COUNTING, CLASSIFYING, AND SUMMARIZING TROUBLES IN TOLL OPEN WIRE (USING DETAILED TROUBLE CLASSIFICATIONS)

1. GENERAL

1.01 This section is issued to furnish procedures for counting, classifying, and summarizing toll open wire troubles. Form S-6036 described in Part 4 is provided for summarizing and reporting trouble data.

1.02 Trouble classifications defined later in this section are used for summary and analysis purposes. Other Southwestern Company Sections in Division 660 furnish information for analysis procedures of toll open wire troubles.

2. DEFINITIONS AND INTERPRETATIONS

2.01 Toll open wire for the purpose of this section includes all open wire lines which are used to provide inter-exchange services such as message, private line, program, etc. Spare wires which are maintained and available for service are included.

2.02 Each maintenance area shall include in its summaries the toll open wire mileage and associated troubles for the wire which it maintains, regardless of the ownership of the wire. Toll open wire owned by the Southwestern Company maintained by others shall not be included in summaries. Summaries shall reflect wire mileage in effect at the beginning of the monthly report period.

2.03 Toll open wire trouble is defined as any condition sectionalized to the open wire which would interrupt or impair service. Non-service affecting conditions are not counted as trouble cases.

2.04 Toll open wire troubles are counted in two ways; (1) the number of cases of trouble, and (2) the number of wire troubles. Each maintenance area shall count the cases of trouble and related wire troubles occurring within its area.

2.05 A "case" of trouble is defined as a trouble condition on one or more wires brought about by a single cause. One case of trouble should be counted for each occurrence regardless of the number of wires affected.

2.06 A "wire" trouble is defined as a trouble condition on any one wire. One wire trouble should be counted for each wire affected by a case of trouble.

2.07 Found troubles and disappearing troubles shall be classified and counted in the monthly report period in which the case is closed. A case of trouble is considered closed when the wires affected are no longer in trouble.

2.08 When extensive damage occurs due to action of the elements, each District affected by such an occurrence shall count one case of trouble, and count the total number of wires affected as the number of wire troubles.

2.09 A case of trouble shall be considered closed when the restoration has been completed. In the event of severe and widespread storms it may not be possible to make permanent repairs for some time; however, after temporary repairs have been made, the case should be closed. Troubles resulting from another cause, such as from

an extraneous cause or from another storm, should be counted as a new case of trouble in the usual manner. If it is decided to abandon the toll route or certain wires on the toll route rather than to restore the plant in that location, the troubles should be classified and counted in the period in which abandonment is authorized.

2.10 One case of trouble shall be counted for each occurrence due to extraneous causes or structural defects. Two or more coexistent troubles on one wire as the result of two or more separate occurrences shall be counted as separate cases.

3. TROUBLE CLASSIFICATIONS

3.01 Troubles shall be classified in accordance with the following definitions. When a trouble may be charged logically to more than one classification, the one selected should most nearly reflect the cause of the trouble so that an analysis of such troubles will lead to the proper corrective measures.

3.02 When wire maintained by the Southwestern Company occupies poles maintained by other companies on a joint ownership or rental basis, troubles due to the failure of the supporting structure for such wires will be charged in the same manner as for Southwestern Company maintained poles.

3.03 The following paragraphs of this part list and define trouble classifications. Troubles classified in this manner shall be summarized on Form S-6036 which is described in Part 4 of this section. Lettered sub-classifications for each code are furnished in Section 660-095-901 SW for analysis purposes.

A. Elements

3.04 Code 101 - Ice or Snow - Covers troubles resulting from damage caused by ice, snow, or hail. The determination of the proper classification should be made from the evidence presented by the defective or damaged plant, and should be based upon the judgment whether sound plant or defective plant was damaged.

3.05 Code 102 - Violent Wind - Covers troubles resulting from wind storms of high velocity except where there is evidence that the troubles were due primarily to extraneous causes or to defects in the plant.

3.06 Code 103 - Lightning - Covers troubles resulting from damage to the telephone plant due to lightning, and includes troubles caused by wires breaking at old lightning burns. This code does not include service interruptions due to static from lightning where there is no plant damage due to lightning (see code 193). See code 191 for protector operation caused by lightning.

