Development of a Knowledge-Based Expert System for Tax Auditing

by

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B.S., Accounting, Western New England College, (1971)

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Abstract

This thesis describes the development of the "Federal Income Tax Toolkit" (FITT), which is a knowledge-based expert system designed to help the auditor navigate through the maze of the Internal Revenue Code, regulations and legal precedents of the United States Federal Tax system. The objective of this thesis is to demonstrate the potential of knowledge-based systems for increasing the quality and productivity of a tax audit despite the ever-increasing complexity and volume of tax regulations. This objective was accomplished in two parts. First, a knowledge-based environment was created to support the specialized task of an auditor - an environment that would assist the auditor in the investigation, reasoning and reporting of the tax issues. The second objective involves the implementation of a selected segment of the Federal Tax system to demonstrate the effectiveness of using knowledge-based systems to reason about tax law cases and to provide a measure of the extensibility of the tool.

Thesis Supervisor: Duvvuru Sriram
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Dedication

To my wife, who has always pushed me to my yet unfound limits.
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Chapter 1

Introduction

1.1 Background

During the past decade we have seen tremendous advances in computer software and hardware which have changed the way people and businesses function. However, these advances have done little to change the day to day activities of practitioners within the domain of tax law and auditing. It is true that the use of spreadsheet programs, report generators and database retrieval systems have reduced the amount of brute force work that is required during a tax audit, but little has been done to help with the most difficult part of the audit -- the part of the audit which requires cognitive thought. The interpretation of the formal rules and regulations of the Internal Revenue Code requires different kinds of reasoning processes. These include rule-based methods centered around antecedent-consequent representations of causality and case-based methods which involve analogical reasoning [7]. The practice of tax law can be defined as the art of identifying potential issues, interpreting the Internal Revenue Code and reaching a determination as to the deductibility or taxability of the issues in question. The quality of an audit depends upon the knowledge and the experience of the auditor.

The knowledge required to perform a quality audit is obtained by studying and acquiring information from a variety of sources, such as the Internal Revenue Code (IRC), revenue rulings, court cases, letter rulings, and experts. The information from these disparate sources must be synthesized into a mental picture or an understanding of the domain.

The experience that is needed to perform a quality audit can only be obtained through the practice of applying the principles learned in practical contexts that arise during an audit.

It takes a good auditor years to learn the tax law needed to perform his or her job. During this learning period mistakes are made, issues overlooked, and the quality of the audit suffers.

The interpretation of the formal rules and regulations of the Internal Revenue Code is a complex task. The complexity is derived from the characteristics of the tax law domain. The law is in a constant state of change which prohibits any one practitioner from keeping up with
all the changes. Also, the law is expressed in lengthy natural language passages which are often incomplete, ambiguous, and at times seem contradictory to a novice.

The Internal Revenue Code (IRC) can be considered semi-formalized. The provisions of the Code must be interpreted by the expert, who creates a mental picture or understanding of the tax law which can be used to solve real world problems. Interpreting the tax law becomes a classification problem. It is the auditor's responsibility to map the current situation into the rules of the IRC. The auditor accomplishes this by what we call researching the issue. Each audit situation does not neatly map into the IRC. Therefore, to solve the problem the auditor must go through hundreds of court cases, regulations, and decisions and try to find a precedent that closely matches the situation at hand. Additional complexity is added to the mapping problem because the auditor must analyze multiple pieces of information and consider their impact on the tax law with its many exceptions.

In addition to the complexity of the domain itself, the volume of the tax laws places a practical limit on the knowledge that any one auditor can possess and reason about. As a result, the domain becomes divided into smaller sub-domains, each with its own expert or experts. Because no one authority exists, auditors must either research the issue themselves or try to find an expert who can help solve their problem. Both of these alternatives waste valuable time.

The complexity of problem solving in this domain demonstrates the need for a tool that would help the auditor navigate through the maze of the IRC, regulations and legal precedents. A tool is needed that can bring together the knowledge from these disparate sources in one system that would be available to the auditor when needed. A knowledge-based expert system could capture this expertise, and in many cases do the job better than any single expert. The terms "knowledge-based system" and "expert system" will be used interchangeably throughout this thesis. Many times an expert can help you solve a problem but has forgotten some of the details or cannot fully explain the why and how of his problem solution. The fact that the
expert system can explicitly explain why and how it reached its conclusion is what distinguishes an expert system from an expert aid or decision support tools.

1.2 Objective

The objective of this thesis is to demonstrate the potential of knowledge-based expert systems for increasing the quality and productivity of a tax audit in a domain of ever-increasing complexity and volume of regulations. The study will focus on the feasibility of capturing the United States Federal Tax system in a knowledge-based system. To accomplish this objective the study will consist of two parts.

The first part is to design and build an environment that will support the specialized task of an auditor: a tool that will assist in the investigation, analysis, reasoning and reporting of income tax issues. It must provide an environment where the user can control every aspect of the program's execution. An additional requirement is that the system should run on an IBM-PC or a compatible computer.

The second part involves the implementation of a selected segment of the Federal Tax System. This will demonstrate the effectiveness of using a knowledge-based system to reason about tax law cases and provides a measure of the extensibility of the tool. The knowledge-base will consist of rules and facts which model the IRC.

The knowledge-based system is not designed to replace human experts, but to provide a tool that will eliminate drudgery. It is designed as a tool that will guide the user and provide the details of the operations that the experts will understand, but lack the skill to carry out without errors.

1.3 Scope

The domain of Federal Income Tax law is composed of thousands of laws and regulations which regulate our tax system. The laws affect both individuals and businesses covering hundreds of issues. This study is confined to the various deductions, credits, and income that
arise from using an automobile for business purposes. This particular issue is encountered frequently and the domain is broad enough to demonstrate the system's ability to capture and effectively manipulate a large body of knowledge.

