opposed year-round daylight saving time and 42 percent favored it. A reversal of opinion was evidenced in a March 1974 poll where 54 percent of the public favored year-round daylight saving time, while 38 percent opposed it.

However, a national opinion poll conducted during this year's 8 to 4 daylight saving time experiment indicated a majority of the public approved of daylight saving time from March through October. The ratio of favorable to unfavorable opinion was nearly 2 to 1.

#### CRIME

The Law Enforcement Assistance Administration (LEAA) of the Justice Department conducted a study of the impact of daylight saving time on the incidence of crime. Because of time constraints, only data for Los Angeles and Washington, D.C., was obtained.

Study results indicated reductions in violent crime of 10 to 13 percent for daylight saving time periods in Washington, D.C., compared to standard time period from 1973 to 1975. No impact was found in Los Angeles because the data was too coarse to reveal a daylight saving time effect. LEAA cautions against any generalizations from the limited data base of the study.

#### OTHER EFFECTS

There were not any measurable effects of daylight saving time reported by Federal agencies in the areas of agriculture, labor, and Federal park and recreational activities. Neither were there any reported effects on domestic or international commerce with the exception of construction industry opposition to year-round daylight saving time. The construction industry has suggested an April through October daylight saving time period.

The Federal Communications Commission (FCC) reported that d.s.t. caused audience losses of 2.5 percent for AM daytime radio stations in the winter months of 1974 and 1.5 percent during March and April 1975. Revenue losses were experienced by 500 of the 2,300 AM daytime stations with an estimated average station loss of \$1,500 for the 1974 winter and \$454 for March and April 1975. The FCC's prime concern is the effect of daylight saving time on the curtailment of AM morning radio service to listeners in certain areas of the country served by stations operating on United States, Canadian and Mexican clear channels. The FCC, therefore, supports a return to the historic 6-month daylight saving time system.

Finally, extending daylight saving time to cover election day would increase the amount of daylight during existing polling hours in almost all States. However, an 8 month and 1 week system of daylight saving time with a fall transition the second Sunday in November would be required to cover all election days.

## NEED FOR CONTINUED EXPERIMENT WITH AN 8 TO 4 SYSTEM

We urge that Congress support our recommendation for a national experiment with 8 months of daylight saving time for 2 more years. During this time, we would perform further data collection and evaluations in the areas of energy, traffic safety and crime where small but beneficial savings exist and additional savings may be disclosed.

Also, the public will have the opportunity to experience a 2-year uninterrupted exposure to an 8-month DST system and should, therefore, be able to state a more informed and reliable preference.

Due to the long leadtimes involved in collecting data, we request that an interim report requirement be waived, and that the final report date be set for August 31, 1977.

This concludes my prepared statement, Mr. Chairman. I and my colleagues will be happy to answer any questions you or other members of the committee may have.

Senator FORD. Thank you very much, Mr. Binder.

First off, who conducted the public opinion poll?

Mr. BINDER. Let me ask—

Senator FORD. Was it in-house or done by a national firm?

Ms. EBERSOLE. No, sir.

There were two national opinion surveys conducted by different firms. The survey during the 1974 experiment with year-round daylight saving time was conducted by the National Opinion Research Center, University of Chicago, and the Department of Transportation funded that study. The 1975 survey of the 8-month DST experiment was conducted by Opinion Research Corp. under the sponsorship of the Federal Energy Administration.

Senator FORD. Is that a study now or a poll?

Ms. EBERSOLE. It's a household survey; a national stratified full probability sample of all persons, 18 years and older, living within the 48 contiguous United States. The survey takes into account the household size, age, income, and educational characteristics of the population.

It's designed very specifically to sample population characteristics by region.

Senator FORD. Will those polls be available for us to read and to digest?

Are they included in the full report, the total poll?

Ms. EBERSOLE. In volume II, for the interim report last year, and in volume II, the final report, the entire results are included.

Senator FORD. I know the results are there, but are there questions and responses and so forth?

Ms. EBERSOLE. On the actual questionnaire?

Senator FORD. Yes, ma'am.

Ms. EBERSOLE. That is not included.

I can supply that for the record.<sup>1</sup>

Senator FORD. You know, the way the questions are posed sometimes encourages an expected answer. I would like to see those questions. It was a house-to-house rather than a telephone poll, wasn't it?

Ms. EBERSOLE. The questions are included in volume II.

<sup>1</sup> See p. 80.

Senator FORD. I'd like to see your copy of the report given to the Department from both of these polls, if I may.

Second, on page 7, Mr. Binder, you made a statement that said the schoolchildren did not at any period of the day experience a greater involvement in fatal accidents than the general population.

That doesn't say whether it was up or down.

Were the accidents to school children up or down?

Mr. BINDER. Mr. Chairman, I'd like to amplify the basis for our studies; our proposal for daylight saving time in March and April would result in fewer fatalities for the population as a whole, including the school children. Our studies indicated that increases in morning fatalities for everyone including school children were more than offset by decreases in early evening fatalities. The actual increase for school children fatalities in the morning was 10 and the decrease for afternoon school children fatalities was about 60.

Further, we found no special hazard to school children at anytime of day. Also, we would note that daylight hours for the months of March and April are similar to September and October, which have been acceptable under the historic DST system.

Senator FORD. Does not this longer period of daylight saving time indicate that those who are saved in the morning are now placed in a more hazardous position in the evening?

Are they less safe than before the extension of daylight saving time?

Mr. BINDER. Well, you're basically talking about school age children.

Senator FORD. I'm talking about the total population.

Mr. BINDER. Excuse me.

Let me get your question straight.

Senator FORD. If we look at the chart that is available for us here in the room, sunrise would be at 6 o'clock in certain areas under standard time.

Under daylight saving time, it would be at 7 o'clock.

Mr. BINDER. That's right.

Senator FORD. So, aren't we imposing more hazards in the morning than had been imposed before?

Mr. BINDER. Yes.

You can say that daylight saving time appears to cause more of a hazard for those in the morning and less of a hazard for those in the evening. When you compare the morning increase against the afternoon decline, a national benefit is created because the reduction in the number of people killed in the afternoon more than offsets the morning increase. Frankly, if we could achieve an approach here which would cause a reduction in fatalities both in the morning and afternoon, I'd be pushing for that, Mr. Chairman, but that doesn't seem to be possible.

So, we have been looking at the national totals, and the analysis done so far indicates that a net decrease in fatalities for the Nation is realized by having daylight saving time in March and April.

Senator FORD. Isn't this an admission that schoolchildren are placed in a more hazardous position than they would normally be?

Mr. BINDER. It's an admission that it is more hazardous in the morning but less hazardous in the afternoon, and if you compare the morn-

ing with the afternoon benefits, you are better off because you decrease the total fatalities for the country as a whole.

Senator FORD. I'm a little bit confused, but I guess that's what I'm supposed to be.

Does the DOT's conclusions in this report differ in any significant way from the conclusions of the interim report filed with Congress in August of 1974?

Mr. BINDER. Well, the ultimate conclusion is the same, Mr. Chairman, because the interim report recommended modifying the experiment to an 8 to 4 system, and we are now urging a continuation of the 8 to 4 system for 2 more years in order to complete the analysis which we think should be completed before a final decision is made.

Senator FORD. Why does the Department of Transportation—I want this in your language, rather than reading the statement—Why does the DOT recommend the 8 to 4 system rather than a 7 to 5 daylight saving time system?

Mr. BINDER. From the analysis we have been able to perform on the data available, it looks as though there are modest benefits in a number of important areas. The benefits include energy savings, a reduction in violent crime, and a reduction in traffic fatalities; all of which we consider to be important national objectives. If additional data and analysis confirm these benefits, then we think that the Nation should have an 8 to 4 system and not a 6 to 6 system, which has been true since 1966.

Now, I must say to you, Mr. Chairman, that as we looked at the results of the analysis done both in 1974 and 1975, I was constantly asking the staff whether or not we could be stronger in our conclusions about what the analysis showed. The report quite clearly states that we drew conclusions that there were modest benefits based on the best available data. Notwithstanding their modesty there are benefits, and before we give up the experiment and simply move back to the 6 to 6 system, we think we should try to confirm these benefits and the magnitude of the overall savings. That's what 2 or more years of experimentation would allow us to do.

Senator FORD. You calculate that, daylight saving time in the months of, I believe, March and April could result in a savings of 1 percent in electricity per day; and the figure you used, I think, was 35,000 megawatt hours.

Am I correct in that statement?

Mr. BINDER. Mr. Darling suggests that the saving is about 50,000 megawatt hours. This must be in the basic report, Mr. Chairman.

Senator FORD. Right.

Mr. BINDER. It was not in my testimony.

Senator FORD. Right.

This was submitted and I'm sure you are familiar with the basic reports, aren't you?

Mr. BINDER. Yes.

Senator FORD. What is the fuel equivalent of this saving?

Mr. DARLING. Well, it's 100,000 barrels per day, Senator.

Senator FORD. All right.

What fuels, would in fact, be saved then? When you get down to it, what fuels were saved?

Mr. BINDER. Both oil and coal are saved, Senator.

Senator FORD. But he equated this to oil only, 100,000 barrels. Are you actually saving 100,000 barrels of oil per day?

Mr. DARLING. That's the total equivalent of the amount saved; it's approximately split between coal and fuel oil.

Senator FORD. So, really we are not saving 100,000 barrels of oil per day, are we?

Mr. DARLING. It's the total energy equivalent of coal and oil saved.

Senator FORD. So coal States would be 50 percent of that equivalent, wouldn't it?

Mr. DARLING. That's right.

Senator FORD. OK.

So, really we are not then saving 100,000 barrels of oil per day, actually?

Mr. BINDER. That's right.

Mr. DARLING. The statement was that the total electricity saving was equivalent to 100,00 barrels, Senator.

Senator FORD. Then what did you actually save? You know, you can project how much money you are going to make next year and lose your job.

The experience of the major power companies in my State was that daylight saving time resulted in increased electricity consumption.

Is this conclusion consistent with your report?

Mr. DARLING. We did two studies, Senator.

One was based upon national electricity load data and the other was based on load data from 15 power companies.

The conclusion that daylight saving time caused a 1 percent saving in electricity was based primarily on analysis of the national numbers. Individual power companies could deviate from the national average. What we have given you is a national trend, which reflects an overall saving for a majority of utilities.

Senator FORD. Can you tell me the location of the 15 power companies?

Mr. DARLING. Yes, sir.

Their locations are given in both volume I of our report and volume II; if you can wait a second, I'll find the page for you.

Senator FORD. I'll be glad to wait for you.

Mr. DARLING. On page 91 of volume I, Senator; would you like me to read them?

Senator FORD. No. I can get them from here.

Mr. DARLING. You can see we do have TVA, which is near your area, and also Florida Power on the east coast.

Senator FORD. Of course, TVA Power would be in the central time zone and not in the eastern time zone, so the effect there would be negligible compared to say Louisville Gas and Electric at the extreme west end of the eastern time zone.

I wonder how many of these companies of the 15 you selected were in the extreme western section of a time zone.

Mr. DARLING. Senator, these companies were selected to be a representative group of companies. I would have no reason to think that there was any bias as to their location within time zone.

Senator FORD. I'm not suggesting that there was a bias, but I will suggest that you might have different results between those utilities in

the eastern portion of each time zone and those in the western portion of each time zone.

Mr. BINDER. We will supplement our testimony with a description of where the companies are located, Mr. Chairman; but I would say that this discussion will help us during the next 2 years if we're allowed—

Senator FORD. I hope not.

Mr. BINDER. Because if the criteria used to select the companies does not adequately reflect the point you're making, then we would be able to include this consideration in selecting the next group of companies.

[The following information was subsequently received for the record:]

The attached table shows the areas serviced by 12 of the 15 power companies listed in the DST final report, Table 7.2-4, page 139, volume 2. The table indicates whether the area served by each company is west or east of the standard meridian of the time zone. Note that 7 of these companies serve areas in the western parts of time zones while the remaining 5 serve both the eastern and western parts of time zones. This result is expected because time zone boundaries have shifted over the years to the point where the areas west of the standard meridians are no larger than the areas east.

Information regarding areas served was not available for the following companies: CSDL, City of Seattle Department of Lighting; GSU, Gulf States Utility; and PJM, Pennsylvania—New Jersey—Maryland Interconnection.

#### AREAS SERVED BY 12 POWER COMPANIES

Code	Power company	Time zone served	Service area extends	
			East of the standard meridian	West of the standard meridian
PSCC	Public Service of Colorado	Mountain	×	×
CECO	Commonwealth Edison (Chicago)	Central	×	×
OGE	Oklahoma Gas & Electric	do		×
SEP	South Western Electric Power Co	do		×
MSU	Middle South Utilities, Inc.	do		×
SOCED	Southern California Edison Co.	Pacific	×	×
NSP	Northern States Power Co.	Central		×
KGE	Kansas Gas & Electric Co.	do		×
PGE	Pacific Gas & Electric Co.	Pacific	×	×
AEP	American Electric Power Co.	Eastern		×
TVA	Tennessee Valley Authority	Eastern, central	×	×
CPL	Carolina Power & Light Co.	Eastern		×

Senator FORD. You have to take into consideration the location of the utility when you put emphasis on TVA, and the DST savings that you estimate. If you take into consideration Alabama, Tennessee, and Kentucky, the three major TVA service areas, are in the central time zone. So they're not utilities located in the western end of the eastern time zone.

I believe I'm correct in that statement, because those three States are the major consumers of TVA Power, and I'd say that 90 percent of their customers, I feel safe in that, are in the central time zone.

I think I'm making my point. You should equate actual savings you observed to where the losses were observed. In Kentucky, we found some losses because of the extra hour, really an hour and a half. Lights have to be turned on earlier, and you have to turn heat on that much earlier, because people come to work that much earlier compared to the sunrise.

Describe in greater detail the level of confidence Congress should attach to the numbers which you cite as the probable effect of daylight saving time.

Mr. BINDER. I would say that the level of confidence that I would ask Congress to accept would be just that much to allow the eight-month DST experiment to continue for 2 more years, Mr. Chairman. I must say that when the results of the analysis were put before me, it was my responsibility to decide whether to recommend to Congress that there was no point in pursuing the experiment any further, or whether it looked as though we had sufficient evidence to recommend a continuation of the experiment. I concluded the latter, notwithstanding the fact that some of the data we have are not as comprehensive as I would have liked, and that the results are not as conclusive as I would have liked; so I would say that we have done what Congress asked us to do. We have examined the impacts of daylight saving time on a nationwide basis; we have tried hard to measure the benefits and costs; and we have concluded that there are potential benefits that we think far offset the costs. However, we would like to make sure. We are not asking Congress at this time to permanently change the 6 to 6 system to 8 to 4; we're saying, it looks as though beneficial savings exist and additional savings may be disclosed and we think it worthwhile to validate these benefits.

If we have 2 more years to collect additional data and analyze it, we will be able to come back to you at the end of two years with a firm recommendation to either switch to the 8 to 4 system or continue with the 6-6 system.

Senator FORD. In effect, daylight saving time in the months of March and April is the same as daylight saving time in the months of September and October?

Mr. BINDER. That's right.

Senator FORD. Equal?

Mr. BINDER. The sunrise and sunset times for these 4 months are approximately the same, and that gives us a feeling that we are not moving into strange territory when we suggest that the 6 to 6 system be changed to 8 to 4. All of the arguments that are raised about March and April, you would have thought would have been raised about September and October since these 2 months have been included in the daylight saving time cycle since 1966. But, objections were not raised, except where States found they wanted to be completely left out of the daylight saving time system, and they were able to do that on the basis of the 1966 legislation.

Therefore, we don't think we're pushing Congress to do something that is tremendously new. We are saying that it looks as though March and April lighting conditions are the same as September and October. On that basis, plus the analysis, I think we should try the experiment for 2 more years and make sure that the benefits are what we think they are.

Senator FORD. In Ohio, I don't find much complaint, if any, in September; I do in October; and particularly in the early months in the spring.

I feel that my constituents in the neighboring State of Kentucky believe May through September is the most acceptable time for day-

light saving time as far as recreational industry is concerned. It seems to flourish from May through September. Children are out on vacation. But school opens again in September, and that ends the recreation period.

That's what I find in my own personal poll. And this is talking with the people in the community, too.

What is the latest sunrise that would occur under the DOT proposal?

What day of the year has the latest sunrise?

Mr. RUBIN. Approximately the first of March.

Senator FORD. Approximately the first of March?

Mr. RUBIN. Right.

Senator FORD. Well, then what are the advantages of balancing a period of daylight saving time around the shortest day of the year?

Mr. RUBIN. Well, the Department's proposal doesn't technically do that. It tends to balance the daylight saving time period around the earliest sunrises in the year, not the shortest days of the year.

Senator FORD. What do you mean by technically?

Mr. RUBIN. If you were to center an 8-month period of daylight saving time around the shortest days of the year, that 8-month period would not be the same as an 8-month period centered around the earliest sunrises in the year.

Senator FORD. You are saying it varies by 3 or 4 days? Is that what you're trying to say?

Mr. RUBIN. Longer than that.

Senator FORD. Longer than that?

Mr. RUBIN. A surprisingly longer period.

Senator FORD. What is surprisingly longer?

Mr. RUBIN. I'd have to look to give a detailed answer. I think about a month.

Senator FORD. About a month?

When you find the answer, will you let me know, please.

Mr. RUBIN. Yes.

[The following information was subsequently received for the record:]

The 8-4 system recommended by the Department of Transportation is not related to either the shortest day of the year or the day of the year with the latest standard time sunrise. The shortest day occurs at the winter solstice which falls on December 21st or 22nd. The latest standard time sunrise occurs on about January 4th at the geographic center of the continental U.S.

The proposed 8-4 system was chosen to minimize the adverse effects of late sunrises. This is accomplished by using a Sunrise-Symmetrical System, which means that the time of sunrise under daylight saving time is the same at the spring and fall DST transitions. The Sunrise-Symmetrical System has the desirable property that the latest sunrise during the DST period is the earliest possible for an 8-4 system. For the geographic center of the continental U.S., the best transition dates for an 8-4 Sunrise-Symmetrical System are March 4th and November 3rd.

Senator FORD. Mr. Secretary, you stated that the radio broadcaster opposed the 84; they would like to have 66.

Would you describe in greater detail the impact of daylight saving time on radio broadcasters? I believe in your testimony you indicated that the average financial loss to the radio broadcasters is only \$454 per station.

Could you give the committee the worst case; the figures on the worst case radio stations which will be most seriously injured?

Mr. BINDER. Mr. Chairman, I'd like Mr. Darling to respond to your question at this time.

Mr. DARLING. Mr. Chairman, the figures that appear in the final report are based upon information provided us by the Federal Communications Commission, and they did not provide information on the worst case figures.

The letter from the Commission can be found in volume I.

Senator FORD. You just have the letter of what FCC advised you; you cannot relate that to particular stations?

This is an average then, isn't it?

Ms. EBERSOLE. This was provided, sir, as an estimated average revenue loss per station. The FCC did not actually get station losses on a station-by-station basis. They took the 500 of the 2,300 AM daytime stations that had problems in adjusting their sign-on times because they operate on Mexican and Canadian clear channels and estimated an average revenue loss for the 500 stations.

Senator FORD. They just averaged; they didn't make a survey or poll or write the stations to see what the actual loss would be?

Ms. EBERSOLE. I could try and provide for the record any information that the FCC received stating the worst loss or larger losses.

[The following information was subsequently received for the record:]

Estimates of the worst radio station revenue reductions associated with daylight saving time (DST) were reported to the Federal Communications Commission (FCC) by a small number of the 500 secondary AM daytime stations experiencing problems. The worst estimates ranged from a 20% to 30% reduction in total revenue if DST is adopted year-round and an approximate 5% to 7.5% reduction if an 8 month DST system including March and April is adopted. In comparison, the FCC calculated average revenue reductions for the 500 stations at 2.5% or \$1,500 per station during the winter months with year-round DST and a 1.5% revenue reduction or \$454 per station for March and April DST.

The FCC cautions that the worst case reports are based on rough estimates and were submitted by the stations on an informal basis. No financial records were submitted by the stations to back up the revenue losses claimed.

Senator FORD. Are we in effect then discriminating against some American radio stations because of interference with foreign country radio broadcast? Do we have that? Will we prevent our own radio stations from going on the air? Will we eliminate possibly 500 of the 2,300 radio stations in this country?

Mr. BINDER. I can't answer that question at this time, Mr. Chairman, but I will pursue it with the FCC.

[The following information was subsequently received for the record:]

Of the 7,200 licensed AM and FM radio stations in the nation, the 2,300 daytime only AM stations most adversely affected by daylight saving time divide into two groups. One group consists of approximately 1,800 class III daytimers whose channels are shared with domestic full-time stations having channel priority. The FCC has granted these 1,800 stations emergency time adjustments enabling them to sign on an hour before sunrise at sufficient power levels to escape audience and revenue losses. The second group of affected stations includes 500 class II daytimers who operate on U.S., Canadian and Mexican clear channels, and their problem is basically insoluble. These stations lost an hour of broadcast time in the morning because international treaties prevented them from making

pre-sunrise time adjustments or they made them at extremely low power levels to avoid extensive interference to U.S., Canadian and Mexican clear channel stations, which would have deprived vast areas of population of service. Under existing treaties, the National American Regional Broadcasting Agreement with Canada and the Mexican Bilateral Agreement, the U.S. has to give priority to seven Canadian clear channel stations and six Mexican ones in exchange for their protection of 25 U.S. clear channel stations from nighttime skywave interference. These treaties are clearly advantageous to the U.S. because of the larger number of U.S. clear channel stations involved. Without the protective treaties, these stations, which are the most powerful in the country and provide the widest range of service, would not be able to serve audiences in certain rural areas of the country who have no alternative nighttime service available.

Senator FORD. The young lady indicated that there would be interference between Mexican and Canadian—

Mr. BINDER. We will pursue this point with the FCC and ask why these stations are limited and what can be done.

Senator FORD. The point I am making—with daylight saving time, you are causing a financial loss to the broadcasting industry.

Even though you have information which seems to make it minute, only \$454 average per station, that's \$454 per 500 stations. But does that loss fall on 1 or 100 percent of the 500 stations? Are we creating a financial loss with daylight saving time to some smaller stations that might put them out of business? I don't know because there are some very small stations.

Senator FORD. But it does seem like it's unfair and unfortunate that d.s.t. should create this problem.

Mr. BINDER. There is no question that, on the basis of the data that we were furnished by FCC, daylight saving time caused damage to some daytime AM radio stations to the extent we have been able to describe. The ultimate issue has to be the balancing of this damage as we understand it against the particularly apparent benefits in other areas.

As I testified, Mr. Chairman, FCC proposes a continuation of the 6 to 6 system.

Senator FORD. Are there any recommendations for State exemptions under your proposal?

Mr. BINDER. We have not so recommended in our testimony, Mr. Chairman. My own feeling would be that the States which are now excluded from the system should continue to be excluded.

Senator FORD. I think I'll stop there.

You've been waiting patiently, Senator Stevenson.

Senator STEVENSON. Thank you, Mr. Chairman.

The report of the DOT isn't very surprising to me. What it says in summary is that there is no cost associated with extending daylight saving time except to a few radio stations.

We can reduce energy consumption by the equivalent of 100,000 barrels a day during the extra months of daylight saving time, reduce street crime, reduce traffic accidents, and even increase voter turnouts on election day.

It isn't very often that Congress has an opportunity to do anything at no cost, let alone decrease crime, decrease traffic accidents, decrease energy consumption, and increase voter turnout.

Isn't the reason basically that daylight saving time on an 8-month basis focuses as much daylight as possible on periods of maximum human activity?

That really is the object of our policy, isn't it?

Mr. BINDER. Yes.

Senator STEVENSON. It focuses as much daylight on as much human activity as we can?

Mr. BINDER. Yes.

Senator STEVENSON. And then it follows as night and day, since street crime is usually committed in darkness; put human activity in daylight and a decrease in street crime is bound to follow.

The question is not whether the decrease follows, but how much the decrease is, isn't it? It's hard to quantify.

Mr. BINDER. That's right. We tried to quantify as best we could the information we were able to gather, but before we make any final recommendation to the Congress, we think we need to collect and quantify more data.

Senator STEVENSON. On the basis of the information that you have, what can you estimate as a reduction in violent crime?

You have an estimate based on experience right here in Washington, don't you?