3.07 Code 104 - Flood - Covers troubles resulting from high water and washouts. This does not include cases of individual poles kicking out of soft earth (see code 151).

3.08 Code 105 - Fire, Landslide, Snowslide, and Earthquake - Covers troubles resulting directly from fire, landslides, snowslides, and earthquakes. This classification includes burning buildings, oil tanks, waste oil, vehicles, and forest fires, brush or grass fires.

B. Extraneous Causes - Workmen

3.09 Code 111 - Bell Employee - Covers troubles resulting from work by Southwestern Company employees or contractors doing work for the Company, except tree cutting (see code 121). This classification includes troubles which occur during the performance of work, and those which occur at a later time due to faulty conditions left by Company workmen. Examples:

(1) A line gang leaves a section of line untied, and moves to some

other point on the line. Within a few days two wires become crossed where the line had been left untied.

(2) Troubles caused by line wire pulling out of a sleeve where, due to oversight of an employee, the sleeve was not rolled.

(3) Two wires are crossed. The trouble, which is located by test near a point where company workmen are working, "came clear." Company workmen near the test location have no knowledge of having caused trouble, but from the nature of their work crossed wires reasonably could have occurred.

3.10 Code 112 - Road Work (Including Blasting) - Covers troubles resulting from street or road work, and other construction work within the limits of the streets or highways such as trenching, filling, cutting, grading, paving, blasting, etc.

3.11 Code 118 - Other Workmen - Covers troubles caused by workmen other than Southwestern Company employees or contractors performing work for the Company (see code 111).

C. Extraneous Causes - Trees, Brush, and Debris

3.12 Code 121 - Tree or Brush - Covers troubles such as leakage, grounds, or crosses resulting from trees, brush, vines, weeds, etc. This includes all troubles caused by trees or limbs which are broken, cut, blown, or fall on or through the line due to any cause other than the elements.

3.13 Code 123 - Debris - Covers troubles resulting from objects which are blown, thrown, or carried on to the line, except trees or limbs (see code 121). This includes troubles resulting from kite strings, fish lines, moss, bird nests, or pieces of wood, metal, wire, etc.

D. Extraneous Causes - Other

3.14 Code 131 - Other Company's Wire on Joint Lines - Covers troubles resulting from other company's crossarms, brackets, insulators, pins, or wires on a line which is occupied, either on a joint use or space rental basis, except where such plant forms the supporting structure to this Company's maintained wires or where the primary cause of trouble was due to the elements or extraneous causes. This includes plant occupied jointly with power or light companies. This classification also includes troubles (except protector operation - see Code 191), resulting from power arc follow-up or from direct contact with electric companies' wires or other plant on a joint line, except where a defect in this Company's maintained telephone plant was the cause of the trouble, in which case the troubles should be charged to the appropriate classification under structural defects.

3.15 Code 132 - Pole or Wire of Separate Line - Covers troubles resulting from contact with poles or wires of a separate pole line of telephone, telegraph or light companies, except troubles resulting from the elements or extraneous causes. This includes separate pole lines of Connecting Companies and includes troubles (except protector operation - see Code 191), resulting from power arc follow-up or from direct contact with electric companies' poles, wires, or other plant of a separate pole line, except where a defect in this company's maintained telephone plant was the cause of the trouble, in which case the troubles should be charged to the

appropriate classification under structural defects.

3.16 Code 133 - Power Induction - Covers troubles (except protector operation - see code 191) resulting from power induction, except a defect in the telephone plant chargeable to another trouble classification. This also covers troubles resulting from secondary power induction, such as induction from other signal wires which carry voltages or currents induced from power lines.

3.17 Code 134 - Vehicle or Machinery (Other than Aircraft) - Covers troubles resulting from automobiles, railroad equipment, or other vehicles (other than aircraft) striking the poles, guys, or other pole structure, and the troubles resulting from vehicles or machinery passing under the line, except where a defect in plant maintained by this Company, such as excess sag, was the cause of the trouble.