Although this study was confined to the above mentioned issue, the tool has been designed to allow for future expansion. Additional knowledge-bases could easily be added to the system.

1.4 Thesis Organization

This thesis is organized into six chapters. Chapter Two discusses how and why knowledge-based systems could be used to increase the productivity of the auditors and improve the quality of an audit. This chapter will continue with a description of the knowledge-base selected for this thesis, including a discussion on knowledge acquisition and the choice of development environments.

Chapter Three describes the rules relating to the domain of the business use of a passenger automobile.

Chapter Four discusses the design and implementation of the development tool, hereafter referred to as the "Federal Income Tax Toolkit" (FITT). The evolution of the tool to meet the users' needs and performance requirements is described.

In Chapter Five the structure and implementation of the knowledge-base is explained and examples of a consultation with the FITT system provided.

Finally, the conclusion of this study is presented and the future of the FITT system is discussed.
Chapter 2

Tax Law and Auditing as a Task for Expert Systems

2.1 Introduction

In order to understand where and how expert systems can help in a tax auditing environment, a typical audit situation will be described (see Figure 1 - "The Auditing Process").

Figure 1 - The Auditing Process
The auditing process is a three-step process. The process begins with a review of the tax return for potential issues. Following this, an appointment is made to verify the issues identified. Finally, the information is reviewed for completeness and compliance with the applicable Internal Revenue Code Sections. At this point, the audit becomes iterative. If the information is incomplete, a follow-up appointment is scheduled to resolve any unanswered questions. When the information needed to support the audit conclusion has been gathered, the case is submitted to a review process. The case is first reviewed by the auditor's immediate supervisor followed by an additional review by the Review Staff (responsible for maintaining the quality and integrity of the audit). If any inconsistencies with the Internal Revenue Code are found, the audit cycle starts over again.

The time between the start and the finish of an audit could be significantly reduced if it were possible to reduce the number of cycles required to complete an audit. The author believes that this is possible with expert systems technology.

The tax auditing environment is ripe for this type of implementation for the following reasons:

[1] The process requires the analysis of objective and subjective information, and


There are issues that fall into a gray area, where a mix of objective and subjective information is required to support a conclusion. During the audit both types of information are gathered. These facts are analyzed by the auditor who determines whether or not the facts as presented are in compliance with the Internal Revenue Code and Regulations.

Many of the issues are so complex that there are few auditors who understand the implications of the pertinent regulations. These auditors have created audit procedures to help them solve the problem at hand. If this knowledge could be captured, it would mean less
experienced agents would be able to pursue these issues and learn the audit procedures at the same time.

Other issues require the consolidation of so many pieces of information, that the ability of the auditor to accurately complete the task is affected. An expert system would ensure that all the right questions are asked, improve the quality of the responses, and eliminate the need for costly follow-up appointments. In addition, behavioral research has indicated that auditors have difficulty in drawing inferences based upon multiple pieces of information in complex domains [5]. An expert system would help overcome these limitations.

2.2 Motivation for the Use of Knowledge-Based Systems

The use of knowledge-based systems technology will benefit any audit organization by:

[1] increasing the quality of the audit,

[2] accomplishing training objectives,

[3] improving the organization's public image, and


The quality of the audit will be improved by enforcing a consistent approach, free of the biases of individual auditors.

The knowledge-based system can simulate an audit situation and thus provide a training vehicle to less experienced persons operating in the field. The use of the system will familiarize them with the parameters needed to resolve an issue and provide them with an understanding of how an issue is developed.

The public image of the organization will directly benefit by increasing the quality of the audit and training of the auditors. When a mistake or an oversight occurs and is later identified by our Review Staff, the taxpayer must be contacted and appropriate adjustments made. This follow-up does not help the organization's image. The expert system would ensure that all the right questions are asked and documented during the first contact.
The system would provide the auditor with an interpretation of the law resulting in a more consistent, efficient, and less costly audit performed by better trained employees.

An additional motivation for creating an expert system is the issue of personnel turnover. By the time an agent masters the tax law for an issue, he or she either leaves the organization or is promoted. An expert system would accelerate the training of new auditors considerably.

2.3 Goal of the Knowledge-Based System

The goal of this knowledge-based system is to create an environment that would assist the auditor in coping with the multitude of audit situations encountered. To accomplish this goal the system must satisfy the following requirements:

[1] Coordinate the gathering of relevant information,

[2] Research the tax laws pertaining to the issue; an issue may address as many as ten Internal Revenue Code Sections and require further clarification by reading the appropriate regulations. The system will guide the agent through this research maze and identify the appropriate legal precedents.

[3] Identify the need for additional information to correctly support a conclusion. If the auditor is unable to supply the system with all the information needed, it will respond by indentifying the additional information needed.

[4] Incorporate "rules of thumb" of trained Revenue Agents that would identify:

   Where to find relevant information,

   What questions to ask, and

   Explain the alternative positions available.

[5] Permit the insertion of free-flow text whenever the user considers it necessary to make a note. The agent would be able to document special circumstances that would help support the parameters used in a conclusion.

[6] Reach a conclusion based upon the facts supplied by the agent, and the facts or hypotheses derived from the inferencing process.
[7] Create a final report summarizing the facts gathered and conclusions reached that would be used to document the audit conclusion.

[8] Finally, and most important of all, is the user interface. Since the system will be used by non-computer professionals, it should be simple and self-explanatory. The auditor should be able to maneuver through the system without the help of a complicated manual. To satisfy this specification, the user interface must permit the user to control the inference process at all times, allowing the auditor to interrupt or resume the consultation at any time. The interface must be highly interactive, offering help to the user.

2.4 Development of a Knowledge-Based System

2.4.1 Selection of the Domain

The domain of Federal Income Tax Law consists of thousands of laws, regulations, and court cases which regulate our tax system. This domain is actually a collection of smaller domains, each focused to regulate a specific area of taxation. For example, the domain of the business use of an automobile is one domain within the domain of Federal Tax Law; other domains govern areas such as: Business Expenses, Net Operating Losses, Installment Sales, etc..