Mr. BINDER. Well, that's right; the only valid statistical base was for Washington, D.C., where a significant reduction of 10 to 13 percent in violent crime was found. LEAA prudently suggested that we should not infer that the Washington, D.C., reduction represents a national average. Crime is one of the important areas we should be analyzing if we have a chance to continue studying daylight saving time impacts during the next 2 years.

Senator STEVENSON. Fifteen percent reduction for violent crime in Washington, D.C.?

Mr. BINDER. Ten to thirteen percent, not 15.

Senator STEVENSON. That in itself is phenomenal in my mind. It is reason enough for continuing an experiment.

Will it be possible with the continued 8-month experiment to give us firmer data on crime rates?

Mr. BINDER. Yes, it would. Analysis would continue and we would be attempting a nationwide examination of crime rates in major cities.

Senator STEVENSON. I don't think anybody has presumed that any policy, any step of any kind by the Federal Government could have such a conceivable effect on violent crime.

That, of course, was not the primary purpose of 8-month daylight saving time. It was the result of my suggestion that it would reduce energy consumption at the beginning of the energy crisis.

Now for energy, again, daylight saving time focuses daylight on human activity, so it follows that energy consumption goes down.

You've given us some estimates which are based exclusively on reduction of electricity consumption. You conclude that, on an equivalency basis, the saving is 100,000 barrels of oil a day.

Is that derived exclusively from reductions in generation of electricity?

Mr. DARLING. Yes, Senator, it is. Our information was entirely based upon electricity consumption.

Senator STEVENSON. And are you fairly confident of that figure?

Mr. DARLING. I think that this is one of our better results, Senator. We did a number of studies using two different sources of data: the Edison Electric Institute's National Electricity Load Data, and load

data from 15 power companies. We analyzed spring and fall daylight saving time transitions from 1963 to 1972 and found a 1 to 2 percent reduction in the national electrical load attributable to daylight saving time. This reduction is consistent with a 1 percent national load reduction in April 1974 and 1975 (when daylight saving time was in effect) compared to April 1967 through 1973 (when standard time was in effect), and a 2 percent reduction in January 1974 (during daylight saving time) compared to January 1967 through 1973 (during standard time). Also, a very detailed analysis of data from 15 power companies, comparing the load 1 week before versus 1 week after five daylight saving time transitions, revealed that a 1 percent electrical load reduction occurred during daylight saving time periods at transitions in the winter, spring, and fall; in fact, at all transitions that we studied.

Therefore, I feel that this finding is one of the more significant ones in our study.

Senator STEVENSON. You focus as much daylight as possible, again, on human activities and decrease human reliance on artificial sources of light.

Is that basically the reason for reduction on electrical generation?

Mr. DARLING. We came up with an interesting hypothesis to explain the peak shaving that you mentioned earlier. It is consistent with this idea: If a daylight saving time transition occurs at a time such that the change in light causes the residential and commercial peak loads to occur at different hours then there is a decrease in the total peak load because these two peaks do not coincide. Indeed, we can show that based on that argument you would expect to find savings at fall transitions, little if any savings at transitions in other seasons. All of our results to date are consistent with this hypothesis.

Senator STEVENSON. Sunrise heats as well as lights.

Isn't it also possible that by putting that source of heat on human activity that you're also obtaining reductions in the use of the artificial sources of heat, including fuel oil?

In other words, isn't there possible additional energy savings in addition to electrical generation?

Mr. DARLING. This is a separate issue, Senator, which we have examined.

In this case, we had no data. However, we did a theoretical study and were able to identify seven heating modes. These represent various ways in which people heat their houses. For example, the inside temperature is set at a constant level throughout the day, or the nighttime temperature is set below the daytime temperature.

It is theoretically possible in three out of these seven modes to realize fuel savings. In these three modes, the heating system is completely switched off during some part of a 24-hour day. These three heating modes are most likely to be used in the Southern and Southwestern States, or roughly in one-third of the country.

We then did an analysis of this situation, making the most optimistic assumptions that we could about how much saving would result from these modes of operation. Our conclusion was that the maximum savings would be on the order of one-tenth of 1 percent, or about 3,000 barrels of oil per day and a natural gas saving equivalent to 5,000 barrels of oil daily.

We felt that these savings were an insignificant figure, and did not warrant the conduct of a detailed household survey which would be required to arrive at a better estimate. So the answer to your question is that the light shining on human activity doesn't help you in the home heating area, but does help in saving electricity.

Senator STEVENSON. As much.

Mr. BINDER. Right, as much.

Mr. DARLING. Essentially, not at all.

Senator STEVENSON. What I'm trying to say, is that savings of 100,000 barrels of oil a day, based just on lighting loads, is a solid figure and also a minimum figure.

Is that a fair statement?

Mr. DARLING. It's based on a reduction in electrical load—an actual reduction in the daily load—over a full week.

Senator STEVENSON. You're nodding, Mr. Binder.

Would you put that on the record as a yes?

Mr. BINDER. I was going to ask Mr. Darling. Do we think that energy savings are likely to be larger if we study the area further?

Mr. DARLING. I honestly couldn't answer that question either in the affirmative or negative.

Mr. BINDER. I withdraw my nod.

Mr. DARLING. I believe that we should continue studying this question. I think the important point is that all our analysis to date reflects a savings of about 1 percent and whether further studies would increase that figure, I couldn't say.

Senator STEVENSON. As in the case of crime, further studies seem warranted and could produce evidence of even greater savings.

Mr. BINDER. Yes, we want to pursue that; obviously energy conservation remains one of the areas where we want to confirm how much of a benefit the 8-4 system was producing.

Senator STEVENSON. Isn't it true as in the study done by a person who works for the Rand Corporation indicates that savings could also be obtained in the South as a result of reduced air conditioning?

Mr. DARLING. I'm not familiar with the study, Senator.

Senator STEVENSON. Let me turn from energy and crime to traffic accidents.

I think the press was doing the country a great disservice when we first experimented with daylight saving time by focusing public attention on schoolchildren accidents in early morning hours.

Most, if not all the accidents in Florida were the result of a fog.

The media focused no attention on the lives that were being saved after school.

Your conclusions as I understand them, with respect to schoolchildren, even in the morning hours, is that there is no increase in fatalities as a result of daylight saving time.

Is that right?

Mr. BINDER. Our studies suggested that in the morning, there was an actual increase in schoolchildren fatalities of 10, and a decrease in afternoon fatalities of about 60.

Senator STEVENSON. All of that increase in the morning of 10 was directly as a result of daylight saving time?

Mr. BINDER. I can't say positively due to daylight saving time. That was one of the problems of the analysis—trying to separate the DST

effects from all other causes—but we found that variations were occurring in fatalities during the morning and early evening hours affected by daylight saving time, which resulted in a net saving in lives. We consider it to be a direct benefit of daylight saving time based on our analysis, which we believe was successful in filtering out other effects such as the 55-mile per hour speed limit and seasonal trends.

Senator STEVENSON. It was 10 lives in the morning?

Mr. BINDER. Yes.

Senator STEVENSON. A net saving in lives then of 50?

Mr. BINDER. Fifty; right.

Senator STEVENSON. That's the effect with respect to children—a substantial net saving of lives.

I hope the press can get it right this time; as a result of daylight saving time. And the same reason is the same as for crime and energy reductions, daylight is being focused on human activity.

Children go to school in the early morning hours. They go to school earlier, I suppose, on the average, than people go to work.

What can you tell us about the traffic fatality experience of everybody, not just schoolchildren, but everybody in our society under DST?

Is there an increase in traffic fatalities and traffic accidents in the early morning hours as a result of daylight and saving time?

Mr. BINDER. There are increases in morning traffic fatalities for everyone including schoolchildren, but these are more than offset by the decreases in early evening fatalities.

Senator STEVENSON. How much of the overall increase in the morning hours was a result of daylight saving time?

Mr. RUBIN. We don't have it calculated out, the number of fatal events of a percent different the net results.

Senator STEVENSON. Let's go through this.

What was the net increase in traffic fatalities in the morning hours as a result of daylight saving time, if you have it? The percentage, not the net.

Mr. RUBIN. The percentage.

Well, we have data for the period of March and April 1974, with DST compared to the same period without DST. On a percentage basis, our studies, using national data indicates that in the morning, the increase in overall fatalities was 0.33 percent; that is a third of the percent, and that in the evening, those fatalities were reduced by 1.4 percent, so that net we have a savings of .71 percent measured for March and April of 1974 with DST as compared to March and April for 1973 without DST.

Senator STEVENSON. Can you give that percentage in numbers of lives, if you have that?

Mr. RUBIN. Well, our net figure showed a savings of 50 fatalities as we reported in our final report.

Senator STEVENSON. If the result is a net reduction in fatalities, is it not also a net reduction in accidents?

Mr. RUBIN. We inferred that, but we didn't actually measure it.

The experience of our traffic safety people has been that there is an approximate ratio of about 40 to 1 between traffic accident injuries, and fatalities.

Senator STEVENSON. So, we can safely conclude from that ratio that traffic injuries are being reduced as a result of traffic accidents?

Mr. RUBIN. Yes.

Senator STEVENSON. And the costs of repairing vehicles and insurance costs are similarly reduced?

Mr. RUBIN. We didn't estimate those.

Senator STEVENSON. But it follows?

Mr. RUBIN. It follows there would also be a savings there.

Senator STEVENSON. The Chairman is being very patient.

Can you also quantify voter turnouts?

Is there any way of quantifying the effect of daylight saving time on voter turnout?

Mr. DARLING. Yes, Senator.

We've looked at this question and if you would direct yourself to page 125 of volume I, the findings are summarized.

We find that there's an increase in the number of hours of daylight during the State polling hours due to daylight saving time of 1 hour in 24 States; one-half an hour in 10 States; no change in 11 States; and only 3 States experienced fewer hours of light during existing polling hours under DST.

So there was an overwhelmingly positive effect of DST on election day.

Senator STEVENSON. Well, I think the case is made. DST offers a reduction in violent crime of perhaps 13 percent, a phenomenal result; 100,000 barrels of oil a day equivalency in energy consumption at a minimum; a reduction in traffic accidents and all the costs associated with them and an increase in voter turnout on election day.

And the only cost is to a few radio stations totaling just \$225,000.

Thank you gentlemen.

Senator FORD. May I follow up just for a couple of points of clarification?

What were the number of crimes in Washington, D.C. in 1973, 1974, and to date?

Do you have the figures for major crimes?

Mr. BINDER. Are you talking about the increase from year to year or—

Senator FORD. Yes, sir. Was there an increase in 1974 over 1973; and an increase in 1975 over 1974?

Ms. EBERSOLE. I believe there was an increase in total crime, but we're going to have to check this out for you in the report.

Senator FORD. I think the answer is obvious, isn't it?

Mr. BINDER. It is up.

Ms. EBERSOLE. The crime rate did increase. However, total crime in the District is dominated by property crime, which does not show a DST effect. Violent crime, where we found reductions of 10 to 13 percent attributable to DST, represents a smaller proportion of total crime.

Mr. BINDER. We can furnish the figures for you, Mr. Chairman.

[The following information was subsequently received for the record:]

The study of daylight saving time (DST) effects on the incidence of crime addressed only the winter and spring months affected by the two-year DST experiment, and no yearly analysis was conducted. Study results for Wash-

ington, D.C. did not reflect a reduction in *total* crime attributable to DST, but a 10-13% reduction in *violent* crimes, which includes homicides, rapes, aggravated assaults and robberies. The 10% reduction in violent crimes consistently occurred during periods of daylight saving time from January through April 1974 and February through March 1975 compared to comparable standard time periods in other years. The 13% reduction in violent crime was obtained from hourly comparisons during the weeks before and after five time changes from 1973 through 1975. The hourly occurrences of violent crimes showed a consistent tendency to depend on the time of daylight versus darkness. In contrast, property crime did not show a dependence on the time of daylight.

Since the DST study did not involve a yearly analysis of crime, no comparison can be made to the District's annual increase in crime. The relevant comparison of our study results applies to selected periods of daylight saving time versus selected periods of standard time where there was a consistent tendency for violent crimes to be reduced 10-13% during periods of daylight.

Senator FORD. I just thought you might have it there.

Did the new type of lights that are being installed on the streets, penetrating street lights, you think have any effect in deterring crime?

Mr. BINDER. I believe that they had an effect.

Senator STEVENSON. OK.

One question and I just want to get a yes or no answer.

I believe when you equated the energy saving to a fuel oil equivalent, you stated that only 50 percent was actual oil saved. Only 50,000 barrels of oil were saved.

Am I correct in that statement?

Mr. BINDER. That's right, Senator.

Senator FORD. Do children go home from school in the evening in the dark?

Mr. RUBIN. Typically not; but it possibly happens under some lighting circumstances.

Senator FORD. Typically not?

Mr. RUBIN. Yes.

Senator FORD. So under DST, they are going to school in the morning in the dark, but under standard time, in all probability, they could make the round trip in the daylight, couldn't they?

Mr. RUBIN. It would vary from place to place.

Senator FORD. Where are the other places?

Mr. BINDER. We can offer that for the record, Senator, but the school trip period we've evaluated reveals that less lives were lost in the afternoon and this more than offsets the morning increases. The period of the analysis covered 7 a.m. to 4:30 p.m., so it clearly focused on activities of school children before school and directly thereafter.

Senator FORD. You know, every night when I was Governor of Kentucky they would lay on my desk as I came into the mansion a sheet on traffic fatalities, and the causes. We worked as hard as we could to try to reduce fatalities on our highways.

Somehow or another, working as hard as humanly possible, we found that once in a while we couldn't prevent a multiple person fatality.

Some years fatalities were up, some years they were bad. If you have a bad year, prospects for next year were good.

So there was a random element in this. We could have a good year and the next year we would look bad.

Is that not true?

Mr. BINDER. I think that's true of statistics, Mr. Chairman. We looked carefully in preparing for this hearing at Kentucky's particu-

lar experience with respect to the months of March and April during the years of 1972 to 1975, looking at what the National Safety Council told us about school age children and fatalities on weekdays.

In the year 1972 when there was no daylight saving time in those months, the total fatalities of that group were six. In 1973, where there was no daylight saving time in Kentucky in March and April, the total fatalities in that group was one. In 1974, which was the first year in which there was daylight saving time in Kentucky, in March and April, the total was three. And in 1975, we have only the report for the month of March, which was zero. We don't have April yet.

But if you look at the movement from six to one, there definitely looks like there is a reduction for the State of Kentucky.

Senator FORD. In 1973 without daylight saving time there was one?

Mr. BINDER. Only one.

Senator FORD. So, we reduced fatalities without daylight saving time.

Mr. BINDER. Which confirms your point that there can be movement without a change to daylight saving time, but if you look at the trend, the first year with daylight saving time had three deaths compared to six in 1972, and it looks at least for the month of March of 1975 that we had no fatalities at all. As I said, we are waiting for April data.

Senator FORD. Did your survey include additional expense for use of additional security officers for highways, school crossings and that sort of thing; did that get into the report?

Mr. BINDER. No, it did not.

Senator FORD. Did you find that the 55-mile-an-hour speed limit gave any help in the reduction of accidents?

Mr. BINDER. We were not able to attribute that program to these results. When we look at the national total reduction in traffic fatalities, it appears as though the 55-mile-an-hour speed limit represents about one-half of the reduction in fatalities and the price of gasoline in the amount of driving reduction appears to represent the other half.

Senator FORD. That's the whole?

Mr. BINDER. That's looking at the whole.

Senator FORD. What about daylight saving time? You have already taken up the whole; where is the effect of daylight saving time?

Mr. RUBIN. One of the technical problems we had, Senator, in analyzing the fatality data during the period of 1973 and 1974 was how to separate out the effects of daylight saving time from other effects like the 55-mile-an-hour speed limit. We were successful in applying a technique which we believe separates out most of the effects of the 55-mile-per-hour speed limit from daylight saving time effects.

Therefore, when we concluded that we had a net fatality savings attributable to daylight saving time, it was based on applying the analytical technique to the data, filtering out the effects of the 55-mile-an-hour speed limit, and a variety of other effects, and focusing in on what we believe was a daylight saving time benefit.

Senator FORD. If Congress in its wisdom decides to insert in this legislation a method which allows the States to exempt themselves, what would be your recommendation to the Congress as to the ability of a State to exempt itself?

Mr. BINDER. I would recommend that a State exemption clause be included in the legislation, Mr. Chairman. It was part of the original

1966 legislation and we think it should continue to be a part of the basic approach to this problem if a State believes it wants to be left out. The approach to daylight saving time should be to give the States the alternative to exempt it.

Senator FORD. But would you require a good substantial documentation in order to be able to exempt, or just accept a telegram from the Governor saying the State wanted to be exempt?

Mr. BINDER. I cannot say that I speak for the administration in answering this question, Mr. Chairman, but my own feeling would be that this would be up to the State to decide, and should not require Federal approval.

Senator STEVENSON. Mr. Chairman, would you yield to that point for further questioning?

Senator FORD. Yes.

Senator STEVENSON. I think it would be helpful to us if we could get a firm administrative position on that question.

The last time it came up, as I recall, concerns were expressed by the Department and industry about the effects of State-by-State exemptions on schedules of airlines, railroads, and so on. So I think, Mr. Chairman, it might be useful if we did get a formal and detailed position from the Department on that question of exemption, and what procedure then should be required of the States to take advantage of the exemption.

Mr. BINDER. Very well, Senator, I will seek to tell you that.

[The following information was subsequently received for the record:]

The Administration favors continuing the existing procedure under the Uniform Time Act of 1966 as amended for State exemption from daylight saving time (DST). That procedure allows a State by law to exempt itself from DST. If a State lies within one time zone, it must exempt the entire State (including all political subdivisions thereof). If a State is in more than one time zone, it may exempt either the entire State or the entire area of the State lying within any time zone. The Administration strongly opposes any provision which would allow an exemption for areas smaller than the entire portion of a State lying within any time zone because such piecemeal exemptions create confusion, interfere with the conduct of interstate commerce and are at odds with the stated policy of the Uniform Time Act of 1966.

With respect to time zone realignments, the Administration favors leaving intact the Secretary of Transportation's authority to realign time zone boundaries. We would oppose realigning time zone boundaries where the realignment would only be effective for the period of DST.

Senator FORD. Just one quick question, and I want to stop. I don't want to belabor this point, but it is important to what we are trying to do here this morning.

In your analysis of the impact on construction workers, you stated that construction workers were opposed to daylight saving time.

Do you have an analysis of loss of income to the construction industries, that is, the contractor, the loss of income to the laboring man and woman, anything like that which would indicate that there is some loss of valuable dollars in the construction arena?

Mr. BINDER. Well, while he is looking for the record of that, Mr. Chairman, let me make the following observation. As my testimony indicated, the construction industry passed a resolution stating their opposition to year-round daylight saving time, but we are not proposing that.

As I indicated, apparently their current position is they are opposed to daylight saving time from November through March. They favor

daylight saving time from April to October. As I pointed out earlier in this discussion, March and April sunrise and sunset times are approximately the same as those in September and October. I have not had the opportunity to discuss this point with representatives in the construction industry to find out why they are unhappy with daylight saving time in March and not in October. I will pursue this point with the industry if the 8 to 4 system is continued.

Senator FORD. I think if you will observe the weather conditions, fall has more construction time than spring.

In spring you have the possibility of snow and rain. If then we also have late sunrises, delaying the time of starting work in the morning because of the darkness on construction sites, and children go to school late and the school system changes its time, we have created a real problem for the working man. Then he has to come in late in the morning and stay an hour later in the evening.

You definitely create a hardship on the construction industry, as I understand it from both labor and management representatives.

That's a personal observation. I have no further questions.

I do thank you for your cooperation this morning.

Thank you. The next witness is Dr. Marvin Kahn, Mitre Corp.

Doctor, I would appreciate it if you could summarize, but if you wish to do otherwise, that's OK, because we have delayed you.

**STATEMENT OF MARVIN H. KAHN, SENIOR ECONOMIST, ENERGY, RESOURCES AND ENVIRONMENTAL SYSTEMS ANALYSIS DEPARTMENT, MITRE CORP.**

Mr. KAHN. Thank you, Mr. Chairman. My name is Marvin H. Kahn. I am a senior economist and member of the technical staff of the Energy, Resources and Environmental Systems Analysis Department, of the Mitre Corp.

I received a bachelor's degree in business administration and statistics from Ohio Northern University and a Ph. D. in economics from Washington University. I have served on the faculty of the department of economics at the University of Tennessee, as staff economist for the Ad Hoc Committee on the Domestic and International Effects of Energy and Other Natural Resource Prices of the House Committee on Banking and Currency, and as an economist in the cost analysis group of the Institute for Defense Analysis. In each of these positions, I have undertaken economic research requiring econometric and statistical analysis. Reports based on these research efforts have been published by these organizations.

It should be noted that the views expressed in this testimony are my own and do not necessarily reflect those of the Mitre Corp.

My presence here today is at the request of the Senate Commerce Committee to review and analyze the daylight saving time study. This study was prepared by DOT for the Congress in accordance with the provisions of the Emergency Daylight Saving Time Energy Conservation Act of 1973.

My testimony deals solely with the contents of the study, and more particularly with the data and statistical analysis contained therein. The points I wish to make are developed in sections 3 through 5. The third section comments on the overall study design. In the fourth sec-

tion the statistical analysis undertaken is briefly reviewed and commented on. Since the study has already been summarized here today, I will not do so again. Rather I will focus only on those points where I feel comment is necessary. The fifth and last section offers a brief summary and conclusions.

The comments made here and the page and table numbers given below are in reference to the daylight saving time study, volume II. Supporting studies final report on the operation and effects of daylight saving time, hereafter referred to as the study.

### *Study design*

An extended discussion of the validity and importance of statistical testing will not be gone into here. This validity is not open to serious question, rather the task of this proceeding is to consider its applications in the study. In this study, the problem was to reach conclusions concerning the impacts of daylight saving time [d.s.t.].

All too often an investigator designs an analysis and decides what the optimal data base is only to find that it is not available. The investigator is then forced to find out what data is available and how it can be used. Consequently, it is common practice to describe the data based used and inform the reader of its limitations, if any. While this was not done in all cases in the study it was done with sufficient frequency to give the reader the feeling that data limitations were rather severe, and to make him aware of the limitations of the analyses.

There are a variety of statistical techniques available. The proper choice of technique depends upon the question being asked or hypothesis being tested and the nature of the data. The analysis contained in the study makes use of several types of statistical techniques including chi square, linear regression, students t, rank sum and spectral analysis. In addition, the data in several sections have been subject to different tests, both to test different hypotheses and to serve as cross checks. In general then, the study seems to have been designed soundly.

### Review of statistical analysis

#### *a. Travel*

The analysis of change in travel in response to daylight saving time was done by comparing levels of and changes in total traffic volume at the various transition dates. The interesting thing here is that the sample of States used differed not between comparisons. For instance, as reported in table 7.1-1 on page 103, there were data on traffic volume for 8 States in the December 1972-January 1973 period, for 15 States in the December 1972-January 1974 period, and for 14 States in the December 1974-January 1975 period. The same pattern is exhibited for the other months. One may argue that the results obtained were effected by the change in the composition of the data base. This possible objection is addressed, with the investigation of differences in regional impacts—such as North-South and urban-rural. As a result, the conclusions as to the travel seem well founded.

#### *b. Electricity*

The analysis of electricity demands in response to d.s.t. treats both total load demand and peak demand. I will dwell here only on total load demands.

The impact on daylight saving time on total electricity demands was treated first in the aggregate. The analysis was in the form of

comparing the percentage change in the load at spring and fall transition dates for the 1963-66, 1967-72, and 1973-74 periods. There may be problems with comparisons such as this. Over time there has been a change in the importance of the various uses of electricity. For instance, electricity used for residential heating purposes has grown from less than 13 percent of total residential sales in 1964 to almost 17 percent in 1974. During this time there may also have been sizable changes in the geographic distribution of electricity use. Since each major appliance has a seasonal demand structure as does each geographic region, these comparisons run the risk of not being able to distinguish between the effects of daylight saving time and those due to changes in the seasonal demand structure. Therefore, the results from this test—page 133, table 7.2-1—must be treated with caution, and I would argue as being inconclusive.

The same conclusion must be reached for the analysis described in table 7.2-2, page 134, and 7.2-3, page 136. Here changes in load growth for 1963-66 and 1967-72 are compared to those in early 1974. Weather undoubtedly affects electricity demand. By averaging load growth over a number of years, the random effects of weather may be assumed to cancel out. However, when taking only 1 year, the influence of weather will clearly remain and be combined with that of daylight saving time. If for instance, the second week of January 1974, was unusually warm, and particularly so in the Northern States, electricity load growth will decline, independent of daylight saving time transition.