3.18 Code 136 - Bullet or Gunshot - Covers troubles resulting from damage to the poles, crossarms, brackets, insulators, or wires caused by bullets or gunshot. Troubles resulting from old gunshot damages where the line wire breaks are chargeable to this classification.

3.19 Code 138 - Miscellaneous Extraneous Causes - Covers troubles resulting from extraneous causes not covered by codes 111 to 136. This includes other troubles resulting from intentional or accidental interference, wire thefts, aircraft striking the line, broken insulators due to extraneous causes other than codes 111 to 136.

E. Structural Defects - Supporting Structure

3.20 Code 151 - Pole, Crossarm, or Guy - Covers troubles resulting from the failure or faulty condition of poles, stubs, braces, guys, anchors, crossarms, crossarm braces or bolts, pole brackets, transposition brackets, and crosses or shorts in line wires at butterfly or point transpositions, except such troubles due to the elements or extraneous causes. This does not include trouble resulting from defective pins, insulators, or tie wires (see codes 152, 153, and 165).

3.21 Code 152 - Pin - Covers troubles resulting from broken pins, broken or missing wood bushings or loose nuts on metal pins, defective bonding strap between pins, pins pulled from the crossarm, and insulators pulled from the pins due to defective pins or cobs. This does not include troubles of this nature due to the elements or extraneous causes.

3.22 Code 153 - Insulator - Covers troubles resulting from broken, missing, unscrewed, or leaky insulators except such troubles due to the elements, extraneous causes, or supporting structure. This does not include floating glass due to worn thimbles, or defective pins or cobs (see code 152). Troubles caused by insulators being shot off should be included under Classification 136 - Bullets and Gunshot. Troubles caused by insulators being broken by thrown rocks should be included under Classification 138 - Miscellaneous Extraneous Causes.

F. Structural Defects - Wire Structure

3.23 Code 161 - Line Wire Broken Within Reach of Pole - Covers troubles due to breaks in the line wire which occur within reach of the pole, except such troubles due to the elements, extraneous causes, or supporting structure. Tree wire used in place of line wire should be classified the same as line wire; outside distributing paired wire carried on knobs

or in rings in place of open wire construction should be considered as bridle wire or emergency wire (see code 166).

3.24 Code 162 - Line Wire Broken - Other Location - Covers troubles due to breaks in the line wire which occur at locations which are not within reach of the pole, except such troubles due to the elements, extraneous causes, or supporting structure. Tree wire used in place of line wire should be classified the same as line wire; outside distributing paired wire carried on knobs or in rings in place of open wire construction should be considered as bridle wire or emergency wire (see code 166).

3.25 Code 163 - Line Wire Connection - Covers troubles due to high resistance or loose connections in sleeves, connectors, or other joints in the line wire. This does not include troubles at the junction of bridle wire or outside distributing wire with the line wire (see code 166).

3.26 Code 164 - Line Wire Sag - Covers troubles resulting from open wire having insufficient sag, too much sag, or uneven sag, except such troubles in which the line wire is broken (see code 161 or 162), and except such troubles due to the elements, extraneous causes, or supporting structure.

3.27 Code 165 - Tie Wire - Covers troubles due to broken, missing, or loose tie wires, except such troubles which are due to the elements, extraneous causes, or supporting structure.

3.28 Code 166 - Bridle Wire, Emergency Cable or Wire - Covers troubles resulting from the failure or faulty condition of bridle wire, drop wire, loading coil leads, and emergency cable or wires, except such troubles due to the elements, extraneous causes, or supporting structure. This classification also includes broken wires and loose or high resistance soldered connections at the junction of such wires with line wires, cable terminals, other pole mounted equipment, or central office frames, but does not include loose or high resistance connections due to loose or defective binding posts, lugs, nuts, etc. Outside distributing wire carried on knobs or in rings in lieu of line wire should be considered as bridle wire or emergency wire under this classification.