For the purpose of this study, a knowledge-base has been created which captures a limited portion of the Federal Income Tax domain. The author began the search for a specific domain by interviewing auditors with two or more years of experience. The purpose of the search was to identify areas of tax law which were both difficult to administer because of its complexity and which occurred frequently. The issue selected focuses on the provisions of the Tax Reform Acts of 1984 and 1986 as it relates to the Business Use of a Passenger Automobile.

The Tax Reform Act of 1984 and 1986 made substantial changes to the rules governing the use of a passenger automobile for business purposes. The new law in this area has been
called a 'zoo' [1]. It is complex, and tax benefits can be inadvertently lost without careful planning. The automobile issue is a primary candidate for a knowledge-based system for the following reasons:

[1] It is an issue that auditors are confronted with every week.

[2] The issue is complex; it requires anywhere from one to eight hours to complete the task depending on the level of experience of the auditor.

[3] Less experienced auditors are examining the largest percentage of these issues.

The Internal Revenue Service publishes and distributes specialized publications which highlight and describe the operation of the various provisions of the tax system. Each publication discusses the rules and the tax implications of one tax issue. A rough measure of the amount of knowledge captured in the knowledge-base of this study would be obtained by comparing the number of publications included in this study to the total number of publications. Using this measurement, the knowledge-base includes approximately 1% of the total knowledge in the Federal Income tax domain (number of publications in the study divided by the total number of publications). Although this is a small portion of the total domain, the study demonstrates the feasibility of capturing independent "chunks" of knowledge and tool's extensibility to capture the entire domain of the Federal Income Tax system.

2.4.2 Knowledge Acquisition

The expertise needed for the expert system was provided by the author's experience as an auditor, interviews with experienced agents, and research of the issue using various trade publications as well as the Internal Revenue Code & Regulations.

2.4.3 Product Delivery Environment

2.4.3.1 Hardware
The information-gathering phase of an audit is normally conducted in the field, where hundreds of IBM-PC-compatible computers are available. Therefore, the FITT system was designed to run on an IBM-PC or a compatible computer.

2.4.3.2 Software

Several commercially available expert system programming environments for the IBM-PC were evaluated for use in developing the FITT system. Prototypes were developed using Personal Consultant Plus™ and GoldWorkst™. Each of the tools provided a powerful programming environment to demonstrate a concept, but were not adequate for a production system. The response time was unbearably slow, and the documentation was poor. User functions had to be defined on top of the existing environment and their implementation was awkward and time consuming.

The shells analyzed were too confining and did not give the developer the freedom to create the product as it was conceived. It was concluded, based upon the deficiencies and restrictions of the programming environments analyzed, that the FITT system would be written in Scheme. Scheme offers easy access to and manipulation of windows. In addition, a Mycin-like system was available in Scheme that served as a basic framework for the FITT system. Using this framework the FITT system was custom designed to fit all the specifications desired in the ToolKit.

2.5 Summary - Tax Law and Auditing as a Task for Expert Systems

The domain of auditing within Federal Income Tax Law poses some interesting problems for representing this knowledge in an expert system. The domain is complex and the audit techniques used by the auditors represent their individual interpretations of the law. These individual biases result in inconsistent applications of the law. In addition, the domain the vast and changes frequently. These characteristics make the process of auditing an appropriate task for expert system development.
Chapter 3
As Relating to Passenger Automobiles

3.1 Introduction

The tax law relating to passenger automobiles includes a variety of topics. The principal changes made by the Reform Acts were to place limits on the tax benefits previously available on luxury cars. The changes were made by Congress who felt that an abuse had developed in this area. The original intent of these tax benefits was the creation of capital formation. Taxpayers were taking advantage of the investment credit and cost recovery deductions on luxury automobiles which had the effect of Congress subsidizing an element of the personal consumption of very expensive automobiles. These changes to the tax law added an additional layer of complexity on top of a domain that was already difficult to administer.

The provisions of the law that govern the deductions and credits that arise from the business use of a passenger automobile fall into the following major areas:

[1] Vehicle provided by the employer
[2] Standard mileage rate
[3] Depreciation
[4] Section 179 deduction
[5] Investment credit
[6] Rules on leasing a car
[7] Partial business use

Each of these areas will be discussed and examples provided, if clarification is needed.

3.2 Vehicle Provided by the Employer

If an employer provides an employee with a vehicle, the fair market value of the use of that vehicle is considered a fringe benefit and must be included in the employees compensation.
The only exceptions to this rule are if the vehicle qualifies as a "working condition fringe" or a "non-personal use vehicle". The value of the compensation is the amount by which the fair market value of the benefit exceeds the amount the employee paid for the benefit. The value of the compensation will be determined using either the general valuation principles or one of the special valuation rules. The employee can choose either the same valuation method as his employer or the general valuation principles. A brief description of the valuation rules follows. The rules containing the details of these provisions of the automobile issue are located in Appendix B.2.

3.2.1 General Valuation Principles

The value for the use of an employer provided vehicle is equal to the amount an unrelated third party would charge a person to lease the same or comparable vehicle.

3.2.2 Special Valuation Rules

There are three special valuation rules, the Automobile Lease Valuation rule, the Vehicle Cents-per-mile rule, and the Commuting Valuation rule.

3.2.2.1 Automobile Lease Valuation Rule

Under this rule, the value of the benefit is equal to the annual lease value determined from a table look-up function Appendix C.2 [10]. This value would be pro-rated if the vehicle was not available the entire year. The pro-rated value would be determined by either pro-rating the annual lease value or the daily lease rate, whichever applies.