On the other hand, the analysis of load demand based on a sample of 15 firms, and the analyses of peak shifts and of peak shaving do not share these problems. The overall conclusions that daylight saving time resulted in a decline of load growth possibly by as much as 1 percent is supported, but because of the problems indicated, not as strongly as suggested in the study.

#### *c. Gasoline*

The analysis as reported seems to contain no problems and therefore no comment will be made.

#### *d. Home heating fuel*

Though not stated in the study, data on home heating fuel oil use is available only in the form of quantities delivered to consumers at the date of delivery, rather than date of use. Consequently, an examination of the effect of DST on heating oil use does not easily lend itself to statistical analysis. Natural gas, however, is metered in a manner similar to electricity. Why a separate and possibly a statistical analysis for this home heating fuel was not performed is not clear.

#### *e. Motor vehicle fatal accidents*

In the analysis of the impact of DST on motor vehicle accidents, the difference in the number of accidents for the first quarters of 1973 and 1974 are compared, first for weekdays only and then for weekdays and weekends. The data and test results are displayed in tables 7.5-1 and 7.5-2 on page 219. In both cases, there were significantly fewer accidents in 1974. Whether this is due to the existence of DST in 1974 or to there being fewer cars on the road as a result of the energy situation cannot be detected from these tests.

To further analyze the fatal accident data, the DOT used Fourier transforms and spectral analysis, a technique that only recently has been used in social science research. This technique allows the frequency or pattern as well as the level of fatal accidents to be analyzed. The reasons for using this technique are spelled out in the study and will not be repeated here.

The findings I would like to discuss are found in tables 7.5-5, 7.5-6, 7.5-7, 7.5-8 and 7.5-11. Here the probabilities that the observed changes in vehicle fatalities could have occurred by chance are reported. Typically when treating probabilities such as these, one sets a predetermined upper level of randomness that will allow for acceptance of the hypothesis. If one were to be conservative, and allow for only a 5-percent probability of random behavior, then the hypothesis that DST resulted in decline in accidents will be rejected in most cases reported here. However, since most observed impacts were in the form of fewer traffic fatalities, an alternative hypothesis that fatalities increased is not supported either. In other words, if one does not wish to accept the findings reported in these tables as pointing to fewer accidents, the only alternative is to argue that DST had no impact.

#### *f. School age children fatalities*

The analysis of school age children traffic fatalities attempts to determine whether DST has been particularly hazardous to this group. The technique used was to determine whether at the transition periods school age children traffic fatalities changed in a manner different from the change in the traffic fatalities of the total population.

Fatal traffic accidents for school age children and for the total population in the period January through April 1973 and 1974 were compared. This was done by looking at the total number of fatalities and those in the pedestrian/pedalcyclist and motor vehicle categories. For each group fatalities occurring in the morning—5:30 a.m.—9:30 a.m.—midday—9:30 a.m.—4:30 p.m.—and evening—4:30 p.m.—8:30 p.m.—hours were compared. In all there were nine tests. Of these only one proved to be significant, and that only marginally so. In other words, comparing the first 4 months in 1973 to those in 1974 changes in the number of fatalities to school age children relative to the total number of traffic fatalities were primarily due to random movements and not related to the DST transition.

The analysis then turned to a comparison of school age children and total fatalities occurring immediately before versus immediately after the 1973 spring and fall transitions. As reported in table 7.6-5, page 302, no significant difference was found for the spring transition, but a significant decline occurred after the fall transition. That is, DST was found to be hazardous to the school age child's safety in the fall of the year only.

The morning and afternoon fatalities were then analysed separately for each transition. Tables 7.6-6 and 7.6-7 on pages 303 and 305 display the data. I am somewhat uneasy with the reported testing procedure.

On page 19 of the study, the formula for chi-square was given as

$$\text{Chi Square} = \sum_{i=1}^N (X_i - E_i)^2 E_i$$

Where

$X_i$  = actual value of the  $i^{\text{th}}$  observation

$E_i$  = expected value of the  $i^{\text{th}}$  observation

$N$  = number of observations

This statistic has  $N-1$  degrees of freedom.

Each of the numbers in the last column on pages 303 and 305 are based on one observation and therefore have zero degrees of freedom. With no degrees of freedom, these individual figures convey no meaning in a statistical sense.

I believe that a correct procedure would be to compute for each of observation the difference between the actual and expected values of school age children traffic fatalities and of all others. These differences would be squared, divided by their respective expected values, and the quotients summed. This would provide a chi-square statistic with one degree of freedom for each week. The impact of using this procedure will be to increase the magnitudes of the numbers reported in the last column of tables 7.6-7 and 7.6-8, and possibly to result in some of the statistics reported as being insignificant to become significant. The total impact, however is likely to be small. I made sample calculations which indicate that the only change in significance levels will be for the first entry for the evening analysis for the fall transition—table 7.6-7, page 305. This figure changes from 3.70, which is insignificant, to 4.37, which is significant. The significance of the entries in table 7.6-7, the spring transition remain totally unaffected.

The expected values of fatalities in both tables were calculated by assuming that the ratio of school age to nonschool age traffic fatalities in the midday and evening periods held for both the morning and evening. This relationship and the method used to calculate the expected levels of school age and nonschool age fatalities for both morning and evening periods are shown in exhibit 1.

For the mornings, when comparing the actual and expected values, one is in essence testing to see if the distribution of traffic fatalities between schoolchildren and other differs from that which occurred during the midday and evening periods. In other words, for the evening period, the comparison is between the distribution of fatalities that actually occurred in the evenings and the ones that occurred in the sum of the midday and evening periods. The reasoning behind this latter procedure alludes me. I would argue that the proper procedure would be symmetrical and would compare the evening to nonevening periods. I did not compute the statistics based on an evening-nonevening comparison and therefore have no idea as to how or whether significance will be effected.

The effect of DST on schoolchildren by age group was addressed and the data presented in table 7.6-8, page 307. I have been informed by Mr. Eugene Darling of the DOT that there is an error in this table. In particular the figures displayed under subheadings g. and h. are incorrect. There should be four displays here describing fatalities for 1-4-year-olds and 5-8-year-olds, and all of these are insignificant. With this change, the only area of significance is for 9-11-year-olds, with a decrease in relative fatalities occurring after the fall transition. That is, DST was found to be hazardous to this age group only, and only where there is a sudden increase in daylight in the morning and a decrease in the evenings.

Last, the results of a National Safety Council study on school age children fatalities is reported. This study also found that changes in the number of school age children and all fatalities were effected equally by DST.

What may then be concluded as to the safety of school age children and DST. The greatest public concern seems to be with safety when going to school in the darkness, that is in the mornings in the winter and early spring months. All tests performed, even taking into account the qualifications I discussed above, reveal no special hazard to children during these times. My criticisms only affect the evening hours, hours after school (4:30 p.m.-8:30 p.m.).

g. Change in school hours

h. The effect of DST on AM broadcast reception

No comment is made on either of these sections.

i. Crime

The findings here are based totally on data for Washington, D.C. Given the convincing nature of the analysis, one would suspect that the findings hold for other areas as well. However, that conclusion cannot be reached until data for other areas becomes available and is analyzed.

j. Park and recreation area utilization

k. Labor

No comment is made on either of these sections.

l. Business activity

I have only one comment on the analysis of the effect of DST on business activity and that deals with foreign trade. It is reported in the study that the actual number of telephone calls from the United States to Europe in the first 4 months of 1974 was 11 percent less than that expected from extrapolating from 1970-73 data. It should be pointed out that in both the United States and Western Europe business activity had slowed in late 1973 and that the United States was realizing a business recession in 1974. Consequently, in a slowdown in the growth rate of overseas phone calls it is to be expected independent of DST.

#### *Summary and conclusions*

The analytical techniques used in the daylight saving time study were reviewed. There were several cases where the techniques used and/or findings were questioned. Particular areas where these questions were raised included electricity consumption; home heating fuel consumption; school age children motor vehicle fatalities, crime and foreign trade. Nevertheless, in no case were these problems sufficient to substantially alter the conclusions expressed in the study.

These findings do in fact indicate that changing from a 6- to 8-month DST may result in modest reductions in electricity use, overall traffic fatalities, and violent crime. At the same time little or no support was given for several of the feared costs in the form of increases in motor vehicle fatalities for school age children and disruptions in business patterns.

Mr. Chairman, this concludes my prepared statement.

Senator Ford. Thank you very much, Doctor.

I think your testimony was very straightforward and very good, and I appreciate it. I do have a question or two.

If the Congress decides to extend the experiment for daylight saving time for 2 years, what changes would you recommend in the DOT's study techniques?

Mr. KAHN. I think there were several things brought out here this morning that I would argue probably should be concluded.

The use of averages in statistics is common and quite often are probably quite good; however, there are times when we are also interested in the data base that underlies the averages. I would argue that there are some difficulties with aggregation in this analysis, and it probably would be quite fruitful to take a look at each region of the country in greater detail, or disaggregate the population in some other pattern.

Senator FORD. I'd like to interject. Would you say that the eastern half and western half at a time zone should be measured against each other since it is obvious the generating companies DOT discussed this morning were not all at the western edge of a time zone?

It seemed like those companies were excluded. DOT referred to TVA but it is in the eastern part of the central time zone.

Mr. KAHN. Mr. Chairman, there may be two issues underlying your comment.

In any analysis where an average or national average is derived, the question is it truly representative must be raised. The second point, disaggregating by time zone; I am not clear as to what real advantage or disadvantage it would pose. It may well prove to be interesting; I couldn't comment on that at the moment.

One thing that I thought of that was brought up this morning was that in addition to computing averages the analysis should look at the distributions or at least the ranges.

Quite often an average is not truly representative of the population you are using it to describe.

Quite often the variance or range is sufficiently great, that they really are of interest.

Senator FORD. Could you describe for the committee, the differences between statistical significance and figures which show that there are changes in traffic fatalities in absolute numbers?

Mr. KAHN. As far as statisticians are concerned, significance describes or indicates that the change that is taking place, differs from the normal variations that you will expect to see in any phenomena.

For instance, the New York Stock Exchange, as measured by the Dow Jones average, is not constant from day to day. If you're interested in statistical significance, what you are really interested in is did the change that took place as a result of certain phenomena occur on a scale larger than normal day to day fluctuations.

From a statistical point of view, the change need not be large to be statistically significant; may be small if the normal week to week, day to day, or month to month, whatever, fluctuations are also small. On the other hand, if fluctuations in a particular variable are normally rather large, then for a change to be statistically significant, the change must also be large in an absolute sense.

From a normal, everyday standpoint significance usually means large in an absolute sense. From a statistical point of view significance relates to change relative to the normal day to day or month to month fluctuations.

Senator FORD. Let me ask your professional opinion. In your professional opinion, what level of credibility do you believe that Congress should attach to the DOT's conclusion? Particularly, do you mean the study presents significant or sufficient evidence to warrant an extension of the 8-month experiment for the next 2 years?

Mr. KAHN. I think the study indicates that there are some very real reasons to believe that some gains can be obtained from an 8-month daylight saving time program. These gains are based on the analyses presented in the study. If, in fact, one wishes to put a great deal of weight on the importance of these individual gains, then my response would have to be yes.

I think the root of your question is simply how much importance do you give to the modest savings of electricity used, and the modest savings in each of the other areas. It's true of this study, as with most others, that DOT did not take a look at every possible impact of DST.

You're asking me for a political opinion rather than a statistical question and I'm hedging.

Senator FORD. You're doing very well.

You could make a good bureaucrat.

In your analysis of the study, you indicated the fall evenings were somewhat dangerous, they created a problem in October, as I recall.

Mr. KAHN. Right.

The qualifications I made on the study of school age children safety dealt with both the spring and the fall transitions. My qualifications do not effect DOT's conclusion that DST had no impact in the spring. My criticism is with the technique used to determine the impact of DST in the evenings during the fall transition and therefore with the findings here. If one disregards this test, the remaining evidence points to a decline in fatalities in the fall and for 9-11 year olds in fall evenings.

Senator FORD. So you say adjustments could be made or maybe should be made based on what you now know from their study in the fall?

Mr. KAHN. I'm sorry.

Senator FORD. Maybe I'm misreading what you said. In the fall evenings you felt that daylight saving time should be eliminated based on the statistics presented by the DOT.

Mr. KAHN. The point I tried to make, is that the spring transition seems to have imposed no particular hazard on the school age children.

The problem seems to lie in the fall, not in the spring months.

Senator FORD. Well then, would daylight saving time enhance the safety of schoolchildren if it was ended a little bit earlier in the fall? Is that what you are telling me?

Instead of September and October, just have DST in September and not in October?

Mr. KAHN. I'd have to argue that offhand the evidence presented here would be consistent with that statement.

Senator FORD. I think that's all I have for you. I appreciate it.

Will you be available for questions in writing to respond in writing?

Mr. KAHN. Most certainly.

Senator FORD. Fine.

I appreciate very much your having been most kind and patient today.

[The following information was subsequently received for the record:]

THE MITRE CORPORATION,  
McLean, Va., November 17, 1975.

MR. WARREN G. MAGNUSON,  
Chairman, Senate Commerce Committee, The U.S. Senate,  
Washington, D.C.

DEAR MR. MAGNUSON: This letter is in response to a staff request to eliminate any ambiguities that may have resulted from a portion of my testimony on November 13 before the Communications Subcommittee. The potential ambiguity deals with the impact of DST on school age children fatalities at the fall transition. The relevant data are presented on pages 302-307 of Volume II of *The Daylight Saving Time Study*.

The data on page 302 indicate quite clearly that the actual number of school age children traffic fatalities immediately following the 1973 fall transition was significantly below that expected. Given this, the question becomes can this difference be attributed to the DST transition?

The DOT presents data on this question on pages 303 and 305. Their analysis leads them to conclude that DST had no significant impact (pp. 304-5). As indicated in my testimony, I seriously question the validity of these tests. This does not imply that DST did have an impact, but rather that no conclusion may be arrived at from the performed tests. Consequently, making use of the data supplied in the study, I performed the test reported below.

It can be argued that if DST had an impact, it would be felt in the mornings and/or evenings, that is, in the time periods where the amount of daylight varied. The test performed was to determine whether a significant change in the pattern of school age children fatalities by time of day occurred. The data are all from the DOT study and are presented in the attachment. The expected number of fatalities were calculated by imposing the distribution by time of day realized before the transition on the number realized afterwards. These percentages are given in parentheses.

No significant differences were found. The implication is that there was a significant decline in fatalities in all time periods, in the morning and evening hours, as well as in the midday and night hours. In other words, it appears that the factors influencing school age children fatalities acted throughout the entire course of the day and are therefore most likely independent of DST. From this data, one *cannot* attribute the observed decline to the DST transition.

I hope this will provide the Committee with the information needed to eliminate the ambiguity. If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

MARVIN H. KAHN,  
Economic Studies Group.

Enclosure.

ANALYSIS OF SCHOOL TRAFFIC FATALITIES BY TIME OF DAY FALL TRANSITION, 1973

Time period	Before transition		After transition				χ-square
	Number	Percent	Actual		Expected		
			Number	Percent	Number	Percent	
Morning (5:30 to 9:30 a.m.)	53	11.3	42	11.0	43	11.3	0.02
Evening (4:30 to 8:30 p.m.)	257	54.8	204	53.4	209	54.8	.12
Midday plus night (9:30 a.m. to 4:30 p.m.; 8:30 p.m. to 5:30 a.m.)	159	33.9	136	35.6	129	33.9	.38
Total							1.52

<sup>1</sup> With 2 degrees of freedom a χ-square value of 5.99 is needed for significance.

RESPONSE TO THE TESTIMONY OF DR. MARVIN H. KAHN REGARDING THE DOT FINAL  
REPORT ANALYSES OF THE FOLLOWING IMPACT AREAS

MOTOR VEHICLE FATAL ACCIDENTS

In his comments on Tables 7.5-1 and 7.5-2 on page 219, Dr. Kahn misinterpreted the intent of the tables. The tables are included in the report not to show

that DST caused a decrease in accidents (this is shown later in Section 7.5), but only to present a comparison of statistical significance with and without the inclusion in the analysis of weekend fatality data. Thus, these tables are only used to confirm the conclusion that weekday fatality data alone should be used.

Concerning Dr. Kahn's comments on Tables 7.5-5, 7.5-6, 7.5-7, 7.5-8, and 7.5-11, if morning and evening (filtered) fatalities are considered to be statistically independent, then we obtain very low probabilities of random behavior at the actual transition (in fact, even less than Dr. Kahn's nominal 5% figure). For example, multiplying probabilities in Table 7.5-8 by corresponding ones in Table 7.5-8 yields a probability at the actual transition of less than 2%. This is statistically very significant.

#### SCHOOL-AGE CHILDREN FATALITIES

The tables on pages 303 and 305 present data based upon chi-square testing involving *one* degree of freedom, as stated in the Report, and not zero degrees of freedom, as suggested by Dr. Kahn. Consider the morning fatality calculations. The null hypothesis is that the ratio of school-age children fatalities to all others fatalities is the same in the morning as in the parts of the day unaffected by DST (i.e., midday and night). The number of expected morning school-age fatalities is determined by finding the ratio of school-age children to all others fatalities in the unaffected parts of the day and multiplying this ratio by the all others morning fatalities. Thus, the expected value (estimate) of school-age children fatalities is computed without reference to the actual value. This indicates that the actual value is completely independent of the expected value and hence has one degree of freedom. Therefore, the chi-square test to determine whether there is a significant difference between the measured value and the expected value has one degree of freedom. The same reasoning applies to the evening calculation.

The "second problem" referred to by Dr. Kahn is based upon his understanding that the calculations were dependent upon the following assumption: that the ratio of school-age to non-school-age fatalities in the midday and evening periods was the same as for both morning and the evening. However, the assumption actually used was that the ratio of school-age to non-school-age fatalities in the mid-day and *night* periods was the same as for both the morning and the evening.

Senator Ford. The next witness is Mr. Larry Greathouse, Counsel for Governor Julian Carroll of the Commonwealth of Kentucky.

You may proceed, Mr. Greathouse.

#### STATEMENT OF LARRY M. GREATHOUSE; ACCOMPANIED BY ANDREW PALMER, DEPUTY GENERAL COUNSEL TO THE GOVERNOR OF KENTUCKY

Mr. GREATHOUSE. Mr. Chairman, distinguished members of the Commerce Committee, my name is Larry M. Greathouse, a Frankfort, Ky., attorney.

With me is Andrew Palmer, deputy general counsel to the Governor of Kentucky. We are here today on behalf of Kentucky Governor Julian Carroll.

We are grateful for the opportunity to appear before this committee hearing, to submit for the record of this committee's proceedings, a statement of the Governor's views on daylight saving time, its affect on Kentucky, and to address specifically S. 980, introduced on March 6, 1975, by Kentucky's two distinguished Senators, Wendell H. Ford and Walter D. Huddleston, and S. 2566 introduced on October 23, 1975, by the distinguished Senator from Illinois Adlai E. Stevenson.

Governor Carroll, in a letter dated May 20, 1975, to the Honorable William T. Coleman, Secretary of Transportation, expressed his views on the operation and effect of daylight saving time:

a. For the entire year;

b. From March through October of each year (the substance of S. 2566 when a 2-year period, providing for daylight saving time on an 8-month basis, is proposed); and

c. From May through October of each year.

I quote from Governor Carroll's letter to Mr. Coleman:

There is no question but that a substantial majority of Kentuckians oppose daylight saving time for the entire year.

Observance of year-round daylight saving time imposes extreme hardship to schoolchildren, agriculture, and industry requiring daylight working conditions.

In addition, year-around daylight saving time does not serve the convenience of commerce and is, in fact, detrimental to the national energy conservation program.

The experience in Kentucky this year of observing daylight saving time from March through October, although not quite as severe, nevertheless imposed the same hardships on Kentuckians as would have been experienced by the year-round daylight saving time, and in my judgment, this policy should not be continued.

Most Kentuckians, in my judgment, would prefer a national program of daylight saving time which began in May of each year and ended before October of each year.

Such a program would not cause the burdens and hardships on Kentucky's citizens as noted above, and in my opinion, would serve both the interests of commerce and the national energy conservation program.

Governor Carroll's conclusions are based on a great deal of thought and study. Kentucky is divided into two time zones. Kentucky's geographic location in the United States, some 700 miles inland from the Atlantic seaboard, has, historically, caused forceful debate among its citizens and in its legislature as to both the time zone boundaries in Kentucky and daylight saving time in general.

Over 75 percent of the population of Kentucky live in the extreme western edge of the eastern time zone as presently delineated. Moreover, Kentucky's borders are contiguous with seven States: Missouri, Illinois, Indiana, Ohio, West Virginia, Virginia, and Tennessee.

The interstate relationships of people, jobs and commerce greatly affect the merits of time zone boundaries and the merits of both S. 980 and S. 2566.

We must ask the questions:

Do we promote the observance of uniform time within the standard time zones, a policy of the United States as expressed in the Uniform Time Act of 1966 by the adoption of either bill?

Do we further the national energy conservation by the adoption of either bill?

Our judgment is that S. 980 which proposes an amendment of the Uniform Time Act of 1966 and provides for daylight saving time from the first Sunday in May of each year through the last Sunday in September of each year, both promotes the expressed policy of the United States and serves the national energy conservation program.

It is noted that in the Secretary of Transportation's report to the Congress, in July of this year, as required by the Emergency Daylight

Saving Time Energy Conservation Act of 1973, it was concluded "that modest overall benefits might be realized by a shift from the historic 6-month daylight saving time system [May through October] to an 8-month daylight saving time system [March through October], in the areas of energy conservation, overall traffic safety and reduced violent crimes."

Obviously, this conclusion was reached after study and data collection for the period beginning in January 1974 and ending in April 1975 which was a period of emergency legislation.

The report then recommends "using an 8-month system for 2 more years to permit further analysis and more effective measurement of public acceptance and response."

We submit, Mr. Chairman, that it is inherent in human nature to adjust to changed conditions, but whether people will adjust to an 8-month daylight saving time period ought not be a major basis for urging the passage of S. 2566.

The National Weather Service in Louisville, Ky., derives their sunrise and sunset data as issued by the U.S. Naval Observatory. These data indicated the following:

For March 1, 1975—Sunrise occurred at 7:15 a.m. eastern standard time. If we were on fast time, sunrise would occur at 8:15 in the morning.

March 15, 1975—Sunrise occurred at 6:55 a.m. eastern standard time which would mean that on fast time sunrise would occur at 7:55 in the morning.

March 30, 1975—Sunrise occurred at 6:32 a.m. eastern standard time. That would mean that sunrise would occur on fast time at 7:32 a.m.

With respect to electric power consumption in Kentucky, prior to implementation of the emergency legislation in January 1974, opinions were ascertained from three major suppliers of electric energy in Kentucky.

Louis Strong, the general manager of Kentucky Rural Electric Cooperative Corp., indicated:

It is our best judgment that for the five winter months we cannot come up with any conclusive evidence that there is any provable savings in electrical energy by having Eastern Kentucky move their time up an hour.

W. A. Duncan, President of Kentucky Utilities Co., indicated:

While this matter is quite difficult to evaluate and is not subject to precise quantitative evaluation, we are of the opinion that the adoption of Winter Daylight Saving Time would not reduce, by any measurable amount, the electric consumption of our customers or the consumption of fuel in our generating stations.

And B. Hudson Milner, president of Louisville Gas & Electric Co., with regard to winter daylight saving time, indicated that,

In our judgment, such a change would mean an additional use of gas and electricity in the mornings, without an offset saving in the evenings.

To put Louisville on winter eastern daylight saving time would, in our judgment, have a reverse effect from that desired insofar as energy is concerned.

Thousands of Kentucky schoolchildren, even now, wait for school buses in the dark each morning. The 8-month daylight saving time

proposed in S. 2566 would further subject Kentucky schoolchildren to serious inconvenience and danger in the dark hours of early morning, by their having to wait at bus stops in remote areas or walk long distances to school, exposed to unnecessary health and safety hazards.

The proposal increases undue hardships of working mothers, farmers and the agricultural community and to small companies in Kentucky which require natural light for working conditions such as asphalt and construction companies, moving and storage companies, and warehouses which utilize the natural light of day for their work.