3.29 Code 168 - Other Wire and Pole Mounted Equipment - Covers troubles resulting from wire defects which are not chargeable to the preceding classifications such as incorrect or missing transposition, wires of proper sag crossed in the span, etc., also trouble resulting from the failure or faulty condition of pole mounted equipment associated with open wire plant, such as carrier filters, loading coils, protectors for these coils or filters (except protector operation, see code 191, and troubles due to the elements, extraneous causes, or supporting structure). This classification does not include troubles in pole mounted equipment associated with the cable plant.

G. Disappearing Trouble

3.30 Code 182 - Disappearing Trouble - Covers troubles located by test in the open wire plant which came clear before the trouble was found. This classification is used only in those cases where the cause of the trouble cannot be presumed with reasonable accuracy. A case of wire trouble, which disappears before the cause can be found may be held open until the end of the report period month and, if during this period the trouble recurs or a condition is

found in the vicinity of the test location which appears to have been the cause of the trouble, the case and wire troubles shall be classified to the cause of the trouble condition found.

H. Auxiliary Data

3.31 Troubles resulting from the following causes are usually considered as trouble in the toll open wire or in associated equipment, but are not included in the totals for the purpose of measuring the number of troubles per 100 miles of wire. However, these classifications will assist in determining if improvements are needed in protection devices to reduce such troubles.

3.32 Code 191 - Protector Operation - Covers troubles resulting from protector operation in which no other plant trouble was recorded, such as for classification 103, 131, 132, or 133. Includes troubles resulting from the operation of protectors associated with toll open wire at cable terminals, open wire load coils, and at central offices (except where the open wires are connected into the central office or repeater station by a cable which is protected at the junction of the open wire and cable, as such troubles are included with cable troubles). When other open wire troubles result from a condition which causes protector operation on the same wires, no wire troubles are charged to this classification.

3.33 Code 192 - Weather Bound Carrier Wires - Covers troubles resulting from high attenuation at carrier frequencies due to frost, fog, ice, or snow, where no other physical defect exists in the toll open wire plant. This does not include troubles due to wires wrapping or freezing in the span (see codes 101, 102, 164, and 168).

3.34 Code 193 - Static or Earth Current - Covers troubles (except protector operation - see code 191) resulting from interference to service due to static (from lightning or cause unknown) or from earth currents in which no toll open wire plant damage exists.

4. DESCRIPTION AND PREPARATION OF FORM S-6036

4.01 Form E-1101 shall be used at toll testboard locations to log and record each case of toll open wire trouble. Space is provided on Form E-1101 to indicate the number of wire troubles for each trouble case and the trouble classification code.

4.02 Trouble data from Forms E-1101 shall be summarized on Form S-6036, Monthly Toll Open Wire Trouble Analysis. Exhibit 1 is a facsimile of Form S-6036. Space is provided at the top of the form for entering the following data: Company, Area, Division and Month.

4.03 Column A - Trouble Classification: In this column are listed the trouble classifications which are described in Part 3 of this section.

4.04 Column B - Line or Code No.: In this column are listed the code numbers corresponding to the various trouble classifications.

4.05 Column C - Cases of Trouble: Enter in this column for each trouble classification, the number of cases of trouble which occurred in the toll wire covered by this summary.

4.06 Column D - Wire Troubles - Number: Enter in this column for each trouble classification, the number of wire troubles which occurred in the toll open wire covered by this summary.

4.07 Column E - Wire Troubles Per 100 Wire Miles: Enter in this column for each trouble classification the number of wire troubles per 100 wire miles. This is obtained by dividing the number of wire troubles in column D by the number of single wire miles shown on line 194, and multiplying by 100. This number shall be rounded to the second decimal place.

4.08 Line 194 - Single Wire Miles: Enter the number of single wire miles (as outlined in paragraph 2.01) covered by this summary.

4.09 Special Study Data: These lines are provided for recording the results data of special studies. For example, if in a division, a special study is being conducted of a breakdown of all troubles in which the proximity of trees is a factor, these lines provide space for recording the trouble results data for these sub-classifications, to obtain a total for each maintenance area, and hence a total for the entire division. Enter on a line in Column B the code number of a classification or sub-classification under special study, and enter on the same line in columns C to H the corresponding trouble data.