3.2.2.2 Vehicle Cents-Per-Mile Rule

Under this rule, the standard mileage rate is multiplied by the number of miles the employee uses the vehicle for personal purposes. If the employer does not provide fuel, the rates may be adjusted by up to 5.5 cents per mile. Two tests determine eligibility to use this rule - the "regularly-used-in-business" test or the "10,000 mile qualifying test" [10].
3.2.2.3 Commuting Valuation Rule

The fair market value of benefit provided to an employee for the use of a vehicle for commuting may be valued under this special rule if the following four tests are met:

[1] the vehicle is owned or leased by the employer and is used by an employee in the employer's trade or business;

[2] for bona fide noncompensatory reasons, the employer requires the employee to commute in the vehicle;

[3] the employer has established a written policy prohibiting personal use, and

[4] the employee required to use the automobile is not a "control employee".

The amount to be included as compensation is equal to $1.50 per one-way commute [10].

3.3 Standard Mileage Rate

Instead of figuring actual expenses for the business use of an automobile, the standard mileage deduction method is available. The amount of the deduction for 1987 is based upon the rate of 22.5 cents a mile for the first 15,000 miles of business use and 11 cents a mile for each additional mile. The rates of 22.5 and 11 cents a mile vary from year to year. In order to be eligible to use the standard mileage rate, this method must be elected in the first year the automobile is placed in service. In addition, you must own the car, not use the car for hire, and not operate a fleet of cars. If the car is "fully depreciated", the rate is limited to 11 cents a mile for the year 1987 [11]. The rules containing the details of these provisions of the automobile issue are located in Appendix B.4.

3.4 Depreciation

3.4.1 Introduction

Depreciation is a deduction that is allowed each year that represents a reduction in your car's value due to wear and tear. The Tax Reform Acts of 1984 & 1986 placed limits on the
amount of the depreciation deduction for passenger automobiles. There are several
depreciation methods available to compute the deduction. The choice of the depreciation
method used is dependent on the date the car was placed in service and whether or not the car
was used "predominantly for business". For cars placed in service in 1987, the modified
accelerated cost recovery system (MACRS) must be used to compute the deduction. For cars
placed in service from January 1, 1985 through December 31, 1986 the accelerated cost system
(ACRS) must be used. The rules containing the details of the depreciation provisions of the
automobile issue are located in Appendix B.1.

3.4.2 Modified Accelerated Cost Recovery System (MACRS)
3.4.2.1 MACRS Depreciation Methods

The MACRS method offers three methods of depreciations, the double declining
balance method, the straight line method and the alternative MACRS method. Under MACRS
an automobile is classified as 5-year property. However, the cost will generally be depreciated
over 6 years since in the year of acquisition only half of the normal rate is allowed, with the
remaining half allowed in the sixth year. The straight line and declining balance methods can
only be used if the automobile is used predominantly for business, otherwise the alternate
MACRS method must be used [12].

3.4.2.1.1 Double Declining Balance Method

The depreciation deduction for the first year is determined by multiplying the adjusted
basis of the vehicle (determined by reducing the cost of the automobile by the percentage of
personal use and any section 179 deduction) times 40% and applying the appropriate
convention - (either half-year or mid-quarter) to the result.

In the second and subsequent years, the new adjusted basis of the vehicle is first
determined subtracting from the basis the amount of personal use, the section 179 deduction
and the amount of depreciation previously taken. The new adjusted basis is then multiplied by
40%. For the fourth and subsequent years, when the straight line method is more beneficial than the declining balance method, the deduction is computed using the straight line rate. In last year of the "recovery period", the deduction is determined by following the appropriate convention - (either half-year or mid-quarter) [12].

3.4.2.1.2 Straight Line Method

The annual deduction using the straight line rate is based on a new depreciation rate for each year of the recovery period. The rate is determined by dividing the number 1 by the years remaining in the recovery period. The appropriate conventions must be applied when computing the first and last year deductions [12].

3.4.2.1.3 Alternate MACRS Method

The taxpayer can elect to use the alternate MACRS method, in lieu of the declining balance or straight line methods. Using this method, the deduction is based upon a modified straight line rate. Generally, for 5-year property, the rate is 20% a year, with the exception of the first and the last year, when the appropriate convention must be used [12].

3.4.2.1.4 Half-year Convention

The half year convention treats all vehicles either placed in service or disposed of during the year as if the vehicle was used for one-half of the year. This convention has the effect of allowing a deduction equal to one half of the yearly rate without regard to when the property was acquired or disposed. The half-year convention will be used to pro-rate the vehicles depreciation deduction for the first and last year, unless the the mid-quarter convention must be used [12].

3.4.2.1.5 Mid-quarter Convention
The mid-quarter convention must be used if you place property in service during the last quarter of the year and the total of this property is more than 40% of all property placed in service during the year. In determining the total of all property acquired during the year disregard any real property (generally anything that is erected on or attached to land) [12].

3.4.3 Accelerated Cost Recovery System (ACRS)

3.4.3.1 ACRS Depreciation Methods

The ACRS system offers two methods of depreciation: the ACRS method, and the alternate ACRS method. Unlike the MACRS system, the ACRS system does not allow any deduction in the year of disposition. In addition the deduction is computed based upon the unadjusted basis of the vehicle.

3.4.3.2 ACRS Method

The deduction is computed by multiplying the applicable recovery percentage for the year by the unadjusted basis of the vehicle. The half-year and mid-quarter convention do not apply to the ACRS method. The deduction is not pro-rated because the vehicle was not in service the entire year. The ACRS method can be elected only if the automobile is used "predominantly for business". The ACRS recovery percentages are: 25% for the first year, 38% for the second year, and 37% for the third year, subject to the maximum deduction limitations [12].

3.4.3.3 Alternate ACRS system

The alternate ACRS method is based upon the straight line method of depreciation and is used in place of the ACRS recovery percentages. Under this method, a recovery period of
3, 5, or 12 years can be selected. Using this method the half-year convention as described above must be used to determine the deduction for the first year and the last year [12].