In addition, the report of the Secretary of Transportation concluded that modest overall benefits might be realized in overall traffic safety.

We submit that the total motor vehicle fatality rate in Kentucky is a direct result of the 55-mile-per-hour speed limit and only an indirect result of an 8-month daylight saving time program.

It is also noted that S. 2566 provides in section 2 (b) :

Notwithstanding any other provision of law, if a State, by proclamation of its Governor, makes a finding prior to the effective date of this Act, that an exemption from the operation of subsection (a) or a realignment of the time zone limits is necessary to avoid undue hardships to conserve fuel in such State or part thereof, the President or his designee may grant an exemption or realignment to such State.

This same provision was in the Emergency Daylight Saving Time Energy Conservation Act of 1973.

Kentucky was one of the States that took advantage of the section and realigned its zones during the period of the act.

It was done, however, not without great confusion and anguish to Kentucky's citizens, its commerce and relationships with neighboring States.

For these reasons, therefore, S. 980 which proposes an amendment of the Uniform Time Act of 1966 and provides for daylight saving time from the first Sunday in May of each year through the last Sunday in September of each year, has Governor Carroll's total endorsement and urges its passage.

We, again, express our appreciation for your patience and for the opportunity of appearing today before this committee hearing.

Senator FORD. The Chair observes the light on the clock which indicates that there is a vote in the Senate. We have been going a long time.

Is there any objection if we recess until 2:30 and give everybody a chance to get a bite to eat?

Mr. ROSENFELD. Mr. Chairman, the National Safety Council, Mr. Currie is going to have to leave no later than 3 or 3:10 at the latest to catch a plane.

Senator FORD. Fine.

We will see that he testifies after Mr. Greathouse. I have about two questions to ask him. We will get him out of here by 3 o'clock.

Mr. ROSENFELD. Thank you very much.

#### AFTERNOON SESSION

Senator FORD. We will resume questioning two of the representatives from the State of Kentucky.

Mr. Greathouse, the State of Kentucky filed an extensive exemption request with the DOT under the experimental daylight saving time law.

Would you describe briefly the law, because Kentuckians have uncertainties associated with that law.

Mr. GREATHOUSE. The emergency legislation in 1973 went into effect in the early part of January of 1974 for a period of months which would extend it to April of 1975. This immediately brought on for Kentuckians the problem of having to advance the clocks 1 hour in both time zones in Kentucky.

In both the eastern time zone as well as the western time zone, this meant with respect to the schoolchildren, tremendous, undue hardship. This undue hardship was not alleviated with respect to the suggestion that Kentucky schools change the hours of day with respect to school openings.

It was found that the suggestion did not tend to alleviate energy consumption in the schools in any way whatsoever.

The burdens that were placed on Kentuckians with respect to jobs and commerce were expressed openly and tremendous public opinion was voiced to the Governor and legislative representatives in Kentucky with respect to the change.

There was in the 1973 emergency legislation a provision which allowed the State by proclamation of its Governor to exempt itself or realine its time zones.

This brought on additional debate among citizens, particularly in the municipal areas of Kentucky, the Cincinnati metropolitan area, which encompasses northern Kentucky, where Kentuckians, some 30,000, had jobs in the Ohio area, and residents that lived in southern Indiana who worked in the metropolitan area of Louisville and Jefferson County, Ky.

So, if Kentucky alone exempted itself, the changed hours and the concomitant problems of commerce and industry became apparent.

It simply provided no resolution of the problem. Having this particular exemption section in the law does provide some sort of immediate relief of expediency for the Governor to take some action on behalf of his State; but it does not provide a solution for the State's citizens. It doesn't prevent the hardship and wrongs that are caused by it.

That was generally the situation that occurred in December 1973 and early January 1974, prior to the implementation of the act.

I've noticed, Mr. Chairman, that the exemption provision by a Governor's proclamation is provided in the legislation as proposed by Senator Stevenson and I only noted that in this respect Kentucky took advantage of it then and was able to realine itself for a certain period of time, but solved no long-range problems with regard to the daylight saving time issue during the months of March or October and November or during the winter months of the year. It simply did not resolve that problem.

Senator Ford. Apparently the Governors received a great deal of criticism concerning the percent extension of the daylight saving time which I assume prompted his letter to the Secretary of Transportation, objecting to it in great length.

He says there is a substantial majority opposed in Kentucky.

Mr. GREATHOUSE. Are you referring to the letter of May 20?

Senator FORD. Yes.

Mr. GREATHOUSE. This letter was directed to Mr. Coleman as a response to a letter from the then Acting Secretary of DOT who wrote a substantial number of Governors in the country requesting their views with respect to time line zone boundaries within their State, and also their views with respect to daylight saving time on a year-round basis; daylight saving time on an 8-month basis; and daylight saving time from say April through October. That is, the Secretary of Transportation in preparing its report to the Congress in July did make substantial communication with the Governors of States which had two time zones. Governor Carroll's letter of May 20 was in response to that letter and inquiry.

Senator FORD. Well it appears that the DOT just included the Governors' answers on time zone limits and not their objections to an extension of daylight saving time.

I don't recall that DOT study reflecting the views of Governors as to their preferences between the various bills.

Mr. GREATHOUSE. The only notation in the DOT's report was to the effect that Governors had been communicated with; that all of the Governors except one indicated there were no problems at this point with time line zones in their State, and one Governor indicated he thought that there ought to be only two time zones in the continental United States; and no response in the report that we could see that dealt with the enumerated responses by the Governor of Kentucky to the Department's request for information.

Senator FORD. I think that will be a question we will have to ask of those who prepared the data.

My concluding question, do you agree with the conclusion of the DOT that daylight saving time would result in 1 percent savings in the electrical energy?

Mr. GREATHOUSE. Well, the only experience we have is dealing with it on a statewide, that is Kentucky basis. As I indicated in my earlier testimony, the conclusion came from three major power suppliers in Kentucky, which indicated that at least in Kentucky, the amount of electrical consumption savings was insubstantial.

In fact, with daylight saving time in the winter months, there was an increase of electric consumption in the morning which offset any savings in the evening. My statement wasn't addressed to the national conclusion of the DOT; it simply reflected what's occurring at the time in Kentucky.

Senator FORD. Well, I think a statement which you quoted in your presentation, Mr. Milner of Louisville G. & E., represents almost one-third of the population and they state there would not be a saving of electricity or natural gas. Rather there would be an increase in the use of electricity and natural gas as a result of daylight saving time.

Am I correct in that statement?

Mr. GREATHOUSE. Yes. With respect to daylight saving time on a year-round basis and in the winter months, consumption in the city of Louisville and Jefferson County would increase.

Senator FORD. This would also affect the earlier months of spring and the later months in fall?

Mr. GREATHOUSE. The conclusions of Kentucky's three major suppliers looked at the problem by what they generally determine to be a 5-month winter period which does encompass the month of March.

Senator FORD. I have no further questions.

Mr. GREATHOUSE. Mr. Chairman, thank you.

Senator FORD. Mr. Currie, I appreciate your patience.

**STATEMENT OF ROBERT CURRIE, DIRECTOR OF THE NATIONAL SAFETY COUNCIL'S OFFICE OF EXTERNAL RELATIONS; ACCOMPANIED BY HARRY ROSENFELD, GENERAL COUNSEL**

Mr. CURRIE. Thank you very much.

Mr. Chairman, I am Robert Currie, director of the National Safety Council's Office of External Relations. With me is Harry N. Rosenfeld, the council's general counsel.

I am submitting the entire statement for the record, but for the purpose of this oral presentation, I will highlight some of the more pertinent parts.

As a matter of identification, the National Safety Council, chartered by the Congress, is a nongovernmental, nonprofit, public service organization whose only mission is the prevention of accidents. We are grateful for this opportunity to provide information that will be pertinent to your deliberations concerned with the Uniform Time Act of 1966. The council commends this committee for giving due consideration to the implications of your decision as it relates to traffic safety, particularly as it relates to school child traffic fatalities.

It has been stated here today by others that the National Safety Council has conducted two separate and distinct studies concerning the effect of the daylight saving time cycle on school child traffic fatalities.

The first study was initiated in January 1974. This study concerned the effect of the Emergency Daylight Saving Time Energy Conservation Act of 1973 which required a 2-year experiment with daylight saving time beginning January 6, 1974.

The change in daylight saving time meant traveling to school in darkness for many young persons. According to the results of the council's study, the change in the light conditions brought about by the change in daylight saving time had little or no effect on the number of early morning fatalities among school age children. There was no change statistically significant.

The council's study included a survey of all 50 States and the District of Columbia to determine if there was any change in the number of school child traffic fatalities that occurred on weekdays from January 6 to January 31, 1974, as compared with the like period in 1973.

The survey respondents, who represented 75 percent of the Nation's population in 42 States and the District of Columbia, showed no appreciable difference in the number of early morning pedestrian and pedalcycle fatalities experienced by children 4 through 18 years of age in the time frame previously specified.

According to the study, 20 traffic fatalities were recorded in the period January 6 through January 31, 1974, among school children walking or pedaling during going-to-school hours from 6 a.m. to 9 a.m.

By comparison, 19 fatalities were recorded for a like period in 1973; 13 of the 20 youthful traffic fatalities in the given period in 1974 were children under 14 years old; 11 of the 19 fatalities recorded for that period in 1973 were under 14 years old.

Of the 43 reporting agencies, 29 States and the District of Columbia or 70 percent of the reporting agencies, showed either no change or a decrease in the number of school age traffic fatalities. Three States—Alaska, Arizona, and Idaho—were not included in the survey since they did not shift to daylight saving time. Ten States—Florida, Nevada, Virginia, Illinois, New Mexico, Wisconsin, Connecticut, Louisiana, North Carolina, and Pennsylvania—had increases in the number of school age traffic fatalities. Of the States with increased fatalities, Florida showed the biggest increase—up five fatalities in the time period in 1974 as compared with the same time period in 1973.

Based on this study, the council has concluded that the change in daylight saving time that commenced in January 1974 has little or no effect on the number of early morning traffic fatalities among school age children.

The council's second study was conducted at the request of the Office of the Secretary of Transportation. In March of this year, we again surveyed the 50 States and the District of Columbia to determine if the months of March, April, October, and November, those that would be affected by a change in daylight saving time, had any effect on the number of traffic fatalities involving schoolchildren.

The Council's study called for data that would specify the number of traffic fatalities of schoolchildren who were pedestrians or pedalcyclists, age 5 through 18, which were struck by motor vehicles on weekdays between 7 a.m. and 4:30 p.m.

The data were requested for the months of March, April, October, and November for the years 1972 through 1975.

Similarly, the Council called for the total number of traffic fatalities for the same time periods so that valid comparisons between the two sets of data could be made.

Twenty-six of the 50 States responded, representing about 51 percent of the Nation's population. The results of this second study substantiate the general finding of the first study.

The results of the second study again lead the National Safety Council to conclude that including March and April in the daylight saving time cycle would not have any appreciable effect on the number of school age pedestrians and pedalcyclists killed in traffic accidents while going to or from school.

I have attached to this statement details in the form of tables reflecting the data generated by the second study. We hope these data and information transmitted in this statement will be of significant help to this committee and to the Congress in making a permanent decision concerning future administration of the Nation's time system.

We would be pleased to answer your questions with respect to the two studies conducted by the National Safety Council.

[The attachment follows:]

## MOTOR VEHICLE TRAFFIC FATALITIES BY STATE 1

State	1972			1973			1974			1975		
	March	April	October-November	March	April	October-November	March	April	October-November	March	April 2	
Total.....	1, 978	2, 097	2, 500	2, 265	2, 173	2, 500	2, 112	1, 527	1, 640	2, 030	2, 005	1, 547
New Mexico.....	36	52	50	37	46	70	49	32	35	41	29	40
Wisconsin.....	61	106	99	105	113	106	108	51	98	98	69	51
South Dakota.....	5	24	31	24	27	24	30	7	21	30	28	3 16
Iowa.....	42	43	80	59	67	75	64	39	48	59	66	3 55
Oregon.....	46	43	72	57	78	68	38	45	35	42	65	47
Vermont.....	36	5	12	6	18	22	22	9	6	11	14	3 7
Utah.....	35	15	29	25	30	34	22	9	23	30	18	11
Oklahoma.....	54	64	56	67	59	76	87	36	48	75	72	3 57
Ohio.....	169	164	240	186	152	215	173	132	123	177	159	101
Rhode Island.....	4	8	17	14	17	13	11	6	7	11	8	7
New Hampshire.....	7	19	19	14	9	15	13	6	5	15	19	11
North Dakota.....	16	16	21	28	17	29	18	11	5	10	21	3 8
South Carolina.....	75	106	71	101	82	81	61	63	80	81	78	3 61
Illinois.....	157	176	219	191	164	205	174	97	129	193	206	116
Hawaii.....	10	15	16	11	11	13	13	10	7	4	20	10
New Jersey.....	81	100	126	95	104	132	102	87	73	80	82	3 67
Minnesota.....	42	57	78	68	62	87	83	64	43	80	182	3 37
Connecticut.....	33	35	38	33	41	40	40	29	27	36	41	49
Kentucky.....	91	87	97	76	81	109	90	54	62	81	59	3 33
Kansas.....	37	46	52	48	44	56	38	28	36	31	31	3 53
Florida.....	219	220	169	225	241	213	209	208	192	157	181	3 168
California.....	424	396	461	415	407	465	398	260	317	359	353	3 313
Montana.....	18	34	33	34	21	36	25	14	11	21	20	11
North Carolina.....	150	148	181	143	139	172	128	124	113	146	120	114
Mississippi.....	83	56	81	66	73	60	68	43	52	43	50	3 50
Massachusetts.....	51	73	109	89	80	80	75	61	81	106	80	3 56
Total 16 States for March 1975.....	1, 302	1, 372	1, 372	1, 372	1, 013	1, 013	1, 013	1, 013	1, 013	1, 013	1, 013	1, 039

1 All figures preliminary.

2 April 1975 figures not available.

3 States which reported school child deaths for March 1975.

Source: State reports. Report prepared by: Statistics Division, National Safety Council.

SCHOOL CHILD FATALITIES BY STATE<sup>1</sup>

State	1972			1973			1974			1975		
	March	April	October	November	March	April	October	November	March	April	2	
Total.....	37	37	40	25	42	37	43	37	25	30	28	38
New Mexico.....	1	0	0	0	2	0	0	1	0	0	0	1
Wisconsin.....	3	0	1	0	0	6	1	2	2	1	0	0
South Dakota.....	0	0	1	0	0	0	1	0	0	0	0	0
Iowa.....	1	0	3	1	3	1	0	0	0	0	1	0
Oregon.....	1	1	0	0	0	0	0	0	0	0	0	0
Vermont.....	0	0	1	0	0	0	0	0	0	1	0	0
Utah.....	0	0	1	0	0	0	1	0	0	0	0	0
Oklahoma.....	1	3	7	1	6	6	1	3	0	6	2	3
Ohio.....	6	0	0	1	0	0	2	0	1	0	0	0
Rhode Island.....	0	1	0	0	0	0	0	0	0	1	0	0
New Hampshire.....	0	0	0	0	0	0	0	0	0	0	0	0
North Dakota.....	0	0	0	0	0	0	0	0	0	1	0	0
South Carolina.....	3	5	1	3	2	3	7	3	2	2	3	2
Illinois.....	2	1	3	0	6	3	2	1	2	0	4	0
Hawaii.....	0	0	0	0	1	0	0	0	0	0	2	0
New Jersey.....	0	4	0	1	1	1	0	1	3	0	4	4
Minnesota.....	0	0	2	0	1	1	2	3	2	1	1	0
Connecticut.....	0	0	0	0	1	4	0	0	0	2	1	0
Kentucky.....	4	2	2	3	1	4	4	1	1	2	1	2
Kansas.....	1	1	1	1	0	0	0	1	0	0	0	0
Florida.....	1	0	1	4	2	0	3	1	4	2	0	0
California.....	5	3	5	3	7	7	4	5	6	7	4	13
Montana.....	6	2	0	0	0	0	1	0	0	0	0	0
North Carolina.....	4	0	2	1	2	1	0	0	0	0	0	0
Mississippi.....	4	4	0	1	0	0	0	0	0	0	0	0
Massachusetts.....	1	1	0	2	1	2	0	0	0	0	0	1
Total 16 States for March 1975.....	21	14	2	2	4	8	2	1	1	1	2	1
Total 10 States for April 1975.....	23	14	8	5	19	6	9	5	9	9	9	5

<sup>1</sup> Pedestrians and pedalcyclists of school age (5-18) struck by motor vehicles on weekdays Letwe 7 a.m. and 4:30 p.m. Source: Special State reports. Report prepared by: Statistics Division, National Safety Council.

Month	1972	1973	Percent change (1972-73)	1974	Percent change (1973-74)	1975	Percent change (1974-75)
March (26 States).....	(1)	(1)		(2)		(2)	
All fatalities.....	1,978	2,058	+4.0	1,527	-25.8		
Schoolchildren.....	37	42	+13.5	25	-40.5		
March (16 States).....	(1)	(1)		(2)		(2)	
All fatalities.....	1,302	1,372	+5.4	1,013	-26.2	1,039	+2.6
Schoolchildren.....	21	23	+9.5	19	-17.4	9	-52.6
April.....	(1)	(1)		(2)			
All fatalities.....	2,597	2,173	+3.6	1,640	-24.5		
Schoolchildren.....	37	37	0	30	-18.9		
October.....	(2)	(2)		(2)			
All fatalities.....	2,500	2,500	0	2,030	-18.8		
School children.....	40	43	+7.5	28	-34.9		
November.....	(1)	(1)		(1)			
All fatalities.....	2,265	2,112	-6.8	2,005	-5.1		
Schoolchildren.....	25	27	+8.9	38	+40.0		

<sup>1</sup> Standard time.

<sup>2</sup> Daylight saving time.

Source: Statistics Division, National Safety Council.

Senator FORD. Did you consider this effect on traffic fatalities of the 55-mile an hour speed limit? Did you inject that factor into your statistics?

Mr. CURRIE. Yes.

There was a general trend of traffic fatality reduction due to the 55-mile an hour speed limit and other factors. Such factors were cranked into the analyses which lead us to the conclusion that there is no significant difference in the traffic fatalities for school age children.

Senator FORD. Dr. Kahn in his analyses of the report indicated that there was an increase in fatality rate in the month of October. I think he indicated that it would help in fatality rates if the month of October was excluded from daylight saving time.

Do you have any indication in your study that substantiates Dr. Kahn's views?

Mr. CURRIE. The change in traffic fatalities from 1973 to 1974 for school age children for the month of October shows a decrease of about 34.9 percent.

Again, comparing 1973 to 1974 for school age children in the month of November, we had an increase of 40 percent in the number of fatalities.

Now, if we could attribute the latter difference to daylight saving time, it would indicate that daylight saving time might be a factor for the month of November.

Mr. Chairman, I refer you to the last page of the statement for that data.

Senator FORD. You have any indication why you had such an increase?

Mr. CURRIE. In the period between January 6, 1973 and January 31, 1973, there was an increase of five fatalities in the State of Florida—which was a pretty significant increase.

We are unable to make the determination that that increase was due only to a result of the change to daylight saving time.

I think if the committee were to take a look at the records concerning the weather conditions in Florida for the week of January 21, the week in which four of the fatalities occurred, the committee would

find that the weather conditions were adverse for safe driving and for the safety of pedestrians. The weather conditions on the coast were particularly adverse. The fatalities that were reported were from counties on the coast.

So, therefore, a fog condition may have, and probably did, play a significant part in the increase of the traffic fatalities in Florida in the week of January 21.

Senator FORD. Is it easier to drive during unpleasant weather in the dark or in the daylight?

Mr. CURRIE. I would submit that I'm not a traffic safety expert and—

Senator FORD. You're representing the National Safety Council, aren't you?

Mr. CURRIE. Yes, sir.

Based on my experience, a combination of fog and darkness is worse than the single factor of fog.

Senator FORD. So you're saying then it would probably be better to drive, from your personal experience, in daylight hours rather than darkness in inclement weather?

Mr. CURRIE. Yes, sir.

Senator FORD. Something daylight saving time cannot prevent is inclement weather.

Apparently you used a good many years in your determination to try to ascertain whether daylight saving time was harmful or not to the children going to school. I think you're going to confine your testimony to the safety factor of daylight saving time.

Mr. CURRIE. That's correct.

Senator FORD. When did the 55-mile an hour speed limit begin?

Mr. CURRIE. The energy crisis started spring of 1973 and shortly thereafter that the 55-mile an hour speed limit was introduced.

I'm sorry, I don't know exactly when the 55-mile an hour speed limit took effect, but we do know that it did have a significant affect in the reduction of traffic fatalities in 1974.

Senator FORD. I know it cost the States several hundred thousand dollars to change the signs.

I think it was August 1, 1973, because we had to change our State law in order to conform with the national legislation to keep people from having problems.

Did you factor into your consideration the beginning of the 55-mile an hour speed limit?

Mr. CURRIE. Yes, sir.

We still came to the same conclusion. Our analysis included the 55-mile an hour limit and other factors concerned a reduction in traffic fatalities.

We had an increase of one traffic fatality for schoolchildren in the period of time specified, but the increase is not a statistically significant increase. Our conclusion is that daylight savings time for the two periods in question is not a statistically significant factor.

Senator FORD. Will you explain in greater detail why daylight saving results in an overall improvement of traffic safety?

Mr. CURRIE. We have not indicated that daylight saving time improves traffic safety.

We have no data that would enable us to single out a factor such as daylight saving time as being responsible for a specific number of traffic death reductions.

Senator FORD. In other words, your study indicates that daylight saving time does not increase the possibility of fatalities?

Mr. CURRIE. That's correct.

Senator FORD. So, really, daylight saving time is not a factor in traffic safety?

Mr. CURRIE. That's what we're saying.

Senator FORD. Could it be a traffic factor in certain given areas?

I know they cited my State today. We had a reduction prior to daylight saving time and prior to the 55-mile an hour speed limit, which the Secretary brought out.

Mr. CURRIE. Let me check that on the second table.

Mr. Chairman, you will find the results from Kentucky for the months of March and April and October 1973 as compared to the like period in 1974 on the second table.

Senator FORD. Could daylight saving time be hazardous in certain areas of the country?

I'm talking about isolated—well, maybe not isolated Appalachia, for instance—runs by congressional designation from New York to Mississippi.

Could the Appalachian region have more problems as a result of daylight saving time?

I don't know whether you heard the school superintendent testify this morning but on the secondary roads in eastern Tennessee, western Virginia, eastern Kentucky, 90 percent of the students are carried to school on buses.

Could it be that daylight saving time would be more harmful to certain areas?

Mr. CURRIE. We have no evidence to show that it would be either more harmful or less harmful.

Senator FORD. Either direction?

Mr. CURRIE. Either direction.

Senator FORD. You wouldn't say it would be helpful?

Mr. CURRIE. No evidence to show that either.

Senator FORD. I guess I should have asked that question first if I wanted the right answer.

One quick question and I'm going to get you out of here within 2 or 3 minutes as you asked.

Does the National Safety Council have hourly data on schoolchildren fatalities during the time of daylight savings?

Mr. CURRIE. Well, that would require a special study.

The information we have—

Senator FORD. Just from the hours of 7 to 4:30 and not from 7 to 8; and 8 to 9; 2 to 3; 3 to 4?

Mr. CURRIE. That's correct.

Senator FORD. So you couldn't really say that from your study fatalities did not occur in the early morning hours?

Mr. CURRIE. No.

Not in the second study; the first study was concerned with the early morning hours only, 6 a.m. to 9 a.m.

Senator FORD. But in your second study, you do not designate or segregate the hours of day as to the fatalities and you could not say in your testimony today that the fatalities did not occur in the early morning hours; you really don't know?

Mr. CURRIE. Yes, sir.

That's correct.

Senator FORD. I guess I could ask you other questions; I am very much interested in the subject, Mr. Currie.

I appreciate your coming and testifying today.

It is an emotional issue as you well know. We appreciate your patience. You've been a very good witness and if you have anything to add to what you've heard today, we would appreciate having your comments as related to these two pieces of legislation.

I'd like for you to confine your comments to the Stevenson bills, S. 980 and S. 2566; just those two pieces of legislation.

Mr. CURRIE. S. 980 and S. 2566. We will do it, Mr. Chairman.

Senator FORD. We appreciate it very much.

[The following information was subsequently received for the record:]

NATIONAL SAFETY COUNCIL,  
Chicago, Ill., November 18, 1975.