4.10 Eight grids of columns C, D and E are available to enter District or Division results. The appropriate entity identification shall be entered in the blank space above the column headings. The last grid of three columns is designated for totals of an Area or Division.

5. REPORTS

5.01 Summary reports on Form S-6036 are required from each District, Division and Area for each monthly report period. The monthly report period is from the 23rd of each month through the 22nd of the following month, which is the same as the Toll Service Results Measurement Plan.

5.02 Each Area shall arrange to forward one copy of each Division and Area report on Form S-6036 to the Supervisor of Corporate Books at Company Headquarters. Division reports shall list District results alphabetically in separate columns. Area reports shall list Division results alphabetically in separate columns. These reports shall be forwarded to reach the Supervisor of Corporate Books no later than the 5th of the month following the end of each monthly report period. Company summaries shall be prepared by the Supervisor of Corporate Books for distribution and statistical purposes.

Attached: Exhibit 1

FORM S-6036
(REV. 1-61)

MONTHLY TOLL OPEN WIRE TROUBLE ANALYSIS

COMPANY	
AREA	DIVISION
	MONTH

TROUBLE CLASSIFICATION			LINE OR CODE NO.	DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			DISTRICT - DIVISION			AREA - DIVISION TOTAL		
				CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES		CASES OF TROUBLE	WIRE TROUBLES	
A			B	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E	C	NUMBER D	PER 100 WIRE MI. E
ELEMENTS	ICE OR SNOW		101																											
	VIOLENT WIND		102																											
	LIGHTNING		103																											
	FLOOD		104																											
	FIRE, LANDSLIDE, SNOWSLIDE, AND EARTHQUAKE		105																											
	TOTAL (LINES 101 TO 105)		110																											
EXTRANEOUS CAUSES	WORKMEN	BELL EMPLOYEE	111																											
		ROAD WORK (INCLUDING BLASTING)	112																											
		OTHER WORKMEN	113																											
		TOTAL (LINES 111 TO 113)	120																											
	TREES, BRUSH, AND DEBRIS	TREE OR BRUSH	121																											
		DEBRIS	123																											
		TOTAL (LINES 121 TO 123)	130																											
	OTHER	OTHER COMPANY'S WIRE OR JOINT LINE	131																											
		POLE OR WIRE OF SEPARATE LINE	132																											
		POWER INDUCTION	133																											
		VEHICLE OR MACHINERY (OTHER THAN AIRCRAFT)	134																											
		BULLET OR GUN SHOT	136																											
		MISCELLANEOUS EXTRANEOUS CAUSES	138																											
		TOTAL (LINES 131 TO 138)	140																											
TOTAL EXTRANEOUS CAUSES (LINES 120+130+140)			150																											
STRUCTURAL DEFECTS	SUPPORTING STRUCTURE	POLE, CROSSARM, OR GUY	151																											
		PIN	152																											
		INSULATOR	153																											
		TOTAL (LINES 151 TO 153)	160																											
	WIRE STRUCTURE	LINE WIRE BROKEN WITHIN REACH OF POLE	161																											
		LINE WIRE BROKEN - OTHER LOCATION	162																											
		LINE WIRE CONNECTION	163																											
		LINE WIRE SAG	164																											
		TIE WIRE	165																											
		BRIDLE WIRE, EMERGENCY CABLE OR WIRE	166																											
		OTHER WIRE AND POLE MOUNTED EQUIPMENT	168																											
		TOTAL (LINES 161 TO 168)	170																											
TOTAL STRUCTURAL DEFECTS (LINES 160+170)			180																											
TOTAL EXTRANEOUS CAUSES & STRUCTURAL DEFECTS (LINES 150+180)			181																											
DISAPPEARING TROUBLE			182																											
TOTAL - ALL CAUSES (LINES 110+181+182)			190																											

AUXILIARY DATA	PROTECTOR OPERATION		191																											
	WEATHER BOURD CARRIER WIRES		192																											
	STATIC OR EARTH CURRENT		193																											
	SINGLE WIRE MILES		194																											
SPECIAL STUDY DATA																														

EXHIBIT 1

TOLL OPEN WIRE TROUBLE ANALYSIS
FORM S-6036