3.5 Partial Business Use

If the vehicle is not used "predominantly for business", the section 179 deduction is not available and the depreciation must be computed using the straight line rate over a five year period (using the half-year convention). If the automobile was used "predominantly for business" in the year acquired, but in later years the "qualified business use" falls below 50%, an adjustment may be required to recapture the investment credit that was claimed as well any "excess depreciation" [11].

3.6 Section 179 Deduction

Generally, the cost of a car is a capital expenditure and a percentage of the total cost will be recovered each year the car is used for business purposes. Section 179 allows the taxpayer to elect expense a portion or all of the cost of a car, subject to the yearly limit. The car must be "predominantly used for business" to be eligible for the Section 179 deduction. If the car is not used "predominantly for business" in a future year, the benefit of the deduction must be recaptured to the extent of the "excess depreciation" [12]. The rules containing the details of the section 179 provisions of the automobile issue are located in Appendix B.1.

3.7 Investment Credit

An investment credit was allowed for cars acquired before 1986 that were used "predominantly for business". The credit is a reduction of the amount of the income tax liability on a dollar for dollar basis. For cars placed in service before April 3, 1985, the credit limit was $1,000 or if you elected the reduced investment credit, the limit was $667.67. These limits must be reduced if your business of the car is greater than 50%, but less than 100% [12].
The rules containing the details of the investment credit provisions of the automobile issue are located in Appendix B.1.

3.7.1 Basis Adjustment

If you did not elect the reduced investment credit, the "depreciable basis" of the car must be reduced by 50% of the credit claimed [12].

3.7.2 Recapture of Investment Credit

There are two situations in which you must "recapture" part or all of the investment credit claimed:

[1] If your percentage of business use of the car falls below the percentage of business use for the year the car was placed in service.

[2] If you dispose of the car.

If either of these situations occurs during the "recovery period" a percentage of the credit must be recaptured.

3.8 Rules on Leasing a Car

The Tax Reform Act of 1984 & 1986 imposed deduction limitations if you lease a car for business. The leasing rules generally limit the deductible portion of the yearly rent by requiring the lessee to include in income an "inclusion amount". This inclusion amount is a percentage of part of the fair market value of the leased car multiplied by the percentage of business and investment use for the year. Similar to the "excess depreciation" and investment credit recapture of automobiles owned, the lessee can be subject to an "additional income inclusion" if the leased automobile is not used "Predominantly for business". There are different rules for the "inclusion amount" and the "additional income inclusion" depending on the acquisition date of the automobile and these amounts are determined using look-up
functions in Appendix C.2 [11]. The rules containing the details of the leasing provisions of
the automobile issue are located in Appendix B.3.

3.8.1 Automobiles Leased between April 2,1985 and January 1,1987

An "inclusion amount" must be determined for any leased automobile with a fair market
value greater than $11,250. If the fair market value on the first day of the lease is greater than
$50,000 or investment credit was claimed, a formula must be used to calculate the inclusion
amount. If the fair market value is $50,000 or less the "inclusion amount" is "annual lease
value" is determined from a table [Pub 917]. For the first six years the inclusion amount is
determined as follows:

[1] Determine the dollar amount from the tables,
[2] Prorate the dollar amount for the number of days in the lease term included in the
tax year, and
[3] Multiply the prorated amount by the percentage of business and investment use for
the tax year.

For the seventh and later years, if the fair market value on the first day of the lease is
greater than $32,400 then the inclusion amount is equal to 6% of the fair market value over the
sum of $13,200 plus $4,800 multiplied by the number of tax years in excess of 3 years.

The "additional inclusion amount" must be calculated for any year the automobile is not
"predominantly used for business". If the fair market value of the automobile is greater than
$11,250, the "additional inclusion amount" is calculated by multiplying the "average business
and investment use" by the dollar amount determined from a table [11]. If the fair market value
of the automobile is less than $11,250, the "additional inclusion amount" is determined by
multiplying the fair market value of the automobile by the "average business and investment
use" and by the applicable percentage.

3.8.2 Automobiles Leased after 1986
An "inclusion amount" must be determined for any leased automobile with a fair market value greater than $12,800. The method of computation is as follows, which is applicable for every year but the last year of the recovery period:

[1] Prorate the dollar amount from the table for the number of days of the lease term included in the tax year,

[2] Multiply the prorated amount by the percentage of business and investment use for the tax year.

The inclusion amount for the last year of the lease is equal to the "inclusion amount" used for the preceding year.

3.9 Summary of the Tax Law as Relating to Passenger Automobiles

The Tax Reform Acts of 1984 & 1986 have imposed major changes affecting the tax deductions for automobiles used in business. The primary changes relate to the maximum limitations placed upon the deductions and the "predominant use test".

The maximum yearly limitations have virtually eliminated the tax benefits previously available for the business use of luxury automobiles. The depreciation deductions are generally limited to the deductions that would be available to an automobile costing $16,500 or less.

The "predominant use test" limits or denies the tax benefits that were previously available. In order to qualify for the tax benefits of investment tax credit and accelerated cost recovery deductions, the automobile must be used more than 50% in a "qualified business use". The "predominant use test" is used in all the deduction calculations and the failure to maintain a business use of more than 50% can cause a significant loss of tax benefits throughout the "recovery period" of the automobile.
Chapter 4

The "Federal Income Tax Toolkit" Development Shell

4.1 Introduction

FITT consists of four components:

[1] the inference engine which controls the search through the knowledge-base,
[2] the knowledge-base which contains all the rules that represent the expertise of the system,
[3] the user interface which communicates with the user, and
[4] the data structures which store the facts gathered from the user and inferences made by the system.