HON. WARREN G. MAGNUSON,  
Chairman, Committee on Commerce,  
U.S. Senate,  
Washington, D.C.

DEAR MR. CHAIRMAN: The National Safety Council had the privilege of testifying before the Senate Committee on Commerce on November 13 with respect to amendments to the Uniform Time Act of 1966.

Upon completion of presentation of the testimony and the dialog that followed, Acting Chairman Ford suggested that if the Council has any further information that would be of interest, the Committee would be glad to receive it.

The Council has additional information, attached, concerning school child fatalities for the hours of 6 a.m.-9 a.m. and 3 p.m.-6 p.m. for the months of March, April, October and November for 1972 through 1974. The Council is presenting these data since the timeframes involve the going-to-school hours and the coming-from-school hours in the months that are critical to the daylight saving time issues.

We trust this will be helpful to the Committee and the Congress in making a permanent decision concerning the future administration of the Nation's time system.

Sincerely,

ROBERT CURRIE,  
Director, Office of External Relations.

Attachment.

SCHOOL CHILD FATALITIES

SUPPLEMENT TO THE NATIONAL SAFETY COUNCIL'S TESTIMONY CONCERNING  
AMENDMENTS TO THE UNIFORM TIME ACT OF 1966

The table below represents results obtained from a survey of the 50 states and the District of Columbia in which 26 states representing 51 percent of the Nation's population responded. The table shows the number of fatalities of pedestrians and pedalcyclists of school age (5 to 18) struck by motor vehicles on weekdays between 6 a.m. and 9 a.m. and between 3 p.m. and 6 p.m. in the months designated for the years 1972 through 1974.

The results of this study lead the Council to conclude that including March, April, October and November in the daylight saving time cycle would not have a statistically significant effect on the number of school-age pedestrians and pedalcyclists killed in traffic accidents while going to or from school.

Time and month	Year		
	1972	1973	1974
6 a.m. to 9 a.m.:			
March.....	4	13	7
April.....	8	4	4
October.....	13	14	10
November.....	10	6	7
Total.....	35	37	28
3 p.m. to 6 p.m.:			
March.....	19	18	13
April.....	16	22	17
October.....	19	21	14
November.....	11	9	15
Total.....	65	70	59

Senator FORD. The next witness is John Koon, executive secretary, Kentucky Farm Bureau Federation.

You may proceed.

#### STATEMENT OF JOHN KOON, EXECUTIVE SECRETARY, KENTUCKY FARM BUREAU FEDERATION

Mr. KOON. Mr. Chairman and members of the committee, my name is John Koon. I am executive secretary of the Kentucky Farm Bureau Federation, the largest general farm organization in Kentucky with a membership of more than 182,000 families.

On behalf of the farmers of our State, I thank you for the opportunity to present our position on the complex question of daylight savings time observance.

First, I would like to quote from the national policy recommendations adopted by the voting delegates to our most recent Kentucky Farm Bureau convention, December 1974.

"We support legislation limiting daylight saving time to the months between Memorial Day and Labor Day."

The question of time observance has become so confused in recent months, I feel that I should review some of the basic concepts of daylight savings time.

In the first place, fast time is a convenience factor, designed to give people more daylight hours in the afternoons, after work, in which to enjoy leisure activities.

Second, I feel it should not be viewed as a way to conserve energy. Although many lawmakers and other Federal officials were convinced 2 years ago that year-round fast time would save fuel, the anticipated savings, for the most part, did not materialize.

Third, daylight savings time in the State of Kentucky does create considerable hardship on people. It is not, as it's sometimes portrayed, a harmless diversion which benefits most people, and harms no one.

Fast time observance during months of shorter daylight hours does pose definite physical dangers to schoolchildren, particularly rural youngsters who wait beside dark roadways for school buses.

With these facts in mind, I state unequivocally that Kentucky Farm Bureau's position, in favor of limiting fast time to the period between Memorial Day and Labor Day, best balances convenience against inconvenience for fast time observance in Kentucky.

Keep in mind, if you will, that all of Kentucky, except a tiny corner of its easternmost county, falls in the central time meridian.

Two-thirds of its population, however, and more than half its geographical area have been arbitrarily located in the eastern time zone.

Add the effects of daylight time to this placement, and you can readily see that much of our State now spends half the year on a time which is 2 hours ahead of our natural meridian time.

Thus, in the fall and spring, many schoolchildren are forced on a schedule which puts them out in the dark, waiting for school buses, a full hour before daylight.

These same children must get out of bed at what was 4 a.m. when you and I were growing up, before we had daylight time.

This inconvenience has been compounded in Jefferson County this fall, where the tragedy of forced busing for integration has required children of all ages onto the streets at even earlier times than before.

Many Louisville children were arriving at school more than an hour before daylight, prior to the time change in late October.

Another factor which favors the shorter period of fast time relates more directly to agriculture. Farmwork, much of which is governed by the Sun, and 8 a.m. to 5 p.m. workdays don't always coincide.

Add the problems created by daylight saving time, and the result can be a costly overlap in farm and city work schedules.

In short, I recommend confining the fast time period to the summer vacation months, June through August. This would negate the detrimental impact of our current time legislation on schoolchildren, while adding to the late-afternoon daylight hours for leisure-minded urban area workers.

Any consideration given to lengthening the current 6-month period of daylight time observance would be totally contrary to the views of Kentucky farmers.

Thank you for this opportunity to present our views.

Senator FORD. Mr. Koon, I'd like to ask you a question or two.

You say in your statement that problems created by daylight saving time result in a costly overlap in farm and city work schedules.

What do you mean by that?

Mr. KOON. Mr. Chairman, the farmers depend in many cases on people or workers who live in our small rural towns, in urban centers.

Now, many times of the year, the farmer cannot harvest crops because of the dew on the crops in the early morning hours.

It is often 10 o'clock in the morning or later before he can work in the hay field.

The people who are coming from the urban centers to help out on the farm are on daylight time. This magnifies the problem, I think you can see.

They want to work, you know, the same hours other people are working in industry and business.

Senator FORD. Are you saying, then, that because of daylight saving time, the farmer is losing money because he has to employ urban workers who would be available at an earlier hour but he has to wait to start work under DST and the farmer is paying him while he is waiting for the sun to remove the dew from the hay, or to get into a crop?

Are you saying that it is costly to the farmer?

Mr. KOON. Mr. Chairman, that's absolutely true.

We don't have any exact figures to substantiate this, but many farmers in Kentucky will tell you it costs them thousands of dollars to employ workers that will come to work early in the morning before the dew is removed and actually sit around and kill time so to speak; but you still have to pay them for it.

This waiting, maybe doing some odd jobs, but not really productively employed until the dew clears, so that harvesting can actually begin, is costing the farmer extra dollars.

Then, at 4 o'clock in the afternoon when working conditions are most favorable, these workers are ready to go home and do quit.

We have these problems; this isn't just a supposition; these are actually true facts of what is happening with the agricultural worker.

Senator FORD. Does this damage to the farmer in the market place occur because he has to wait because of daylight saving time?

He's delayed by the so-called fast time in harvesting his crop; thereby, delivering it to the merchant in the community grocery store, wholesale operation, whatever it might be, and those who shop at early hours. Is he prevented from selling his products at that time?

Mr. KOON. This is true.

It also prevents him, Mr. Chairman, from, perhaps, purchasing repair parts for farm machinery.

Now, many farmers this time of the year, the time of harvesting grain or hay baling or housing tobacco, will work well into the night.

On daylight time, the farm machinery repair people close their offices much earlier in the afternoons, so if the business establishments ordinarily close, say, at 5 o'clock in the afternoon, then when you go on daylight time, see they—

Senator FORD. Four o'clock for the farmer and 5 o'clock for the repair shop; therefore, he loses the opportunity to get repairs; he has to wait until the next day.

Mr. KOON. This is true.

There are several others; one in particular is social. Farm people enjoy being members of civic clubs and church activities or school activities.

They need to be in the fields working at 6 o'clock, the time that the civic clubs have set to meet.

This puts us far ahead of suntime, makes it very difficult for them to attend social functions.

This is not an economic value, but purely a social value. We're trying to operate this time schedule for the convenience and well-being of our people.

Senator FORD. You are saying to me that, while, it might provide an additional hour of leisure time for those within a city, it prevents those in the rural area from having additional time in the evenings to attend social meetings, and socialize with those people and enjoy their company?

Mr. KOON. Many times this is true.

Senator FORD. Is daylight saving time hindering our ability to keep the younger people on the farm?

Does it help delete the small farmer?

Mr. KOON. Mr. Chairman, no doubt this is true; of course the economic factor I'd have to admit is a greater influence on keeping

young farmers on the farm; but the social condition or climate is a factor.

Senator FORD. Just helps compound the problem, doesn't it?

Mr. KOON. Just helps compound the problem.

Mr. Chairman, if I may, I would like to comment a little more on schoolchildren.

We were hearing earlier today from the National Safety Council. Admittedly, maybe getting out on the roads and catching schoolbuses an hour before daylight in the morning does not prove to be a safety hazard, but let's look at it from the standpoint of a human element.

Little children walking down these country roads out from their farm homes and waiting on the side of rural roads for schoolbuses to come by for them; it's unpleasant to be out there.

If they don't get killed, not in a schoolbus accident, let's measure some way how unpleasant it is.

I'd like to suggest some of these people who are making the surveys, actually go out there and walk those muddy roads and stand on the side roads and wait for that schoolbus.

Another factor I'd like to have measured, too, is how much school time is lost when you start these schoolbuses an hour before daylight in the morning.

You know you run into fog and in inclement weather, the buses are habitually late and they run 15 minutes, 30 minutes, sometimes 1 hour late getting to school.

You're depriving those students then of a part of their instructional day, and if we're going to really measure the affect of this thing, instruction is an important matter even if, as you have heard, safety is not a factor.

After all, we are having school for learning processes, aren't we?

Senator FORD. I hope so.

Mr. KOON. When you're out there with the early morning schoolbuses, they are going to be later and deprive these youngsters, then you have their education, which the whole process is about.

Senator FORD. I think you made a point in your testimony that this problem of daylight saving time has moved from the rural area to the urban centers where the problem of forced busing has been injected into the educational system. The city student is now arriving at school an hour before daylight, and that means in one county in Kentucky, Jefferson County, some 30,000 students that are now being moved from one section of the community to another, and I believe as much as 22 to 25 miles, one way. That's all in darkness.

So, the darkness of the transportation of schoolchildren is not confined now to the rural area.

Mr. KOON. You're so right.

I live in Jefferson County, and we really have a chaotic situation. It helped us some the latter part of October when we returned to slow time a big help in Jefferson County.

Senator FORD. Dr. Kahn earlier stated that daylight saving time in October, may not save lives, and he also indicated that it should be taken off.

Mr. KOON. Right.

Senator FORD. So we are getting some input into the discussion today that our present 6-month daylight saving time timeframe may be too long for daylight saving time, I think.

The testimony some 2 weeks ago before the Congress indicated that under the circumstances that now prevail in Louisville and Jefferson County, they need additional buses at a cost of \$5½ million dollars in order to have a regular school day. We are creating additional hazards in health and social problems to students with daylight saving time.

Mr. KOON. Mr. Chairman, let me say that S. 980 would greatly improve the situation.

What I would like to do is have daylight time from Memorial Day to Labor Day; this way it would not disrupt school systems and still give us daylight saving time.

It is a compromise as far as farmers are concerned. Actually, farmers prefer not to have any daylight time.

Again, we are trying to be fair about this matter and are willing to concede that if we establish it and let it become permanent, let's quit changing every year or two.

We have had enough research and enough trial and error; let's have some legislation that will start daylight time on Memorial Day each year and end it on Labor Day.

This would be before school starts; all schools start about the first of September, and then I think we would have a situation that a very large majority of the people of the United States would be happy with.

Senator FORD. Well, you know, we've had a lot of discussion about daylight saving time and I am reminded of the official court in one of the counties arguing about whether to go on daylight time or stay on standard and one of the magistrates offered a suggestion that they split the difference.

Mr. KOON. Yes; and some of them did.

Senator FORD. Yes. Some did.

I thank you, Mr. Koon, for coming today and thank you for your patience. You've been a very excellent witness.

The next witness is Mr. Crawley, president, radio station WMSK, Morganfield, Ky.

You don't have a prepared statement?

**STATEMENT OF J. B. CRAWLEY, PRESIDENT, RADIO STATION  
WMSK, MORGANFIELD, KY.**

Mr. CRAWLEY. No.

Senator FORD. You may proceed.

Mr. CRAWLEY. Mr. Chairman, I full well realize the seriousness of this inquiry, but I hope that I wouldn't be censored if I just add a little bit of humor as I go along.

Senator FORD. We like humor, because when you lose good humor, you are in bad shape.

Mr. CRAWLEY. I am J. B. Crawley, I am a resident in Campbellsville, Ky., and my family and I are owner in part or total of small radio stations in Kentucky.

For instance, I'm half owner of Shelbyville, Ky. radio, population between 5,000 and 6,000 people; somewhere between Louisville and Frankfort, and I have a third interest, owner in a town, Cookville, Tenn., a town of 16,000 to 17,000; midway between Nashville and Knoxville.

I own a station in Morganfield, Ky., getting down in the center of the country; again, between Owensboro and Paducah. My children and my brothers have Crittenden County, 30 miles east of Paducah.

They are a class of stations that are assigned by the FCC as local, as regional, as clear channel in various types of stations which are designed to serve different groups of people.

We have a small station, 250 watts of power is our maximum. There they are channels normally assigned for only daytime use, that is sunrise until sunset on frequencies that are clear channels either in the United States, in Canada or in Mexico, and because of treaties that are made with other countries, Mexico and Canada, in particular, there is no way that we could come on the air with full power prior to sunrise.

Now because of that, we have no way we can operate. By the time the Sun comes up, all we can do is just change the hour of day we come on, because we still have to come on the air the same Sun time with the radio stations.

In trying to work out something along this line with the FCC, we tried to be allowed to have a daytime station where it was feasible to operate with extremely reduced power so we do not put a signal across the Mexican or Canadian boundaries.

For instance, the station in Cookville normally operates with 250 watts; it's allowed to come on the air before sunrise at 6 o'clock in the morning with  $7\frac{1}{2}$  watts of power; that's about the amount that the little light in the hall to see your way to the bathroom puts out.

SENATOR FORD. Would that transmit out of town?

MR. CRAWLEY. It's one of those freak things; sometimes it does, sometimes it doesn't.

Now, one better at WMJL in Marion, Ky., prior to sunrise the power is  $3\frac{1}{2}$  watts; that's as much as the little one-cell pen lights put out, and you know how far the beam from that reaches; it does cover the limits of the town, but not very much in the country.

In Shelbyville, we are on the frequency of the station in Canada and we cannot come on the air until the sun comes up.

Fortunately, the sun comes up just a little bit earlier in Canada and Shelbyville is allowed to come on 30 minutes before actual sunrise.

Now if you think about what radio was for, we are licensed to serve the public interest and necessity. This is what we're there for; from the Communication Act of 1934 as amended.

One of the main things that we have been able to do that we think radio has contributed greatly to is this business of warning about inclement weather.

The Louisville stations in particular received an award because of their news coverage on the tornado in April of last year.

We people rely heavily upon the radio station to know whether school buses are going to run today;

Are there some runs not to be made in the county?

Are schools going to be closed; because not everyone can call up the superintendent's number and get him at the early hours of the morning.

Unfortunately, if we had advanced time year-round or for an extremely long period of time, the sun which comes up at 7 o'clock in Shelbyville, Ky., on eastern standard time would now be coming up at 8 o'clock on eastern advance time or daylight saving time, if you please.

The people who are waiting on the side of the road to find out if the schoolbuses are going to run, already know whether they're going to run before we're on the air to tell them.

So, we have been—these people have been deprived during daylight saving time; if it goes into winter or early spring, these people are being deprived of the local radio station to tell them what the weather conditions are and whether or not they can run the bus that day.

Now, we're a long way from Washington, D.C., in Kentucky, we don't have all of the statistics that these gentlemen had today.

We have to depend upon your surveys that are made in New York and Washington and hope they're right for the conclusions we draw, but we went through a war for several years and we still didn't find out from Washington whether it is Vietnam or Viet Nam; trying to find out still; but when the announcer called a female sheep an ee-wee, we fired him; because we don't care too much what the social life is in Washington, but if you start messing around with our livelihood, we get upset.

So, when you start talking about the tobacco, coal, corn, or time, it concerns us and I'm one of those fellows that may be considered in the minority, that when they say well, it really doesn't matter if 250, or 500 of so many thousand radio stations do not have listeners; the authorities lost money last year, and it does affect me.

And I'm concerned even though I may be in the minority. Small town radio cannot compete in the evenings with large, network television. This is a known fact.

The time that we're listened to is primarily in the early morning hours. The farmer who is out in the barn, the lady who is preparing breakfast, or the gentleman who is driving from the farm area to work in the small towns, we call that drive time; and this is the time when we have most of the listeners.

And our businessmen are smart enough to know this and this is the time to advertise.

So every 3 years, I have had the problem of trying to explain to the FCC why we have so many commercials for that time of the day.

Now, change the setting of the clock to where my station doesn't come on the air until after the businessman has already driven to work, until after the farmer has already completed his chores around the house, out in the field, I've lost that amount of advertising time.

The fact that I have it added on the other end of the day doesn't help me one bit. This is the time of the day that is not prosperous for us, anyway.

So, this is what we are up against down on the farm in the small counties where there are town radios that I am a part of.

So, really the people that I have polled, the people that I have talked to, go along pretty well, the concensus is that if they had their rathers, they'd rather go along with say Memorial Day through Labor Day in September; but if not, would rather see a short period of daylight saving time rather than a long period of daylight saving time.

Now, I hasten to say not all radio announcers are as bad as the two I mentioned; some even get into politics; but we would like to see this compromise made as best we could.

Now, I'd like to add one more thing, if I may, on this business of schoolchildern.

Both of my children are schoolteachers; my son in Alabama; my daughter in Florida.

She lives right in the south-central part, on Lake Okeechobee and teaches about 30 miles away. Unfortunately, her schedule calls for her being at school at 7 o'clock.

She drove 30 miles in fog, generally with her radio wide open to keep from going to sleep, with the window down to try to make out where the white line was in the fog in the early morning hours, and got to know the alligator and one man out in the canal spraying the weeds, trying to kill vegetation, and she was very glad when daylight saving time was over as far as she was concerned in her driving to work, and if she's doing that in her car all over that section of that State, even in the everglades swamp area, some Indian boys and girls commute as far as 50 miles a day from the everglades to school where she was.

She is a teacher. I know this is a problem. I know firsthand because she told me.

Thank you for the privilege of speaking on this.

Senator FORD. Let me ask you a question or two, if I may.

Mr. CRAWLEY. OK.

Senator FORD. In the testimony by Larry Greathouse, he gave three dates in 1 month that the sun comes up; three different sunrise times. Each sunrise time was different, like 8:15 on March 1; 7:55 on March 15; and sunrise at 7:32 on March 30; 6:32 eastern standard time.

Mr. CRAWLEY. We're given an average time for those months that we can come on. We can come on a little earlier or a little later, all the entire month, we would be allowed to come—

Senator FORD. In other words, for the first 15 you'd be ahead; for the last 15, you'd be behind?

Mr. CRAWLEY. Right; right; that's it.

Senator FORD. Do you each day get the time from the national weather service?

Mr. CRAWLEY. No.

We have a schedule that is published and we go by this. It sets out the time that we can go on the air and the time that we have to leave the air.

When we change time signals, we have to rearrange this to fit whatever time it is.

Senator FORD. In the testimony of the DOT, they said only 500 stations out of 2,300 were affected and the loss per station averaged \$454 during the daylight saving time.

Let me see if I am correct; I want to be correct.

Mr. CRAWLEY. They checked 500 stations. I didn't get a letter.

Senator FORD. You didn't get a letter?

Mr. CRAWLEY. No.

So we sent in our financial statement each year, and the annual statement; but it is not broken down into months, is for the entire year.

So they could not get the monthly information from this; this had to be a particular inquiry.

Senator FORD. So, evidently, you were not surveyed?

Mr. CRAWLEY. No. I was not.

Senator FORD. You have a connection with some four or five radio stations?

Mr. CRAWLEY. Four.

Senator FORD. Four radio stations?

Mr. CRAWLEY. Yes.

Senator FORD. And the largest community would be?

Mr. CRAWLEY. Fifteen, seventeen thousand.

Senator FORD. And the smallest?

Mr. CRAWLEY. 2,500.

Senator FORD. The average, 5,000, 6,000, 7,000?

Mr. CRAWLEY. Right.

Senator FORD. You're caught in the squeeze between the biggest, too, aren't you?

Mr. CRAWLEY. Every way. Every place.

Senator FORD. I don't want you to get into your financial statement here, today, and I don't want to ask you to reveal it, but would you say that the average loss per your four stations that you have some personal knowledge of would only be \$454 a year?

Mr. CRAWLEY. Now, I didn't come prepared to answer that because I didn't look it up; so I can't give you a definite answer.

I would say normally, over the past year, our business has been increasing. Most radio stations, business has been increasing.

So if these stations that were mentioned in this survey lost money during these months it was as compared to what should have been an increase in business, because this is one recession that people have chosen to advertise more rather than just giving up and playing dead; and they have used radio to advertise during the recession.

Senator FORD. Radio advertisements are on the increase?

Mr. CRAWLEY. Yes, sir.

Our business has been better, so thankfully I didn't lose money, but the amount of revenue I lost due to that, I would think that was a very, very modest figure; very modest.

Senator FORD. Four hundred fifty some odd dollars is a modest figure?

Mr. CRAWLEY. Of revenue that should have been obtained those months; yes, sir.

Senator FORD. I think one of my distinguished colleagues this morning estimated only about a quarter of a million dollars.

Mr. CRAWLEY. But I hasten to point out this affects others besides daytime; for instance, my hometown station is on a local channel which has 1,000 watts after the sun comes up and often 250 before the sun comes up.

Now, their coverage presunrise is impaired, not nearly so much as the man who isn't even on the air, but is impaired because it doesn't cover beyond the county borders; and in a large county, not even to there.

Again, early morning drive time, so-called drive time is imperative for a man who you would think would not be affected by it because he is on the air.

Senator FORD. I'm not asking you to make a positive statement except in areas of which you have knowledge, and that knowledge is of your four radio stations.

To your knowledge, none of those stations were asked if they had lost revenue; none of those four stations were surveyed by FCC or the DOT to try to find out if you had made money or lost money?

Mr. CRAWLEY. If they did, my manager didn't tell me, and he should have, because I never heard of it, no, sir; I did not receive any such question.

Senator FORD. It is also a fact that your best time for securing advertisement for the four stations is in the a.m. rather than the p.m., so the extension of the broadcast time into the evening daylight hours does not help?

Mr. CRAWLEY. It is not an even trade off by any means, no, sir.

Senator FORD. What community services do you perform?

Just give me some indication of what you do that is helpful in the morning.

What community services do you perform that you are not being paid for?

Mr. CRAWLEY. Well, of course this isn't paid for, but even services that are paid for are nevertheless our services.

News, for instance, of the local situation and various local news things that need to be covered by newscasters early in the day before that man or lady who may be wanting to hear this before they leave for work.

We give early morning newscasts; give early morning farm broadcasts; we have a weather wire into the station which comes from the weather service out of Louisville, Ky. and Evansville, Ind., that comes in where we tell whether today is a good day for curing soybeans or whatever.

Senator FORD. In other words, rural communities are somewhat dependent on advice from the broadcasted information you received from recognized services?

Mr. CRAWLEY. I think if you will check with what we call the local county agents, an extension from the University of Kentucky, you would find that farm people rely more and more on the immediacy of information they get from local radio stations.

Senator FORD. Let me ask you another question; let's take the Shelbyville station.

Mr. CRAWLEY. All right.

Senator FORD. Do you serve an area where many commute away from the immediate vicinity to work?

Mr. CRAWLEY. We have been referred to at times as the bedroom of Louisville; so that explains it, yes.

Senator FORD. You mean many people—

Mr. CRAWLEY. Well, that happens from as far away as 75 to 90 miles from the hometown, which is 85 miles from Louisville.

Senator FORD. So they would be depending on you at 75 or 80-mile distance from Louisville to tell them maybe what is going on in Louisville, that is, the tornado last year?

Mr. CRAWLEY. Yes.

Senator FORD. Problems that they might run into such as accidents on the turnpike, et cetera?

Mr. CRAWLEY. They listen for information.

Senator FORD. Then with daylight saving time, they are already on their way to work.

Mr. CRAWLEY. They would be on their way to work, yes; or in the case of the station that has reduced power prior to sunrise, they wouldn't hear you for 7 miles out of town, see.

Senator FORD. Thank you.

I think you made some good points.

I am grateful to you for coming and you've made an excellent witness.

Thank you very much.

Our last witness is Darrel Stearns, Federal legislative representative, city of Los Angeles.

We do appreciate your coming and do appreciate your patience. You may proceed.

#### STATEMENT OF DARREL STEARNS, FEDERAL LEGISLATIVE REPRESENTATIVE, CITY OF LOS ANGELES

Mr. STEARNS. Thank you, Mr. Chairman.

We do appreciate this opportunity. We want to make known our strong support of "advance time" during the period of February through October.

The city council in Los Angeles yesterday rushed through an emergency approval of this position. We hadn't learned of your hearing until just recently and our own hearings were not scheduled for 2 weeks. The council felt it important to take this action and approved it unanimously yesterday.

I might point out that the city council in Los Angeles consists of 15 members, all of whom work as full-time representatives in separate districts. They meet every day and they represent the constituents of their district very closely; I think their approval represented the approval of the people in Los Angeles.

I would like to call to your attention the testimony which we presented before this committee in November 1973, during the height of the first general awareness of this particular energy crisis. At that time, I entered a council resolution, and read a statement from Mayor Bradley supporting "advance time" on a year-round basis.

Mr. Chairman, Mayor Bradley's statement is in the record for your reference, citing the overwhelming support of the people of Los Angeles and the support of a number of other mayors from the southern California area.

We have a problem in the southern California area worth mentioning here—the fact that we are very heavily dependent on high grade sulfur-free fuel because of Federal air pollution requirements. That—air pollution—relates to this issue.

I was accompanied before by Mr. Carl Tamaki of the Department of Water and Power. We have the largest municipally owned public power system in the country. Mr. Tamaki cited the support of the Los Angeles area media for "advance time," and spoke of the fuel savings it would provide and the support of the private utilities—Southern California, Edison and the San Diego Gas and Electric Co.

One of the reasons in southern California that the people support "advance time" is the fact that you have an outdoor climate and there's much more opportunity for recreation, particularly by children after school in the afternoon.

You will recall also that we appeared with Mr. Patton of the Economic Development Department of the city of New York and, reading back through his testimony, he noted the considerable economical benefits to the Nation through the effect on work productivity, and the extra time overlap provided on the east coast with Europe.

I'm of the opinion from working with most of the larger urban areas around the country—that is associating with them—that generally they are favorable to "advance time" also.

I think they have many other concerns that are taking a priority on their time perhaps or they would have been here. I'm not aware of any great opposition in the large urban areas of the country where a substantial part of the population of the country does reside.

I might point out that in 1948 when local areas could set their own times, the State of California did go on its own time and did advance time an extra hour.

That's all that I wish to bring to you at this time our strong support of this; and how it relates to our energy problems in southern California.

Senator FORD. Mr. Stearns, I have a couple of brief questions here.

Explain to me, again; you touched on it in your brief remarks, why is daylight saving time so popular in Los Angeles and other large urban areas?

Mr. STEARNS. Well some of the reasons are that in some of the urban areas, as touched on here today, it is perhaps their location within the time zones.

In Los Angeles, I think we have additional reasons—the whole of southern California—the fact that we do have this outdoor type climate and I think that puts heavier demands on recreation and so forth. An extra hour in the evening is very desirable to people of Los Angeles. I can't speak to all regions, but I'm sure that has something to do with it.

Senator FORD. Does your farming community endorse year-round daylight saving time, also?

Mr. STEARNS. Farming community? You mean in Los Angeles?

Senator FORD. You're representing Los Angeles; can you give comments as to the farm community in California?

Mr. STEARNS. I can't cite anything in particular; I did cite the instance of the entire State going on "advance time" (in 1948) through the action of the Governor.

I'm sure he didn't take that action without a thought to the rural areas.

Some of the letters Mayor Bradley presented last year in testimony came from areas as far as Mono County east of the Sierras.

I don't think that, of course, necessarily speaks for all these people from those areas.

Senator FORD. You want to relate, too, what you said to other urban areas. You work with them and you all seem to be in favor of year-round daylight saving time.

Mr. STEARNS. I rather think that if this were the substantial issue that it appeared to be to some of the people testifying against it here today, that both the U.S. Conference of Mayors and National League of Cities would have very strong positions against this issue.

I would think that, certainly Senator Stevenson must know the feelings of the city of Chicago. I think they are very favorable to it.

Senator FORD. You mean the city of Chicago was for a full 12 months daylight saving time?

Mr. STEARNS. To my knowledge, the city of Chicago, during that same period when local areas could go on daylight saving time, elected then to go on it.

Senator FORD. But not for 12 months, continuously.

Mr. STEARNS. I can't speak for sure.

Senator FORD. Well, we're talking about year-round; that's what I was referring to.

Chicago is the distribution center for the Midwest, and I think the time problem would be considerable as far as their distribution point compared to Los Angeles or other major metropolitan areas.

Mr. STEARNS. Well, at the moment, we are supporting the 8-4 system although we did testify last year in favor of the year-round.

Senator FORD. Well, let's get that clear, because you are speaking in favor of year-round.

Mr. STEARNS. Well, at the moment, we are supporting the 8-4 system although we did testify last year in favor of the year-round.

Senator FORD. Is it your impression that the public opinion survey figure cited in the DOT study accurately reflects the views of the people on the west coast?

Mr. STEARNS. I can't speak to that.

I just caught that report yesterday and have consulted no one on the west coast about that.

If I get some information about that, I'd be happy to submit it for the record, but the testimony certainly that Mr. Tamaki gave last year here in person, and that Mayor Bradley sent in, indicated there was very strong support in the southern California area.

It would seem to me that in the Los Angeles area it might have been even greater than was reported in the DOT study. The figures I saw in the DOT report were for just the West. I don't know if it was broken down for the Los Angeles area specifically.

Senator FORD. You indicated that your generating facilities were the largest owned municipal facilities in the country. How about fuel? Do you secure that from your Western States?

Mr. STEARNS. At the time of the first beginnings of this crisis, we were tied to a contract in the Middle East and we were put in very—

Senator FORD. When you say Middle East, what are you referring to?

Mr. STEARNS. Pardon me.

One of the Arabian countries.

Senator FORD. Coming from Arabia?

Mr. STEARNS. At that time, coming exclusively from that area. We were in very dire straits. The city adopted both a voluntary and a mandatory energy savings program.

There were penalties provided if there weren't savings.

I believe, if I recall correctly, that they never had to use the penalties, because the people in the city wholeheartedly supported this and there was a substantial reduction.

The city was prepared at that time to have rotating blackouts in various parts of the city to reduce fuel needs.

Senator FORD. One last question. You may not be in a position to answer this. What is the generating capacity needed per capita in Los Angeles compared to Chicago?

Mr. STEARNS. I couldn't answer that.

I could get it for the record, if you like.

Senator FORD. I would like to have that, because I think that it might reflect a great deal about your support for the longer daylight saving time period.

Mr. STEARNS. Generating capacity?

Senator FORD. Per capita; you know, the need for electrical current in Chicago per capita as compared to Los Angeles.

I think daylight saving time is a factor in the geographical location of a community. That might reflect that Chicago wouldn't benefit from additional daylight saving time.

I'd like to have that relationship, if you could get it.

Mr. STEARNS. Certainly.

[The following information was subsequently received for the record:]

We are advised by the Department of Water and Power that the rate is 2.05 kilowatts per capita of installed capacity in Los Angeles. The Department of Water and Power feels that a comparison cannot be made with Chicago on a comparable basis because the comparable utility in Chicago corresponds to a much broader area than just the city.

Senator FORD. Thank you and I appreciate your courtesy and patience.

Thank you for coming.

This concludes our hearings today. We will adjourn subject to the call of the Chair.

[Whereupon, at 3:54, the hearing was adjourned, subject to the call of the Chair.]

Senator F. M. [unclear] One last question. You may not be in a position to answer this. But is the governing capacity needed per capita in Los Angeles compared to Chicago?

Mr. [unclear]: I couldn't answer that. I could get it for the record if you like.

Senator F. M. [unclear] I would like to have that because I think that it might reflect a great deal about your support for the longer daylight for this period.

Mr. [unclear]: I would like to have that for the record. I would like to have that for the record. I would like to have that for the record.

I think daylight saving time is a factor in the geographical location of a community. That might reflect that Chicago would benefit from additional daylight saving time.

I'd like to have that relationship if you could get it. Mr. [unclear]: Certainly.

The following information was subsequently received for the record:

It was noted by the Department of Water and Power that the rate of 207 applies per capita in the city of Los Angeles. The Department of Water and Power feels that a comparison cannot be made with Chicago on a comparable basis because the corporate utility in Chicago corresponds to a much larger city than Los Angeles.

Senator F. M. [unclear] Thank you and I appreciate your courtesy and

Thank you for coming.

This concludes our hearings today. We will adjourn subject to the call of the Chair.

[Whereupon, at 3:54, the hearing was adjourned, subject to the call of the Chair.]

## ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF HON. JOHN C. STENNIS, U.S. SENATOR FROM MISSISSIPPI

Mr. Chairman, I appreciate the opportunity to present a statement on amending the Uniform Time Law.

It is my understanding that the Committee is considering several proposed bills on this subject, and that they vary quite considerably in how to divide the year between standard (or non-standard) time and daylight saving time. They provide from five to nine months of daylight time, and from three to seven months of standard time.

In the event that none of these bills are passed by Congress and signed into law, the provisions of the Uniform Time Act of 1966 will again be in effect, as they were from enactment until December, 1973. There will be six months of daylight time and six of standard time. I advocate this solution.

The Committee will recall, of course, that year-round daylight saving time was prescribed in the "Emergency Daylight Saving Time Energy Conservation Act" which Congress passed in December, 1973, and which became effective on the fourth Sunday thereafter, on January 6, 1974. This legislation was a product of the international oil crisis. It came at a time when the nation faced an energy shortage of unpredictable severity and duration. Any legislative action which held promise of energy savings in any degree, whether demonstrated or only hoped for, was considered a prudent action.

The Act recognized the fact that in return for possible energy savings by the use of winter daylight saving time—and those savings were admittedly speculative—there would be adverse effects on the public. It was prescribed, therefore, that by June 30, 1974, the Secretary of Transportation would submit an interim report on the energy savings and the effects on the public. After the expiration of the Act, on the last Sunday of April, 1975, a final report was to be submitted.

The interim report was submitted, and with respect to energy savings the findings were inconclusive. The effects were so small that they could not reliably be separated from other changes occurring at the time, which included shortages of fuel, speed limit reductions, weekend gasoline station closings, and voluntary public efforts toward energy conservation.

There were acknowledged adverse effects on the safety of school children in the morning hours. An apparent compensating decrease in evening school children accidents may have been the result of decreased traffic instead of later daylight. There were adverse effects on some radio stations, and ambiguous effects on crime rates and traffic safety.

In the interim report there were no clear findings of any beneficial effects of winter daylight savings.

The recommendation of the Secretary of Transportation was that because the data was not conclusive, a compromise should be tried in the winter of 1974-1975, using four months of standard time, from the last Sunday in October to the last Sunday in February with the other eight months to be daylight saving time. In other words, March and April would be daylight time, instead of the standard time prescribed in the 1966 Act.

This was done. Admittedly it was a compromise between the experiment of 1973-1974, which didn't work, and the old system that we know works, and that the public has used for years and to which it is accustomed. The experiment was said to be undertaken to obtain more conclusive data, if possible. I say that now there should be no more experimenting with the public in this regard. Let us go back to what they are used to and accept, six months of daylight time and six of standard, with standard time extending through all of the winter, until April, rather than ending in February.

First of all, and most important, there is legitimate public apprehension about the safety of school children in early morning hours. There is good reason for this. Winter before last the school children had to be up and out at the bus stop long

before dawn, or they had to be walking to school in the dark, crossing streets in traffic when they could not easily be seen from oncoming cars. This simply should not be done to the children. Going to school in winter weather is difficult enough for a young child, without adding the darkness. I think parents agree with this. Many of them would have liked to drive their children to school, to spare them this experience of being out in the night, but with working parents, this interferes with employment hours. Many school districts changed their school hours as a result of winter daylight saving, which disrupts schedules of working parents.

Also winter daylight saving time—and March is still winter in most parts of the United States—causes other problems in schools. The heat and lights have to be turned on earlier, using more energy. In the winter the daylight hours saved for leisure after school are spent indoors for the most part, out of the cold, using more heat and electricity.

Farmers have a problem because they need daylight hours for their morning work. Also, I believe it is well substantiated that the trend is toward farm residents on small family farms holding full or part-time jobs elsewhere, and having to do the farm work before and after their regular employment.

The Secretary of Commerce says the construction industry engaged in outdoor construction suffers adverse effects from the time change in winter weather. The Department of Justice says there is no reduction in crime rates. The Federal Communications Commission acknowledges the difficulties caused some radio stations.

Mr. Chairman, there is no reason to continue to experiment with limiting standard time to three months a year, or four months, when we know that six months of standard time and six months of daylight saving time, as set forth in the 1966 Act, is a tested and proven system. I urge very strongly that we return to it, and I commend this solution to the favorable consideration of the Committee.

I appreciate the opportunity to make this statement, and the consideration of the members of the Senate Commerce Committee.

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#### STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association, representing more than 1,400 municipal and other local public power systems in 48 states, Puerto Rico, the Virgin Islands, Guam and America Samoa, supports enactment of S. 2566, a bill to provide daylight saving time on an 8-month basis for two additional years to permit further analysis by the Department of Transportation on energy conservation and other aspects of daylight saving time.

Because of the energy supply problems facing the country, APPA is extremely interested in methods to conserve energy, including daylight saving time. APPA has been promoting the concept of energy conservation for some time. For example, the association provides brochures, radio spots and newspaper ads, and a bulletin called, "Energy Conservation Information" to our member utilities to use at the local level.

In November of 1973, APPA submitted testimony before the House Committee on Interstate and Foreign Commerce, and the Senate Commerce Committee on the effects of daylight saving time on energy conservation. Through an informal survey of some member utilities, APPA estimated a savings "within the range of 1% to 2% in kilowatt-hour sales, on a year-round basis." APPA also recommended that an appropriate Government agency should monitor and make a detailed study of the result of daylight saving time on energy savings.

Following the OPEC oil embargo, the Emergency Daylight Saving Time Energy Conservation Act was passed by Congress in December 1973. The purpose of the law was to provide a two year trial period to study the impact of year-round daylight saving time. In October of 1974, responding to negative public reaction to dark mornings for school children, Congress amended the law to provide 8 months of daylight saving time beginning with the last Sunday in February and ending with the last Sunday in October. This law expired last April and the country returned to standard time at the end of October. Unless Congress acts, the country will continue for 6 months on standard time until the last Sunday in April.

The Department of Transportation in July issued its report on the consequences of the 8 months of daylight saving time and recommended an additional two year experiment to further analyze its effect. The report recommended:

"In view of the evidence suggesting favorable impact of an 8-month DST system, we recommend using an 8-month system for two more years to permit further analysis and more effective measurement of public acceptance and response."

The report noted an approximate electric savings of 1% or 49,200 megawatts per day for March and April, but no evidence of significant peak shaving. The report stated:

"There are indications of an approximate 1% reduction in aggregate electrical load related to DST . . . The evidence is thus very strong that electricity savings are associated with DST at winter, spring and fall transitions. Furthermore, as stated in the interim report, even larger savings due to DST would be expected in the summer for the light sensitive portion of the load because of the reduced demand for electric lights in both the morning and the evening."

The savings estimated for electrical usage by DOT for the publicly-owned segment of the industry would be substantial. These electric utilities sold about 213 billion kilowatt-hours to ultimate consumers in 1973 according to Federal Power Commission statistics. Thus a 1% saving would have reduced demand by 2 billion kilowatt-hours. If all the energy generated were from oil fired facilities, public power systems would save the equivalent of 3.8 million barrels of oil annually.

These figures are based on consumption of energy by the ultimate user. However, there are losses of about 10% to 14% of energy between the point of generation of electricity and the end user. If such losses are taken into account, it would appear that our segment of the industry could save the equivalent of 4.2 million barrels of oil annually through daylight saving time.

The local publicly owned segment of the electric industry accounts for only 10% of the nation's electricity sold to more than 30 million people. Comparable savings achieved by the privately owned companies and rural electric cooperatives would substantially add to the amount of energy conserved through daylight saving time.

April and March are the two additional months of daylight saving time called for in the 8-month extension. These months have the same number of daylight hours as September and October, two months that have traditionally been under daylight saving time. Therefore, having March and April under daylight saving time would serve the public interest while not disrupting current life-styles. Furthermore, any steps taken to reduce lighting demand would have a significant impact on electricity demand. The Office of Research and Monitoring of the Environmental Protection Agency has estimated that lighting—much of it commercial—represents 24% of the total demand for electricity. The 8-month extension also has an added advantage in reminding consumers of the need for energy conservation.

An area that which needs additional study is the impact of daylight saving time on electric heating. Many of APPA's member utilities serve consumers where there is a significant amount of electric heating. The energy savings from daylight saving achieved in reduced lighting requirements might be partially offset by increased heating demand. This is an area DOT could further study if daylight saving time is extended.

In conclusion, art of the national program for dealing with the energy problem is energy conservation. Almost every agency in the Government has an office dealing with the subject. Certainly, the 8-month daylight saving time extension for 2 years and accompanying study complements the total national policy of energy conservation.

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#### STATEMENT OF THE NATIONAL ASSOCIATION OF BROADCASTERS

The National Association of Broadcasters is a non-profit incorporated association of radio and television broadcast stations and networks. As of November 1, 1975, the NAB membership list included 2,475 AM radio stations, 1,701 FM radio stations, 5 radio networks, 541 television stations and 3 television networks. Among the radio stations represented by the NAB are broadcasters affected by the legislation now under consideration.

There are approximately 2,270 radio stations licensed to operate during daytime hours only, with the majority of these stations assigned to 41 regional or Class III channels which they share with a limited number of full time (24 hours a day) stations. It is estimated that on each of these channels there are approximately 50 daytime operations and 16 full time stations. This is possible because of the physical qualities of the broadcast spectrum which allow much greater range during darkness than during daylight hours. Hence, more broadcast stations can be operated in daylight hours with little or no interference to other

full time broadcasters while the same operations at night would impair signal quality of the same full time broadcasters.

In addition to these signals, a number of daytimers are assigned to clear channels which have a dominant broadcast signal protected at night to assure full service to areas unserved by any other signal.

All of the daytime stations have a sign on and sign off time which generally reflects the actual time of sunup and sundown, although in some situations certain AM stations are granted specific presunrise authorizations (PSA's) under reciprocal agreements negotiated with Canada and Mexico in recent years. PSA's have been allocated to over 1,600 daytime stations, usually for a 6 a.m. sign on with 500 watts of power.

Under the present law, which calls for six months of daylight saving time and six of standard time, virtually all daytime stations find it possible to operate with a minimum of disruption and they are able to provide full service to the communities where they are located. As the number of months of daylight time increase, so do the problems of those broadcasters in localities where it is not possible to secure PSA's because of interference with clear channel or full time stations. There are approximately 370 stations which are not eligible under present law for presunrise operations. Many of these stations must compete with daytimers holding PSA's and find the imbalance created markedly more serious as the months of daylight time increase beyond the normal six each year.

The plight of these stations prompts the National Association of Broadcasters to urge this Committee to continue the present six and six scheme of standard and advanced time. In most communities the local radio station is a vital part of the community and an indispensable participant in the dissemination of information about local conditions such as the weather, which have such substantial impact on people and their environment.

For most of the year, the people in each community can expect to turn to their local station, early each morning, to find out whether school buses are running or snows are too deep. They can determine if flooding is possible in a certain area, or whether it will be a good day to harvest wheat or break ground for a construction project. However, this service would not be available in many communities should daylight savings time be extended to the point where service would not begin until well after the time in the morning when people need basic weather information to make decisions affecting their children, homes, and businesses. It is our position that this loss of basic service to the community is not offset by the very small savings of energy expected by adjusted daylight hours.

Stations so affected by daylight savings time would also be likely to lose substantial revenue because of a late sign-on hour. Most stations find that so-called drive time, that time each day when people are likely to be in their cars listening to their radios, is the most valuable time available for advertisers. When an hour of this time is lost, broadcasters find a substantial impact on revenue even though an additional hour is gained in the afternoon. For many small broadcasters, such a loss of revenue may well be the difference between profit and loss on the bottom line.

The NAB would urge the Senate Commerce Committee to reject S. 2566 and S. 2567 for the above reasons. However, should the Committee decide to enlarge daylight time, the NAB would urge the Committee to grant to the FCC the authority to make adjustments in operating hours where such adjustments can be made without undue interference to other broadcast operations. Section 5 of S. 2566 would grant this authority and we would urge the Committee to include the Section in the bill if legislation is deemed necessary.

We appreciate the opportunity to submit these views on this subject.

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#### STATEMENT OF LOUISVILLE AREA CHAMBER OF COMMERCE

The Louisville Area Chamber of Commerce is grateful for the opportunity to present this testimony before the Senate Commerce Committee regarding the proposal to change the observance of Daylight Saving Time to the period between the first Sunday in May and the last Sunday in September.

The Chamber membership consisting of approximately 2500 businessmen in the Louisville, Kentucky, area has from time to time been surveyed with respect to their desires and preferences with regard to the observance of Daylight Saving Time. The vast majority of the business community has consistently

demonstrated their preference for observance of Daylight Saving Time from the last Sunday in April until the last Sunday in October. The Chamber members also have always emphasized the importance of uniformity of time observance in this area with other eastern and southeastern states in the Eastern Time Zone.

The Louisville Area Chamber of Commerce urges retention of the same periods of observance of Daylight Saving Time as is now practiced, namely from the last Sunday in April until the last Sunday in October. Retaining the current observance will result not only in energy conservation during the summer months, but also in lessening the confusion that is associated with the whole issue of observance of Daylight Saving Time. The people have become accustomed to the current pattern of Daylight Saving Time observance and we urge that the Committee give full consideration to retention of this pattern. To do otherwise would result in confusion that would not be sufficiently offset by any advantages.

Changing the beginning date for observing Daylight Saving Time to the first Sunday in May could have an adverse effect on this metropolitan area, because of the nationally televised Kentucky Derby on the first Saturday in May. The Kentucky Derby is now planned to run and be televised on Daylight Saving Time. If changed to Standard Time many adjustments would have to be made.

AIR TRANSPORT ASSOCIATION OF AMERICA,  
Washington, D.C., November 5, 1975.

HON. WARREN MAGNUSON,  
Chairman, Committee on Commerce, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: In view of the Committee's November 13 hearing on Daylight Saving Time, the Air Transport Association, representing virtually all of the U.S. scheduled airlines, would like to comment on the situation for the record.

The principal concerns of the aviation industry in the change of time systems are (1) uniformity and (2) sufficient advance notice of changes to permit the airlines to properly plan, print and distribute their flight schedules.

We do not take a position on a specific time formula. Based on experience to date, time changes have little or no impact on efficient utilization of airline manpower and facilities.

However, with reference to advance notice, it is essential that sufficient lead time be provided prior to implementation of new times in order to assure that published airline schedules will reflect correct departure and arrival times and avoid passenger confusion and delay. We suggest a minimum of 60 days advance notice.

We would appreciate your consideration of our request.

Sincerely yours,

LEO SEYBOLD,  
Vice-President, Federal Affairs.

NORTHWEST OHIO EDUCATIONAL TELEVISION FOUNDATION,  
Bowling Green, Ohio, November 19, 1975.

HON. WARREN G. MAGNUSON,  
The Commerce Committee, U.S. Senate, Dirksen Office Building,  
Washington, D.C.

DEAR SENATOR MAGNUSON: I am writing in regard to S. 980, S. 2566 and S. 2567. Would you please include the following written testimony as part of the official record of the public hearing on these bills held by your committee on November 13, 1975. As Administrator-Coordinator in the Ft. Wayne, Indiana area for the Northwest Ohio Educational Television Foundation, I would like to speak on behalf of the Indiana schools using instructional television, and the NWOETV Foundation.