Figure 3. Overview of the FITT Environment
4.2 Inference Engine

The inference engine is the core of the system which uses the information obtained from the user, and the knowledge base to infer new facts and to reach a conclusion about its goals. It is a backward chaining rule based system. The choice of using a backward chaining system was dictated by the characteristics of the domain. The problem solving process is goal-driven. The process begins with a specific goal, i.e. to calculate the additional inclusion amount or investment credit recapture. He or she knows the methods needed to solve the problem, but lacks the details to accurately complete the task. A backward chaining system will guide the user from the goal to the conclusion by trying to use all the rules in the knowledge base which conclude about the desired goal. The part of the system that controls the search through the knowledge base is called the inference engine. It monitors the process, determining what information is needed to conclude the goal and communicates with the user.

The inference engine of FITT is based on the Mycin paradigm with a few modifications. The Mycin paradigm is one of the most well-developed, proven and powerful rule-based shells in the commercial marketplace; TI's Personal Consultant Plus™ uses this inference engine. The modifications have been made to improve the performance and reduce the complexity of the inference engine as well as provide a user interface which allows the auditor complete control over the inference process.

Mycin's inference engine is built around a context tree. The context tree provides a mechanism to conclude about multiple objects and keep track of the hierarchical relationships among them. This is a powerful but expensive feature, and one that is not needed for applications in the domain of income tax law. The context tree requires a tremendous amount of bookkeeping to determine the location of a rule or a parameter in the hierarchy, and the tracing of a rule or parameter can significantly affect the performance of the system in a large context tree.
Although the hierarchy of the context trees was eliminated, the idea of instantiating a new context was retained, but within one global environment. When a new goal is pursued, the user will be asked if he or she wishes to instantiate the new context and the user's response will control the instantiation of the next context. Each context has its own set of rules and parameters. This provides a way of breaking the knowledge-base into modules which facilitates the organization, development and maintenance of the knowledge-base. All the benefits of having individual contexts have been retained with the exceptions of multiple instantiation which, as mentioned earlier, is not needed for applications in the domain of Federal Income Tax.

The elimination of the context tree provided two immediate benefits: [1] increased the performance of the inference engine by eliminating the systems searching through the hierarchy, and [2] reduced the complexity of the rule base. For example, when writing rules, with a context tree, you must always be aware of your position in the hierarchy, because this determines which rules and parameters can be reached and used to reason about the problem. The context tree also requires the definition of each parameter within its context. Now, rules can be written and tested immediately. You do not have to define a parameter before you use it. This is especially useful for parameters that are needed to hold intermediate results or for any parameter that does not need some specially defined parameter property, i.e. a RANGE property which will identify the legal values for a user response.

4.3 Knowledge Base

The knowledge-base is composed of one or more rules sets depending upon the complexity of the problem and the number of different contexts needed to represent the problem space. For example, the FITT system in its final form will consists of multiple contexts at the top level and each context will devote itself to solving a particular tax issue (see Figure 2 - Overview of Business Use of the Automobile Issue).
For the purpose of this study, the top level context is the business use of automobile issue which expands to four contexts and each of these contexts can be further expanded. The contexts form a frame-like structure and can be organized in a hierarchy which will control the flow of the inference process.

Each context or rule set consists of three parts:

[1] the first part defines the goals and properties of the context,
[2] the second part the parameters or variables of the context will be defined, and

[3] finally, the expertise of the domain is represented in the form of IF-THEN-ELSE rules.

The following paragraphs will provide examples of these three parts.

Definition of Knowledge-Base Contexts

Investment Tax Credit and Cost Recovery Deduction Domain

(DEFINE ELEM-TABLE  '((YEAR-1)
(YEAR-2)
(YEAR-3)
(YEAR-4)
(YEAR-5)
(YEAR-6))

The elem-table defines the number of contexts within a particular knowledge-base. In this example, the knowledge-base was divided into six contexts, each context representing the knowledge that was necessary to reason about the domain through the life of the vehicle.

Definition of a Context

(YEAR-1

INITIALDATA (AUTOMOBILE-DATE)

GOALS ( ITC COST RECOVERY-DEDUCTION-1ST-YEAR

YEAR-2-FLAG)

The context is used to describe the properties or characteristics of the problem being solved. The context for the first year has two properties. The first property is an initialdata property. The purpose of this property is to control the beginning of a consultation with a user by establishing certain facts in the data structures. The user is asked for this information before the inference engine begins to search through the rule base. The second property establishes the goals that the inference engine should satisfy.
Definition of a Parameter

(AUTOMOBILE-DATE

UPDATED-BY (RULE-REFORMAT-DATE))

The parameter automobile-date has only one property - the updated-by property. When the inference engine tries to determine a value for this parameter, this property will be referenced, and the rule RULE-REFORMAT-DATE used. Other properties that a parameter may have are:

PROMPT - holds the question to be asked the user,
EXPECT - offers the user a list of possibles answers to a question, and
HELP - the user can ask the system for clarification of a question.
PRINT? - indentifies the parameter as one that should be printed by the report generator

Definition of a Rule

(MACRS-OR-ACRS-RULE

PREMISE

($AND

(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 870101)))

ACTION

(DO-ALL

(CONCLUDE MACRS-METHOD "NOT-APPLICABLE" TALLY 100))

ELSE

(DO-ALL

(CONCLUDE ACRS-METHOD "NOT-APPLICABLE" TALLY 100))

34
TRANSLATION "If the automobile was acquired after December 31, 1986, the MACRS method of depreciation must be used, if the automobile is acquired before January 1, 1987, the ACRS method must be used.

Every rule consists of at least two parts, the PREmise and the ACTION. The ELSE and the TRANSLATION are optional. If the facts as stated in the premise are true then the facts specified in the ACTION part of the rule will be concluded or added to the list of facts that the knowledge-base can use to satisfy the goal. If the premise is false, then the facts specified in the ELSE part of the rule will be added to the DBASE (KS). The TRANSLATION is useful in providing an English translation of the rule for use in the report generator and in answering HOW & WHY questions for the user.