#### BACKGROUND

For several years many schools in Indiana (11 counties) near Oxford, Ohio, have been using instructional television programs being supplied by Ohio Educational Broadcasting over WMUB-TV (see appendix A). Recently, Indiana

schools (portions of six counties) around Ft. Wayne, Indiana, have been added to those schools using OEB instructional television programs (see appendix B).

The Ohio broadcasters have not sought to enroll Indiana schools. Rather, Indiana educators, seeing the quality of the programming, have asked to participate with the Ohio schools. The State of Indiana does not make such programming available in our broadcast area, and the cost to individual schools to rent, lease, or buy these programs would be prohibitive.

#### THE PROBLEM

During portions of the school broadcast year, September through May, Ohio time is one hour ahead of Indiana. During these months some programs are broadcast before our schools are open for the day. Some are also lost when they occur during our school lunch periods. Teachers miss in-service training programs because they are broadcast too early or are being aired before our schools are dismissed. Worst of all is the fact that it is virtually impossible to construct a school schedule that can shift to accommodate the *change in time* that occurs during the school year. There are far too many variables. Thus, schools in Indiana build schedules around those weeks of the broadcast schedule when both States are on the same time, that is, when Ohio changes from DST to EST.

Due to the current Uniform Time Law, Ohio educational broadcast schedules do not coincide with Indiana school hours for four weeks in the Fall and three weeks in the Spring. Since the broadcast schedule totals thirty-two weeks, most educators will tolerate the inconvenience and loss for those seven weeks.

#### COMPOUNDING THE PROBLEM

S. 2566 and S. 2567, with their provisions for extending the period of daylight savings, would produce seventeen and twenty-two weeks respectively of out-of-phase times. With either bill, fewer than half of the available broadcasts would occur when the time zones are coincident. A prolonged time difference would be detrimental to instructional television programs. This fact was confirmed last Spring by the majority of teachers using these programs. Ohio, as well as most of the rest of the country, switched to DST at the end of February rather than in April as had been expected. As a result our schools were hesitant about using ITV for the 1975-76 school year until they were assured that the change would occur in April.

We gave them such assurance based upon information supplied by Mr. Ben Gaeth, State Senator in Ohio. If S. 2566 or S. 2567 become law, through no fault of the Foundation, we will not be able to live up to those statements regarding the time change.

#### HARDSHIPS

If S. 2566 or S. 2567 became law, I would expect:

A loss of an excellent supplementary resource in the education of Indiana students.

Loss of some of this school year's programming by Indiana schools *already under contract* with the NWOETV Foundation.

Loss of prospective members who are in the process of evaluating our services.

Loss of investments by schools in television sets, antennae, distribution systems, time and effort.

Another disappointment in instructional television for educators will not make the task of ITV development in Indiana any easier.

#### SOLUTIONS

S. 980 would result in *only four weeks* of difference in time between Ohio and Indiana. This solution would be *best* for us.

The current Uniform Law, providing 7 weeks out-of-phase, is acceptable. This would be our second choice.

An exemption for those areas to share time zones with Ohio has not been popular in the past. It would be an unlikely solution.

Schools could video tape programs for replay at their convenience, but this is very costly and time consuming.

Changing the Ohio broadcast schedule would be impossible.

Broadcasting a different schedule over the translator in Ft. Wayne, would only solve the problem for this immediate area and would do nothing for those

in east-central Indiana being served by WOUB-TV. In addition, W39AA cannot by law initiate programming.

## SUMMARY

Passage of S. 980 would help us. Not changing the current form of the Uniform Time Act would be acceptable. S. 2566 and S. 2567 would be detrimental.

In closing let me say that I can appreciate the reason for the Department of Transportation to want more time to gather data so that they can assess the effects of a longer DST system. However, I do not feel that "... *modest* overall benefits *might* be realized..."\* is adequate reason for disrupting sound, already established educational activities.

Sincerely,

ALAN H. KENT,  
Administrator-Coordinator Ft. Wayne Area, Northwest-Ohio  
ETV Foundation.

Attachment.

## APPENDIX A

The State of Ohio, through several public television stations scattered around the state, provides for all its elementary and secondary schools some of the finest instructional television programs available. These programs begin in September, conclude in May, and are broadcast during the school day. Because some of the Ohio public television stations carry over into Indiana, it is possible for some Indiana schools to receive these in-school broadcasts. Further, the Ohio Educational Broadcasting Network Commission has agreed to serve these schools provided that, for the services received, they would pay a fee sufficient to bear the entire cost of those services rendered unto them. This guarantees that Ohio taxes are not supporting Indiana schools.

## APPENDIX B

On January 11, 1975, television translator station W39AA, licensed to Ft. Wayne Public Television, Inc., was placed on the air. This station translates public television station, WBGU, Bowling Green, Ohio, to the Ft. Wayne, Indiana area. Since WBGU-TV broadcasts OEB instructional television programs, the schools in the Ft. Wayne area are able to receive the same. As in the case involving WOUB-TV and adjacent Indiana area schools, the Ft. Wayne schools are permitted to use the broadcasts (see appendix A).

TRANSPORTATION ASSOCIATION OF AMERICA,  
Washington, D.C., December 1, 1975.

HON. WARREN G. MAGNUSON,  
Chairman, Committee on Commerce, U.S. Senate,  
Washington, D.C.

DEAR MR. CHAIRMAN: I understand that your Committee is currently giving consideration to S. 980, S. 2566 and S. 2567, bills which would amend the uniform time law relative to conversion to daylight saving time. This legislation is of some interest to the members of the Transportation Association of America.

The Transportation Association of America (TAA) is a national nonprofit organization whose membership consists not only of carriers of all modes of transportation (air, motor, rail, water, pipeline and freight forwarder), but also users of the services of those carriers and investors in the transportation industry. The purpose of TAA is to serve as a forum wherein the diverse views of these several interests may be reconciled on issues of major transportation importance for the good of the industry as a whole. A list of the Board of Directors is enclosed for your information.

For some years TAA's policy, with the concurrence of all of the various membership groups identified above, has been that "there should be uniformity in time, whether standard or daylight, and uniformity in the dates of time changes within each time zone." Our concern is that any legislation which may be enacted in this area not disturb the standard of uniformity promulgated in P.L. 89-387 (1966), and reconfirmed by P.L. 93-182 (1973) and P.L. 93-435 (1974).

\*Taken from the first report on 8-month DST by the DOT, July 1975.

As you know, uniformity in time is of considerable importance to the transportation industry. Time changes significantly affect transportation efficiency in such areas as scheduling, labor relations (due to overtime standards and work schedules) and other aspects of carrier operations. The principle of time uniformity, first adopted by the Congress nine years ago, has greatly eased the transportation industry's burdens in this regard, and we believe no good cause exists today for any change which would permit retrogression to a diversity of standard/daylight time changes such as existed prior to enactment of P.L. 89-387.

We therefore urge that your Committee, in its consideration of this legislation, ensure that time uniformity is retained as a national policy.

I would like to request that this letter be made part of the official record in connection with your Committee's hearings.

Sincerely,

PAUL J. TIERNEY.

[The following information was referred to on p. 18.]

Attachment A contains results of the 1974 national survey of public opinion regarding year-round daylight saving time conducted under sponsorship of the Department of Transportation.

Attachment B contains results of the 1975 national survey of public opinion regarding an 8-month system of daylight saving time under sponsorship of the Federal Energy Administration.

#### ATTACHMENT A

##### 1.1.4 NORC QUESTIONNAIRE AND SAMPLE SIZES

Dates: August 31-Sept. 27; Sept. 28-Oct. 25; Oct. 26-Nov. 22.

Some people think we should have Daylight Saving Time all year around, that is, not turning the clocks back an hour at the end of October. Would you approve or disapprove of remaining on Daylight Saving Time all year round, or don't you care one way or the other?

Approve (Ask A)-----	3
Don't care-----	2
Disapprove (Ask A)-----	1
Don't know-----	4

#### IF APPROVE OR DISAPPROVE, ASK:

A. How strongly do you feel about it? Do you (dis)approve very strongly, pretty strongly, or not too strongly?

Very strongly-----	3
Pretty strongly-----	2
Not too strongly-----	1

Dates: March 29-April 11.

As you know, the United States Congress put our country back onto Daylight Saving Time this winter as part of a two-year experiment to try to save energy. Some people think that we should continue to have Daylight Saving Time all year round, that is, not turn the clocks back at the end of next October. Would you approve or disapprove of remaining on Daylight Saving Time all year round next year, or don't you care one way or the other?

Approve (Ask A)-----	3
Disapprove (Ask A & B)-----	1
Don't care-----	2
Don't know-----	4

A. IF APPROVE OR DISAPPROVE (CODES 3 OR 1): How strongly do you feel about it? Do you (dis)approve very strongly, pretty strongly, or not too strongly?

Very strongly-----	3
Pretty strongly-----	2
Not too strongly-----	1

B. IF DISAPPROVE (CODE 1): What months would you prefer *not* to be on Daylight Saving Time? CODE ALL THAT APPLY. PROBE IF YOU HAVE TO IN ORDER TO GET EXACT MONTHS R DOES *NOT* WANT DAYLIGHT SAVINGS TIME.

No Daylight Saving Time ever-----	00
January-----	01
February-----	02
March-----	03
April-----	04
May-----	05
June-----	06
July-----	07
August-----	08
September-----	09
October-----	10
November-----	11
December-----	12
Daylight Saving Time all the time-----	13

Dates: Nov. 23-Dec. 20.

As you know, we recently switched from Daylight Saving Time to Standard Time. That means that it now gets light an hour earlier in the morning than before we switched over. It also means that it now gets dark an hour earlier in the evening than before we switched over. Would you prefer to be on Daylight Saving Time all year around instead of just being on it for part of the year?

Yes-----	1
No-----	2

Dates: Feb. 1-Feb. 28; March 15-April 11.

As you know, we recently switched from Standard Time to Daylight Saving Time. That means that it now gets light an hour later in the morning than before we switched over. It also means that it now gets dark an hour later in the evening than before we switched over. How do you feel about being on Daylight Saving Time now? Would you say that you like it very much, like it somewhat, dislike it somewhat, or dislike it very much?

Like it very much-----	5
Like it somewhat-----	4
Dislike it somewhat-----	2
Dislike it very much-----	1
(IF VOLUNTEERED :) Don't care-----	3

Dates: March 29-April 11.

Last December—that is, December, 1973—before we went back onto Daylight Saving Time—were you in favor of or against going back onto Daylight Saving Time for the remaining winter months?

In favor-----	3
Against-----	1
Didn't care-----	2
Don't remember-----	4

What caused you to change your mind about Daylight Saving Time? RECORD RESPONSE VERBATIM AND CODE ALL THAT APPLY.

Don't think it saved energy after all-----	01
Children have to go to school in the dark-----	02
I get up in the dark-----	03
[I/family member(s)] feel less safe on the streets in the morning-----	04
Causes a delay in time when I could start my work in the morning-----	05
Hurts my business-----	06
Makes travel harder in the morning-----	07
Mixes up my schedule-----	08
Religious reasons-----	09
Hurts my performance on the job-----	10
Changes the hours schools are open-----	11
Other (Specify)-----	12
Don't know, just don't like it-----	13
Office use-----	14

Dates: August 31–Sept. 27; Sept. 28–Oct. 25; Oct. 26–Nov. 22.

Most changes have some things that people like about them and some things people don't like about them.

If we had Daylight Saving Time all year round, in what ways would you like it? RECORD VERBATIM AND CODE AS MANY AS APPLY.

Would make travel easier in the evening.....	01
Would improve my ability to perform work activities.....	02
Would help my business.....	03
I would have more useful free time with family.....	04
Would permit extra social and recreational activity.....	05
[I/family member(s)] would feel safer on streets in evening.....	06
Would prevent having to change the clocks twice a year.....	07
Would save on (fuel/lighting/energy).....	08
I would have light when I need it.....	09
Other (Specify).....	10
I would not like it in any way.....	11

Dates: March 29–April 11.

Most changes have some things that people like about them and some things people don't like about them.

Now that we have Daylight Saving Time all year round, in what ways do you like it? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO R.

Makes travel easier in the evening.....	01
Improves my ability to perform work activities.....	02
Helps my business.....	03
I have more useful free time with family.....	04
Permits extra social and recreational activity.....	05
[I/family member(s)] feel safer on streets in the evening.....	06
Prevents having to change clocks twice a year.....	07
Saves on (fuel/lighting/energy).....	08
I have light when I need it.....	09
Increases the amount of time for outdoor play for children.....	12
Changes the hours schools are open.....	13
Other (Specify).....	10
I do not like it in any way.....	11
Office use.....	14

Dates: August 31–Sept. 27; Sept. 28–Oct. 25; Oct. 26–Nov. 22.

If we had Daylight Saving Time all year around, in what ways would you not like it? RECORD VERBATIM AND CODE AS MANY AS APPLY.

Children would have to go to school in the dark.....	01
I would be getting up in the dark.....	02
[I/family member(s)] would feel less safe on the streets in the morning.....	03
Would cause a delay in the time when I could start my work in the morning.....	04
Would hurt my business.....	05
Would make travel harder in the morning.....	06
Would mix up my schedule.....	07
Religious reasons.....	08
Other (Specify).....	09
There is nothing I wouldn't like about it.....	10

Dates: March 29–April 11.

Now that we have Daylight Saving Time all year round, in what ways do you not like it? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENTS.

Children have to go to school in the dark.....	01
I get up in the dark.....	02
[I/family member(s)] feel less safe on the streets in the morning.....	03
Causes a delay in time when I could start work in the morning.....	04
Hurts my business.....	05
Makes travel harder in the morning.....	06
Mixes up my schedule.....	07

Religious reasons.....	08
Hurts my performance on the job.....	11
Changes the hours schools are open.....	12
Other (specify).....	09
There is nothing I do not like about it.....	10
Office use.....	13

Dates : August 31–Sept. 27 ; Sept. 28–Oct. 25 ; Oct. 26–Nov. 22.

What about the country as a whole? In what ways do you think life in this country might be helped if we had Daylight Saving Time all year round? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENTS.

Would improve highway safety, less accidents.....	1
Would save (electricity/energy).....	2
Would improve business.....	3
Would make trips from work faster and easier.....	4
Would improve social and recreational activities.....	5
Would have light when we need it.....	6
Other (specify).....	7
Would not help life in this country at all.....	8

Dates : March 29–April 11.

What about the country as a whole? In what ways do you think life in this country is helped by having Daylight Saving Time all year round? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ CATEGORIES TO RESPONDENTS.

Saves electricity.....	09
Saves gasoline.....	10
Saves heating fuel.....	11
Saves (energy/fuel) (unspecified as to type of energy or fuel).....	12
Improves highway safety, less accidents.....	01
Improves business.....	03
Makes trips from work faster and easier.....	04
Increases opportunities for social and recreational activities.....	05
I/We have lights when we need it.....	06
Increases the amount of time for outdoor play for children.....	13
Changes the hours schools are open.....	14
Reduces crime.....	15
Other (specify).....	07
Does not help life in this country at all.....	08
Office use.....	16

Dates : August 31–Sept. 27 ; Sept. 28–Oct. 25 ; Oct. 26–Nov. 22.

In what ways do you think going onto Daylight Saving Time all year round might not be good for life in this country? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENTS.

Would hurt farmers.....	01
Would be bad for people who have to get up early.....	02
Children would have to go to school in the dark.....	03
There would be more accidents in the morning.....	04
Would make driving more dangerous in the morning.....	05
Would hurt business.....	06
People would have to change their way of living.....	07
Change is bad (unspecified).....	08
Other (specify).....	09
Would not be bad in any way for life in this country.....	10

Dates : March 29–April 11.

In what ways do you think being on Daylight Saving Time all year round is not good for life in this country? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ CATEGORIES TO RESPONDENTS.

Hurts farmers.....	01
Is bad for people who have to get up early.....	02
Children have to go to school in the dark.....	03
There are more accidents in the morning.....	04

Makes driving more dangerous in the morning-----	05
Hurts business-----	06
People have to change their way of living-----	07
Changes the hours schools are open-----	11
Change is bad (unspecified)-----	08
Other (specify)-----	09
Is not bad in any way for life in this country-----	10
Office use-----	12

Dates: August 31-Sept. 27; Sept. 28-Oct. 25; Oct. 26-Nov. 22; March 29-April 11.

Which is more important to you, to have it get light in the morning when you want, or to have it get dark in the evening when you want?

Light in the morning when I want-----	1
Dark in the evening when I want-----	2

Dates: August 31-Sept. 27; Sept. 28-Oct. 25; Oct. 26-Nov. 22.

A. If you had your choice, what time in the morning would you like it to get light outside during the winter?

Start daylight at (hour)----- (minute)----- A.M.  
   Hour  Minute

B. What time in the evening would you like it to become dark outside during the winter?

Get dark at (hour)-----; (minute)----- P.M.

Dates: August 31-Sept. 27; Sept. 28-Oct. 25; Oct. 26-Nov. 22.

Now I'd like to ask you some questions about your daily schedule on weekdays during the winter months.

During the winter, what time did you usually get up in the morning?

Hour-----: Minute----- AM.

If no regular morning time, check here-----

On weekdays, what time did you usually first leave the house for work or school or another regular activity—or didn't you leave the house on a regular schedule?

Hour-----: Minute----- A.M.

Fill in time: and circle one:

A.M.-----	1
P.M.-----	2
Does not leave house on a regular schedule-----	3

What time did you usually come home from (work/school/other regular activity) or did you come home at different times?

Hour-----: Minute----- AM.

Fill in time: and circle one:

A.M.-----	1
P.M.-----	2
Returns home at different times-----	3

Dates: March 15-April 11.

Since we went back onto Daylight Saving Time, have you been doing anything different in the morning due to the extra hour of darkness?

Yes (Ask A)-----	1
No-----	2

If yes, ask A: A. What have you been doing different in the morning since we went back onto Daylight Saving Time? Record response verbatim and code all that apply. Do not read these categories to respondents.

Been getting up later in the morning/going to work later in the morning--	1
Been using a car rather than public transportation more often-----	2
Been driving the children to school-----	3
Other (Specify)-----	4

Dates: March 15-April 11.

Since we went back onto Daylight Saving Time, have you been doing anything different in the evening due to the extra hour of daylight?

Yes (Ask A & B)-----	1
No-----	2

If yes, ask A & B: A. What have you been doing different in the evening since we went back onto Daylight Saving Time? Record verbatim and code all that apply. Read these categories to respondents.

Been leaving work later.....	1
Been using public transportation more.....	2
Been walking more.....	3
Been doing more (errands/shopping) in the late afternoon.....	4
Been going out more for recreation in the late afternoon.....	5
Other (specify).....	6

B. Would you say that you are now driving more, less, or about the same amount in the late afternoon as you were before we went back onto Daylight Saving Time?

More.....	3
Less.....	1
About the same.....	2
N.A. [R does not (Generally) drive].....	4

Dates: March 29-April 11.

There have been some accidents involving children on their way to school this winter. Some people think that such accidents were caused by the extra hour of darkness in the morning that winter Daylight Savings Time brought. Others think such accidents would have occurred even if we were not on Daylight Saving Time. Which view comes closest to your way of thinking?

Such accidents were caused by the extra hour of darkness in the morning.....	1
Such accidents would have occurred even if we were not on Daylight Savings Time.....	2

Do you think that we should go off Daylight Saving Time next winter because some people have been concerned about the safety of children on their way to school in the morning?

Yes.....	1
No.....	2

As far as you know, have children in *your* community been having any extra problems this winter getting to school safely in the morning?

Yes (ASK A).....	1
No.....	2
If volunteered: Don't know.....	3

A. Do you think these extra problems were because of the additional hours of darkness in the morning?

Yes.....	1
No.....	2

If there are any children under 18 in the household. Ask: During the past January and February, that is, January and February of 1974, (was/were) the (child/children) ever driven to school by car?

Yes (Ask A).....	1
No.....	2
If volunteered: N.A.....	3

A. If yes: About how many times a week did the (child/children) go to school by car during the months of January and February?

Less than once a week.....	0
Once a week.....	1
Twice a week.....	2
Three times a week.....	3
Four times a week.....	4
Five times a week.....	5

Dates: March 29-April 11.

During January and February of *last* winter—that is, during January and February of 1973 (was/were) the (child/children) ever driven to school by car?

Yes (Ask A).....	1
No.....	2
If volunteered: N.A.....	3

A. *If yes*: About how many times a week did the (child/children) go to school by car during the months of January and February *last* winter (1973)?

Less than once a week	0
Once a week	1
Twice a week	2
Three times a week	3
Four times a week	4
Five times a week	5

During the months of January and February of *this* winter (1974), was it dark outside when the (child/children) left for school in the morning?

Yes	1
No	2
If volunteered: N.A.	3

In January and February of this winter, did you ever send the (child/children) to school in a car *because* it was dark in the morning?

Yes	1
No	2

The following items on Daylight Saving Time are included in the Cycle 12 questionnaire which will be administered from May 3, 1974 to May 30, 1974.

Item No.	Appeared in previous cycle number
29	5, 6, 7, 11
30	10, 11
31	11
32 (top part similar to item in 5, 6, 7)	11
33	New
34	11
35	11
36	11
37	5, 6, 7, 11
38	5, 6, 7, 11
39	5, 6, 7, 11
40	5, 6, 7, 11
41	11
42	11
43	11
44	11
45	11
46	11
47	New

29. Which is more important to you, to have it get light in the morning when you want, or to have it get dark in the evening when you want? (260)

Light in the morning when I want	1
Dark in the evening when I want	2

30. As you know, we recently switched from Standard Time to Daylight Saving Time. That means that it now gets light an our later in the morning than before we switched over. It also means that it now gets dark an hour later in the evening than before we switched over. How do you feel about being on Daylight Saving Time now? Would you say that you like it very much, like it somewhat, dislike it somewhat, or dislike it very much? (261)

Like it very much	5
Like it somewhat	4
Dislike it somewhat	2
Dislike it very much	1
(IF VOLUNTEERED:) Don't care	3

31. Since we went back onto Daylight Saving Time, have you been doing anything different in the evening due to the extra hour of daylight? (262)

Yes (Ask A & B)	1
No (Go to Q. 32)	2

IF YES, ASK A & B: A. What have you been doing different in the evening since we went back onto Daylight Saving Time? RECORD VERBATIM AND CODE ALL THAT APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENT. (263)

Been leaving work later.....	1
Been using public transportation more.....	2
Been walking more.....	3
Been doing more (errands/shopping) in the late afternoon.....	4
Been going <i>out of doors</i> more for recreation in the late afternoon.....	5
Been doing more <i>indoor</i> recreational activities in the late afternoon.....	7
Been doing more <i>outdoor</i> work on the house or yard in the late afternoon.....	8
Been doing more housework <i>indoors</i> in the late afternoon.....	9
Other (specify).....	6

B. Would you say that you are now driving more, less, or about the same amount in the late afternoon as you were before we went back onto Daylight Saving Time? (273)

More.....	3
Less.....	1
About the same.....	2
N.A. [R does not (Generally) drive].....	4

32. As you know, the United States Congress put our country back onto Daylight Saving Time this winter as part of a two-year experiment to try to save energy. Some people think that we should continue to have Daylight Saving Time all year round, that is, not turn the clocks back at the end of next October. Would you approve or disapprove of remaining on Daylight Saving Time all year round next year, or don't you care one way or the other? (274)

Approve (ASK A).....	3
Disapprove (ASK A & B).....	1
Don't care (SKIP TO Q. 33).....	2
Don't know (SKIP TO Q. 33).....	4

A. IF APPROVE OR DISAPPROVE (CODES 3 OR 1): How strongly do you feel about it? Do you (dis)approve very strongly, pretty strongly, or not too strongly? (275)

Very strongly.....	3
Pretty strongly.....	2
Not too strongly.....	1

B. IF DISAPPROVE (CODE 1): What months would you prefer *not* to be on Daylight Savings Time? CODE ALL THAT APPLY. PROBE IF YOU HAVE TO IN ORDER TO GET EXACT MONTHS R DOES *NOT* WANT DAYLIGHT SAVING TIME. (276)

No Daylight Saving Time ever.....	00
January.....	01
February.....	02
March.....	03
April.....	04
May.....	05
June.....	06
July.....	07
August.....	08
September.....	09
October.....	10
November.....	11
December.....	12
Daylight Saving Time all the time.....	13

IF "Approve" (CODE 3) IN Q. 32, ASK Q. 33. ALL OTHERS SKIP TO Q. 34.