4.4 User Interface

The user interface is one of the primary considerations affecting the choice of the development tool. Historically, auditors have been resistant to change, and to overcome this resistance, the tool had to flexible enough to create an environment that would encourage the auditors to use the system. A system that would be modular enough to grow with the users, yet flexible enough so that the developer could easily modify the interface responding to changes in the user's needs. Good screen design would be crucial to the user's acceptance of the system. In order to accomplish this, an interface had to be developed that would give the user complete control over the displayed as well as the printed output of the system.

4.4.1 Screen Display

For the screen display, the system would have to be flexible enough to support multiple windowing, giving the users complete control over the inference process. At any point in a consultation with the system the user could:
(a) ask for HELP,
(b) STOP and EXIT a consultation,
(c) SAVE a consultation, to be resumed later,
(d) ask WHY a parameter is needed,
(e) ask HOW a conclusion was reached, and
(f) DOCUMENT or clarify a fact that was supplied to the system.

The SAVE feature is a particularly important feature because it gives the auditors the ability to perform a "what if" analysis with the facts that were previously gathered and saved. The system gives the user the opportunity to change any of the facts and determine the effect on the conclusion. Since the introduction of PC's and spreadsheet programs, this is a feature that auditors have come to expect in a software product.

The DOCUMENT feature provides the auditor with the ability to make notes during a consultation. These notes will provide an explanation of the auditors response to a question or the auditor could use this as a place to record a mental note. For example, an important element in the computation for the deduction of the business use of an automobile is the business use percentage. It is the auditors responsibility to verify the taxpayer's calculation of this percentage and it is the taxpayer's responsibility to maintain "adequate records" or sufficient evidence that will corroborate the percentage used. The auditor must explain what audit procedures were used and how the taxpayer supported his position. The answer alone is not sufficient. This feature provides the auditor with a facility for associating his or her explanations with the facts gathered during a consultation.

The SAVE and DOCUMENT features work together to enhance the "what if" capability of the system. During the audit of complex issues, it is necessary and important to determine the impact of alternative audit strategies. Using the SAVE and DOCUMENT features, the alternative strategies would be automatically documented during this iterative analysis and saved so that the results could be compared [Graham 86].
4.4.2 Printed Output

The printed output of the consultation would serve as the auditor's audit workpaper. This report would document the facts gathered and be able to explain how the system reached its conclusion. It is not enough for the auditor to obtain the correct answer; he must be able to justify his conclusions. To accomplish this a report generator was added. The addition of the report generator to the system was greatly facilitated by the separation of the inference engine from the knowledge-base. The separation of the knowledge from the inference process enables us to use this knowledge for multiple uses.

4.5 Knowledge Structures

At the end of a consultation the system has two data structures (DS) available: [1] the answers (DS) - a list of the answers that were provided by the user, and [2] the dbase (DS) - a list of all goals & parameters which the system inferred values about during the consultation. In addition to the parameter name and value of the parameter, the structure also has available the rule or rules which were used to infer about the goal. These data structures provide the information needed by the report generator.

Special functions were written which analyze the answer and dbase DS's. These functions filter the data structures for parameters and goals which have been designated as parameters that the user wants printed. The report generator then prints a report organizing the results of a consultation, by printing: 1) the facts gathered from the user, 2) the facts that were inferred with an English translation of the rules that inferred these facts, and 3) printing any documentation notes or comments made by the user.

The following examples illustrate the two data structures and the information they contain: the answers (DS) and the dbase (DS).
Answers (KS)

((automobile-date 12/31/86 1) .....)

The answers (DS) is a simple list structure. Each entry or answer is represented by its own list composed of three parts - the parameter name, the parameter value, and the confidence factor.

Dbase (DS)

(*PARMS* ((automobile-date-acquired ((861231 1)) rule-reformat-date)))

The dbase (KS) is a headed list and structure of the list is more complex. Each entry or inferred fact is represented by its own list which contains: 1) the parameter name, 2) a list which could include several lists with each list containing a value and a confidence factor, and 3) the rule that was fired to infer the fact.

4.6 Description of the Tax Toolkit's Operation

The following example will be used to demonstrate a sample consultation with an auditor.

Example:

George Murphy purchased a $30,000 automobile on December 1, 1985, for use in his sole proprietorship. In 1984, George uses this auto 40 percent for business, 20 percent for the production of income, and 40 percent for personal use. Because George does not use the the auto for more than 50 percent in his business, he may not claim the investment credit with respect to the purchase and he must recover the applicable cost using the straight-line method over a 5-year period. In computing his deduction for 1984, however, George is allowed to combine his business and production of income percentages.
Thus, his 1984 deduction is $1,800, computed as follows:

$30,000 \text{ cost} \times 10\% (\text{the straight-line recovery rate for 5 years adjusted for the half year convention}) \times 60\% (\text{the combined business and production of income percentages}).

The session begins by giving the auditor the choice of selecting from a previous consultation or starting a new one. In this case, two previous sessions were saved - test.ex1 and test.ex2. The auditor will start the example session by selecting NEW.

If the auditor had selected one of the previous consultations, the answer (DS) would be loaded. At this point the auditor has the opportunity to change any of the previous answers and run the consultation to determine the impact of the change.
The next screen offers the auditor a choice to select one of the four automobile knowledge-bases. In the example, George Murphy is calculating his deduction using the investment tax credit and depreciation rules. The selection of the knowledge-base causes the system to load the appropriate file from the disk and start the session.

Federal Income Tax Toolkit

Interface

Select the issue you would like to pursue:

Vehicle-provided-by-employer
Standard-mileage-rate
Investment-credit\&depreciation
Rules-on-leasing-a car
Previouly-loaded


The auditor is first asked to enter the date the automobile was acquired. The knowledge-base has the ability to make the appropriate calculations for automobiles acquired from January 1, 1985 to the 1987 tax year and beyond (based upon the provisions of the tax law at the time of this writing). The date is critical in determining that the proper tax laws are used.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question

Enter the date the automobile was acquired? 
For example: If the automobile was acquired April 3, 1985: 
Enter-> 4/3/85

-> 1/12/85

Other Responses

CHANGE DOCUMENT HELP SAVE EXIT
The date that the automobile is disposed of is also a critical date. Special provisions of the law must be applied in the year an automobile is disposed. This example is limited to one year, therefore the response is NA (not applicable).