33. Suppose it turned out that the country saved very little energy as a result of being on Daylight Saving Time most of this winter. Would you approve or

disapprove of remaining on Daylight Saving Time all year around next year, or wouldn't you care one way or the other? (291)

Approve -----	3
Disapprove -----	1
Don't care -----	2
Don't know -----	4

34. Last December—that is, December, 1973—before we went back onto Daylight Saving Time—were you in favor of or against going back onto Daylight Saving Time for the remaining winter months? (292)

In favor -----	3
Against -----	1
Didn't care -----	2
Don't remember -----	4

IF "DISAPPROVE" NOW (CODE 1 IN Q. 32) AND "IN FAVOR" LAST DECEMBER (CODE 3 IN Q. 34) ASK Q. 35. ALL OTHERS SKIP TO Q. 36.

35. What caused you to change your mind about Daylight Saving Time? RECORD RESPONSE VERBATIM AND CODE ALL THAT APPLY. (293)

Don't think it saved energy after all -----	01
Children have to go to school in the dark -----	02
I get up in the dark -----	03
[I/family member(s)] feel less safe on the streets in the morning -----	04
Causes a delay in time when I could start my work in the morning -----	05
Hurts my business -----	06
Makes travel harder in the morning -----	07
Mixes up my schedule -----	08
Religious reasons -----	09
Hurts my performance on the job -----	10
Changes the hours schools are open -----	11
Other (specify) -----	12
Don't know, just don't like it -----	13
Office use -----	14

Most changes have some things that people like about them and some things people don't like about them.

36. Now that we have Daylight Saving Time all year round, in what way do you like it? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENTS. (308)

Permits more outdoor work on the house or yard in the late afternoon -----	15
Makes travel easier in the evening -----	01
Improves my ability to perform work activities -----	02
Helps my business -----	03
I have more useful free time with family -----	04
Permits extra social and recreational activity -----	05
[I/family member(s)] feel less safe on the street in the morning -----	03
Prevents having to change clocks twice a year -----	07
Saves on (fuel/lighting/energy) -----	08
I have light when I need it -----	09
Increases the amount of time for outdoor play for children -----	12
Changes the hours schools are open -----	13
Other (specify) -----	10
I do not like it in any way -----	11
Office use -----	14

37. Now that we have Daylight Saving Time all year round, in what ways do you not like it? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ THESE CATEGORIES TO RESPONDENTS. (323)

Children have to go to school in the dark -----	01
I get up in the dark -----	02
[I/family member(s)] feel less safe on the street in the morning -----	03
Causes a delay in time when I could start work in the morning -----	04
Hurts my business -----	05
Makes travel harder in the morning -----	06

Mixes up my schedule.....	07
Religious reasons.....	08
Hurts my performance on the job.....	11
Changes the hours schools are open.....	12
Other (specify).....	09
There is nothing I do not like about it.....	10
Office use.....	13

38. What about the country as a whole? In what ways do you think life in this country is helped by having Daylight Saving Time all year round? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ CATEGORIES TO RESPONDENTS. (337)

Permits more outdoor work on the house or yard in the late afternoon....	17
Saves electricity.....	09
Saves gasoline.....	10
Saves heating fuel.....	11
Saves (energy/fuel) (unspecified as to type of energy or fuel).....	12
Improves highway safety, less accidents.....	01
Improves business.....	03
Makes trips from work faster and easier.....	04
Increases opportunities for social and recreational activities.....	05
I/We have light when we need it.....	06
Increases the amount of time for outdoor play for children.....	13
Changes the hours schools are open.....	14
Reduces crime.....	15
Other (Specify).....	07
Does not help life in this country at all.....	08
Office use.....	16

39. In what ways do you think being on Daylight Saving Time all year round is not good for life in this country? RECORD VERBATIM AND CODE AS MANY AS APPLY. DO NOT READ CATEGORIES TO RESPONDENTS. (353)

Hurts farmers.....	01
Is bad for people who have to get up early.....	02
Children have to go to school in the dark.....	03
There are more accidents in the morning.....	04
Makes driving more dangerous in the morning.....	05
Hurts business.....	06
People have to change their way of living.....	07
Changes the hours schools are open.....	11
Change is bad (unspecified).....	08
Other (Specify).....	09
Is not bad in any way for life in this country.....	10
Office use.....	12

40. There have been some accidents involving children on their way to school this winter. Some people think that such accidents were caused by the extra hour of darkness in the morning that winter Daylight Saving Time brought. Others think such accidents would have occurred even if we were not on Daylight Saving Time. Which view comes closest to your way of thinking? (366)

Such accidents were caused by the extra hour of darkness in the morning..	1
Such accidents would have occurred even if we were not on Daylight Saving Time.....	2

41. Do you think that we should go off Daylight Saving Time next winter because some people have been concerned about the safety of children on their way to school in the morning? (367)

Yes.....	1
No.....	2

42. As far as you know, have children in *your* community been having any extra problems this winter getting to school safely in the morning? (368)

Yes (Ask A).....	1
No.....	2
If volunteered: Don't know.....	3

A. Do you think these extra problems were because of the additional hours of darkness in the morning? (369)

Yes ----- 1  
No ----- 2

IF THERE ARE ANY CHILDREN UNDER 18 IN SCHOOL IN THE HOUSEHOLD (SEE SCREENER), ASK Qs. 43-45. ALL OTHERS SKIP TO Q. 47.

43. During the past January and February, that is, January and February of 1974, (was/were) the (child/children) ever driven to school by car? (370)

Yes (ASK A) ----- 1  
No (GO TO Q. 44) ----- 2  
If volunteered: N.A. (GO TO Q. 44) ----- 3

A. IF YES: About how many times a week did the (child/children) go to school by car during the months of January and February? CODE ONE ONLY. (371)

Less than once a week ----- 0  
Once a week ----- 1  
Twice a week ----- 2  
Three times a week ----- 3  
Four times a week ----- 4  
Five times a week ----- 5

44. During January and February of the winter before last, —that is, during January and February of 1973, (was/were) the (child/children) ever driven to school by car? (372)

Yes (ASK A) ----- 1  
No (GO TO Q. 45) ----- 2  
If volunteered: N.A. (child/children) did not go to school that winter (GO TO Q. 45) ----- 3

A. IF YES: About how many times a week did the (child/children) go to school by car during the months of January and February the winter before last (1973)? CODE ONE ONLY. (373)

Less than once a week ----- 0  
Once a week ----- 1  
Twice a week ----- 2  
Three times a week ----- 3  
Four times a week ----- 4  
Five times a week ----- 5

45. During the months of January and February of *this* winter (1974) was it dark outside when the (child/children) left for school in the morning? (374)

Yes ----- 1  
No ----- 2  
If volunteered: N. A. children did not go to school *in the morning* ----- 3

IF YES TO Qs. 43 AND 45, ASK Q. 46:

46. In January and February of this winter, did you ever send the (child/children) to school in a car *because* it was dark in the morning? (375)

Yes ----- 1  
No ----- 2

47. During January, February, or March of this year, did the public schools, elementary or high schools—start classes later in the morning than usual? (376)

Yes (ASK A-C) ----- 1  
No (GO TO Q. 48) ----- 2  
If volunteered: Don't know (GO TO Q. 48) ----- 3

IF YES, ASK A-C:

A. During those months, did the schools start classes later in the morning than usual because of the extra hour of darkness in the morning that winter Daylight Saving Time brought? (377)

Yes ----- 1  
No ----- 2  
Don't know ----- 3

B. About how much later in the morning than usual did classes start? (378)

Less than 15 minutes.....	1
15 minutes to less than ½ hour.....	2
½ hour to less than 45 minutes.....	3
45 minutes to less than 1 hour.....	4
1 hour or more.....	5

C. Now that it is spring, have the public schools moved the starting time for classes back to the time usual before January 1, 1974? (379)

Yes (ASK D).....	1
No.....	2

D. IF YES: When did the public schools move the starting time for classes back to the usual time? During February, March, April or May? CODE ONE ONLY. (380)

February.....	1
March.....	2
April.....	3
May.....	4

Time : \_\_\_\_\_ AM \_\_\_\_\_ PM

SAMPLE SIZES

Category	Cycle					
	5	6	7	8	10	11
Total N.....	644	631	688	700	696	249
Race:						
Black.....	53	61	45	70	70	16
White.....	557	545	600	604	619	224
Other.....	33	26	43	14	3	9
Impact zone:						
East-North.....	161	151	152	174	142	58
East-South.....	81	71	79	75	78	19
West-North.....	82	81	84	97	80	33
West-South.....	160	140	173	159	189	67
Far West-North.....	66	79	74	78	87	36
Far West-South.....	94	108	125	118	120	35
Region:						
New England.....	29	24	29	33	34	12
Mid-Atlantic.....	135	123	126	135	114	45
East North Atlantic.....	127	144	146	154	148	64
West North Atlantic.....	48	47	55	53	54	26
South Atlantic.....	120	109	124	115	141	38
East South Atlantic.....	34	38	51	40	39	7
West South Atlantic.....	52	56	54	57	53	16
Mountain.....	17	20	28	27	32	13
Pacific.....	84	70	76	85	79	28
Children:						
In school.....	439	438	389	429	418	164
No children in school.....	205	193	299	271	278	85
Income:						
Under \$2,000.....	35	37	31	47	55	9
\$2,000 to \$3,999.....	58	51	50	67	60	19
\$4,000 to \$5,999.....	50	60	64	65	65	17
\$6,000 to \$7,999.....	57	49	59	78	75	18
\$8,000 to \$9,999.....	50	66	62	70	48	31
\$10,000 to \$14,999.....	163	146	151	140	19	65
\$15,000 to \$19,999.....	75	81	103	83	99	31
\$20,000 to \$24,999.....	49	47	45	34	57	13
\$25,000 plus.....	51	33	65	32	52	27
Don't know or refused.....	57	61	60	66	62	19
Locale:						
City.....	210	215	222	222	212	96
Suburb.....	148	143	159	145	152	35
Town.....	133	111	142	141	151	56
Rural (nonfarm).....	119	128	136	136	130	47
Farm.....	33	35	28	38	45	15

## ATTACHMENT B

## OPINION RESEARCH CORP., PRINCETON, N.J.

## FEDERAL ENERGY ADMINISTRATION/OFFICE OF ENERGY CONSERVATION AND ENVIRONMENT

[Question K77: energy co-op, wave 26 and 27, int. ended Mar. 31, 1975—How do you feel about being on daylight savings time now?]

	Percent- age base	Very favorable	Fairly favorable	Not too favorable	Very unfavor- able	No difference	No opinion
Total public.....	1,208	36	15	15	13	81	3
Men.....	595	38	15	13	13	8	3
Women.....	613	34	16	17	18	7	3
Age 18 to 29.....	326	40	17	16	7	7	3
30 to 49.....	453	37	15	14	11	6	5
50 or over.....	425	31	16	16	19	7	1
Less than high school complete.....	284	28	17	16	17	9	3
High school complete.....	451	37	16	15	11	8	3
Some college.....	456	45	13	14	10	9	1
Family income under \$10,000.....	403	32	14	17	16	9	12
\$10,000 to \$15,000.....	271	37	19	14	9	7	14
Over \$15,000.....	382	42	17	12	10	6	13
White.....	1,063	36	15	16	12	8	13
Nonwhite.....	131	35	18	10	16	9	12
Democrat.....	461	36	13	18	12	8	13
Republican.....	194	36	16	16	14	10	8
Environmentally active.....	164	45	13	13	16	6	7
City.....	463	33	19	15	11	9	13
Suburb.....	307	42	17	14	10	8	9
Small town.....	241	38	12	16	13	6	15
Rural area.....	187	33	10	17	18	7	15
East.....	296	44	16	15	9	6	10
Midwest.....	346	30	15	15	13	7	20
South.....	369	35	15	20	16	6	8
West.....	197	36	17	9	11	14	13
Drive 150 mi per week or less.....	508	36	15	19	12	8	10
Drive over 150 mi per week.....	392	41	14	13	12	6	14

Question K 788: Why do you say that (you are favorable about being on daylight saving time)?

[Legend: A. percent asked this question; 1. More light in evenings/can do more in the evenings/more light in day; 2. (Non-specific) just like it; 3. Kids can play out in evenings; 4. Saves light/energy; 5. Good for kids coming home from school; 6. Other; 7. No response]

	Percentage base	A.	1.	2.	3.	4.	5.	6.	7
Total public.....	1,208	51	37	7	1	4	1	3	0
Men.....	595	53	40	6	1	4	1	3	0
Women.....	613	50	35	7	2	4	1	3	0
Age:									
18 to 29.....	326	57	44	4	1	5	0	3	0
30 to 49.....	453	53	40	7	2	2	1	1	0
50 or over.....	425	47	30	8	1	5	1	4	0
Less than high school complete.....	284	45	31	7	1	3	1	4	0
High school complete.....	451	54	40	6	2	4	1	2	0
Some college.....	456	58	44	7	1	4	1	4	0
Family income under \$10,000.....	403	45	32	7	1	4	0	4	0
\$10,000 to \$15,000.....	271	56	42	5	2	3	1	3	0
Over \$15,000.....	382	59	44	7	2	5	1	4	0
White.....	1,063	51	38	6	1	4	1	3	0
Nonwhite.....	131	53	35	8	2	5	1	3	0
Democrat.....	461	49	37	6	1	4	1	3	0
Republican.....	194	52	34	10	2	3	1	3	0
Environmentally active.....	164	58	40	9	2	3	1	5	0
City.....	463	53	37	8	1	4	0	3	0
Suburb.....	307	59	46	4	3	6	0	2	0
Small town.....	241	51	36	8	1	6	1	3	0
Rural area.....	187	43	31	6	2	3	1	3	0
East.....	296	60	46	4	3	6	1	3	0
Midwest.....	346	44	31	7	2	2	1	2	0
South.....	369	51	35	8	1	6	1	4	0
West.....	197	53	41	7	1	1	1	2	0
Drive 150 mi per week or less.....	508	52	38	8	2	4	1	2	0
Drive over 150 mi per week.....	392	55	42	5	1	3	1	4	0

Question K78A: Why do you say that (you are unfavorable about being on daylight saving time)?

[Legend: A. Percent asked this question; 1. Problem of children going to school in dark; 2. Don't like it so dark in mornings (non-specific); 3. Doesn't save energy/use lights in the morning—no benefit in energy savings; 4. Don't like to get up in the dark/go to work in dark; 5. Just don't like it (non-specific); 6. Other; 7. No response]

	Percentage base	A.	1.	2.	3.	4.	5.	6.	7.
Total public.....	1,208	28	7	2	4	4	8	5	0
Men.....	595	26	6	2	5	4	8	4	0
Women.....	613	30	8	3	4	4	7	6	0
Age:									
18 to 29.....	326	23	4	2	4	5	6	4	0
30 to 49.....	453	25	9	2	3	3	7	3	0
50 or over.....	425	35	7	3	6	4	10	8	0
Less than high school complete.....	284	3	9	2	4	5	11	6	0
High school complete.....	451	26	6	3	4	2	7	5	0
Some college.....	456	23	5	1	6	4	5	5	0
Family income under \$10,000.....	403	33	8	2	5	5	9	7	0
\$10,000 to \$15,000.....	271	24	6	2	4	3	7	3	0
Over \$15,000.....	382	22	4	3	4	1	6	4	0
White.....	1,063	28	7	2	5	3	8	5	0
Nonwhite.....	131	26	6	3	3	7	5	4	0
Democrat.....	461	29	8	2	4	5	7	6	0
Republican.....	194	30	5	3	6	1	8	6	0
Environmentally active.....	164	29	8	2	5	2	9	5	0
City.....	463	26	6	4	4	4	6	4	0
Suburb.....	307	24	6	2	3	2	7	5	0
Small town.....	241	29	6	*	7	3	10	4	0
Rural area.....	187	35	10	2	3	7	9	8	0
East.....	296	24	3	3	5	4	4	6	0
Midwest.....	346	28	9	2	3	5	8	5	0
South.....	369	35	8	3	6	3	10	7	0
West.....	187	20	6	1	3	2	7	2	0
Drive 150 mi per week or less.....	508	30	7	2	5	4	7	5	0
Drive over 150 mi per week.....	392	26	6	3	3	4	9	4	0

Question K79: Before this change to daylight saving time, was it dark when you got up in the morning?

	Percentage base	Yes	No	Other	Don't know
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Question K79: Before this change to daylight saving time, was it dark when you got up in the morning?

	Percentage base	Yes	No	Other	Don't know
Total public.....	1,208	57	35	4	4
Men.....	595	62	31	4	3
Women.....	613	53	38	4	5
Age:					
18 to 29.....	326	50	41	5	4
30 to 49.....	453	64	29	2	5
50 or over.....	425	56	35	5	4
Less than high school complete.....	284	60	32	3	5
High school complete.....	451	56	35	5	4
Some college.....	456	55	39	3	3
Family income under \$10,000.....	403	55	37	5	3
\$10,000 to \$15,000.....	271	62	32	2	4
Over \$15,000.....	382	59	32	3	6
White.....	1,063	59	33	4	4
Nonwhite.....	131	48	47	2	3
Democrat.....	461	57	34	5	4
Republican.....	194	57	39	3	1
Environmentally active.....	164	53	40	2	5
City.....	463	56	34	6	4
Suburb.....	307	54	40	3	3
Small town.....	241	60	31	4	5
Rural area.....	187	60	34	2	4
East.....	296	60	36	4	0
Midwest.....	346	59	25	6	10
South.....	369	56	41	3	-----
West.....	197	53	39	2	6
Drive 150 mi per week or less.....	508	60	33	4	3
Drive over 150 mi per week.....	392	57	35	3	5

## Question K80: At what time do you usually get up in the morning?

[Legend: 1. Before 6 a.m.; 2. 6 to 6:59 a.m.; 3. 7 to 7:29 a.m.; 4. 7:30 to 7:59 a.m.; 5. 8 a.m. or later; 6. other answer; 7. not reported]

	Percentage base	1.	2.	3.	4.	5.	6.	7.
Total public.....	1,208	22	32	20	6	14	3	3
Men.....	595	24	34	20	5	11	3	3
Women.....	613	20	31	21	8	16	2	2
Age:								
18 to 29.....	326	13	38	23	8	14	1	3
30 to 49.....	453	30	39	18	4	5	2	2
50 or over.....	425	22	22	21	7	21	4	3
Less than high school complete.....	284	27	28	20	6	14	2	3
High school complete.....	451	24	35	18	6	12	2	3
Some college.....	456	13	35	24	7	16	3	2
Family income under \$10,000.....	403	21	27	21	7	19	2	3
\$10,000 to \$15,000.....	271	24	40	17	6	9	2	2
Over \$15,000.....	382	23	37	20	6	9	3	2
White.....	1,063	22	32	20	6	14	3	3
Nonwhite.....	131	23	35	22	9	6	2	3
Democrat.....	461	25	33	20	6	11	3	2
Republican.....	194	18	27	23	10	18	2	2
Environmentally active.....	164	19	32	18	7	18	3	3
City.....	463	18	32	17	7	17	4	5
Suburb.....	307	21	35	21	6	13	2	2
Small town.....	241	25	27	25	7	13	2	1
Rural area.....	187	24	38	22	5	8	2	1
East.....	296	24	27	21	7	17	2	2
Midwest.....	346	20	37	18	7	10	3	5
South.....	369	23	34	24	4	12	3	0
West.....	197	20	28	18	9	18	1	6
Drive 150 mi per week or less.....	508	21	35	19	5	15	2	3
Drive over 150 mi per week.....	392	24	36	24	6	7	2	1

## Question K81: Now that we are on daylight saving time, are you doing anything any differently in the evenings?

	Percentage base	Yes	No	Don't know
Total public.....	1,208	23	73	4
Men.....	595	25	72	3
Women.....	613	21	74	5
Age:				
18 to 29.....	326	28	67	5
30 to 49.....	453	25	70	5
50 or over.....	425	17	80	3
Less than high school complete.....	284	14	81	5
High school complete.....	451	27	69	4
Some college.....	456	29	67	4
Family income under \$10,000.....	403	16	80	4
\$10,000 to \$15,000.....	271	30	66	4
Over \$15,000.....	382	30	64	6
White.....	1,063	23	73	4
Nonwhite.....	131	23	74	3
Democrat.....	461	23	73	4
Republican.....	194	26	72	2
Environmentally active.....	164	26	69	5
City.....	463	21	75	4
Suburb.....	307	28	69	3
Small town.....	241	24	71	5
Rural area.....	187	23	72	5
East.....	296	23	77	0
Midwest.....	346	16	73	11
South.....	369	31	69	0
West.....	197	20	74	6
Drive 150 mi per week or less.....	508	27	70	3
Drive over 150 mi per week.....	392	27	68	5

Question K81A: What are you doing differently? (Asked only of those who say they are doing things differently in the evenings).

(Legend: A. Percent asked this question; 1. Go shopping more; 2. Work in garden more/work around home; 3. Go for walks in the evenings; 4. Go out more (nonspecific); 5. Play with the kids outside; 6. Other; 7. No response)

	Percentage base	A.	1.	2.	3.	4.	5.	6.	7.
Total public.....	1,208	23	1	10		5	1	6	
Men.....	595	25		11	0	5	1	7	1
Women.....	613	22	1	8	1	5	2	6	
Age:									
18 to 29.....	326	28	1	9	0	8	2	8	
30 to 49.....	453	25		11		5	2	6	1
50 or over.....	425	17	1	9	1	2	0	5	
Less than high school complete.....	284	14	0	9	1	1		3	
High school complete.....	451	28	1	10		7	2	8	
Some college.....	456	30	1	11		7	1	8	1
Family income under \$10,000.....	403	16		8	1	3	1	4	
\$10,000 to \$15,000.....	271	30	1	11	0	10	2	7	
Over \$15,000.....	382	30	1	13		6	1	9	1
White.....	1,063	23		9		5	1	7	
Nonwhite.....	131	23	2	12	0	2	3	3	2
Democrat.....	461	23	1	10		5	1	5	1
Republican.....	194	26		12		5		8	
Environmentally active.....	164	26	1	12	0	5	2	6	1
City.....	463	21		7		5	1	6	1
Suburb.....	307	28	2	12		5	2	7	1
Small town.....	241	24	1	12	1	4	2	4	
Rural area.....	187	23		10		6	1	6	0
East.....	296	23	1	11	1	5	4	2	
Midwest.....	346	16		4		5	1	5	1
South.....	369	31	1	15		5		10	0
West.....	197	20	0	9	0	6		5	
Drive 150 mi per week or less.....	508	27	1	12		8	2	5	
Drive over 150 mi per week.....	392	27		11		4	1	9	

Question K82: Are you using your car more, less, or about the same, now that we are on daylight saving time?

	Percentage base	More	Less	About the same	No car	Don't know
Total public.....	1,208	6	8	67	12	8
Men.....	595	8	8	73	6	5
Women.....	613	4	7	61	18	10
Age:						
18 to 29.....	326	10	9	65	8	8
30 to 49.....	453	5	8	75	5	7
50 or over.....	425	2	7	61	22	8
Less than high school complete.....	284	4	8	54	25	10
High school complete.....	451	7	9	72	6	7
Some college.....	456	6	8	76	4	6
Family income under \$10,000.....	403	5	7	58	23	8
\$10,000 to \$15,000.....	271	5	9	79	2	5
Over \$15,000.....	382	9	7	74	1	9
White.....	1,063	5	8	70	10	8
Nonwhite.....	13	12	9	45	25	9
Democrat.....	461	5	7	67	15	7
Republican.....	194	6	12	69	8	5
Environmentally active.....	164	9	11	68	4	8
City.....	463	7	7	60	17	9
Suburb.....	307	5	8	74	8	5
Small town.....	241	6	9	68	8	9
Rural area.....	187	2	9	73	9	8
East.....	296	6	7	59	22	6
Midwest.....	346	5	8	67	7	13
South.....	369	6	10	70	11	4
West.....	197	7	6	70	10	8
Drive 150 mi per week or less.....	508	7	11	77		5
Drive over 150 mi per week.....	392	7	7	78	0	8

Question 1: What is the total amount of money that was spent on the project? ...

Category	Amount	Percentage
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%

Question 2: Are you confident that more than 10% of the money was spent on the project?

Category	Amount	Percentage
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%
Give over 100 to each week	100	10%
Give over 50 to each week	50	5%
West	20	2%
Club	10	1%
2 hours	10	1%
Give	10	1%
3 days	10	1%