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
Enter the date the automobile was disposed?
For example: If the automobile was acquired April 3, 1985:
Enter-> 4/3/85
--> NA

Other Responses
CHANGE DOCUMENT HELP SAVE EXIT

The auditor is prompted for the cost of the automobile.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
What is the total cost of the automobile?
--> 3000

Other Responses
CHANGE DOCUMENT HELP SAVE EXIT
The business use percentage must be determined. The auditor is given a choice of four different methods to obtain this value. The OTHER method is selected.

**Federal Income Tax Toolkit**

**Depreciation - Assets placed in service after 12/31/84**

**Question**
- What method was used to calculate BUSINESS-USE?
  - MILEAGE
  - DAYS-OF-THE-WEEK
  - BUSINESS-USE-100%
  - OTHER

**Other Responses**
- CHANGE
- DOCUMENT
- HELP
- SAVE
- EXIT

Using the OTHER method, the "business use" % and the "production of income" % must be supplied to the system. In this screen the auditor asks for help in determining the value for this parameter.

**Federal Income Tax Toolkit**

**Depreciation - Assets placed in service after 12/31/84**

**Question**
- Enter the business use %:
- For example: If the % is 80% - Enter -> 80

**HELP**
The use of an automobile for the production of income use does not count for purposes of determining the business-use %.
The auditor next selects the DOCUMENT option and enters his explanation of how the business use % was determined and then continues to the next screen to enter the business use percentage.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
Enter the business use %:
For example: If the % is 80% - Enter -> 80

-->

CHANGE DOCUMENT HELP

While detailed mileage records were not kept at the time, a subsequent sampling showed that the Avg. monthly mileage was 1000 miles of which 400 miles were business miles.

George's business use percentage is 40.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
Enter the business use %:
For example: If the % is 80% - Enter -> 80

--> 40

Other Responses
CHANGE DOCUMENT HELP SAVE EXIT
George's production of income use is percentage.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
Enter the production of income use %:
For example: If the % is 80% - Enter -> 80
--- > 20

Other Responses
CHANGE DOCUMENT HELP SAVE EXIT

At this point, the system has the information needed for the first year calculations and prompts the auditor to determine if he wishes to continue.

Federal Income Tax Toolkit

Depreciation - Assets placed in service after 12/31/84

Question
Would you like to examine the tax consequences of the business use of the automobile for the second tax year?
YES
NO

Other Responses
CHANGE DOCUMENT HELP SAVE EXIT
By responding NO, the last screen of the session is displayed with the SAVE and PRINT options.

Federal Income Tax Toolkit

Question
Would you like to SAVE or PRINT the results of this consultation?

SAVE
PRINT
CONTINUE

The selection of the PRINT option causes the report on the next page to be printed (see Figure 3). Finally, by selecting CONTINUE the system returns back to the first screen.

To following is an overview of a typical session. A session begins by offering the user a choice of either consulting with a previous consultation or starting a new one. The Toolkit has been designed to accommodate many knowledge-bases. Each knowledge base is stored in its own file or files depending upon the number of contexts within the knowledge-base. After the user selects a knowledge-base the consultation begins. The user can at any point in a session ask for HELP or stop and SAVE the session to continue later or DOCUMENT or exit the system. At the end of the consultation the user can SAVE or PRINT the results of the session. Upon exiting from this prompt, the user is brought back to the beginning prompt.
Automobile-Cost 30000
Business-Use-Method Other
Automobile-Date 1/12/85
Cost-Recovery-Deduction-1ST year 1800.
Maximum-Cost-Recovery-First-Year 3200
BUSINESS-USE-% 40
PRODUCTION-OF-INCOME-% 20

MACRS-METHOD NOT APPLICABLE
The rate of 10% has been applied to the adjusted basis of the automobile in computing the first year deduction. The Section 179 was not elected. The Alternate rate is based upon a modified Straight Line method using a 5-year life, half-year convention, applying the same rate for each of the remaining years. This method must be used if the business use rate is less than 50%, however, the taxpayer has the option to elect it.

FIRST-YEAR-RATE 0.1
The rate of 10% has been applied to the adjusted basis of the automobile in computing the first year deduction. The Section 179 was not elected. The Alternate rate is based upon a modified Straight Line method using a 5-year life, half-year convention, applying the same rate for each of the remaining years. This method must be used if the business use rate is less than 50%, however, the taxpayer has the option to elect it.

ITC NOT COMPUTED
B&P-USE-1ST-YEAR 0.6

DOCUMENTATION
While detailed records were not kept at the time, a subsequent sampling showed that the average monthly mileage was 1000 miles of which 400 miles were business.

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Figure 3. - A sample FITT report
Chapter 5
Implementation of the Knowledge-Based System

5.1 Introduction

The business use of the automobile knowledge-base is designed taking advantage of FITT's ability to organize the rules by context. This frame-like structure makes it easy to organize and maintain the knowledge. Each issue has its own context. For example: Consider the "Business Use of the Automobile" issue. It is comprised of four major areas. These major areas each have their own context or rules sets:

[1] Investment tax credit and accelerated cost recovery issues,
[2] Leasing issues,
[3] Personal use of company car issues,
[4] Standard mileage rate, and

This chapter begins by discussing the methods used to control the direction and depth of the consultation. This will be followed by a description of how the first three of the automobile knowledge-bases were implemented. The discussion of the investment tax credit and accelerated cost recovery issues will detail the implementation process. The remaining issues will be discussed to the extent that these issues had different implementation problems.

5.2 Control of the Depth and Direction of a Consultation

The direction of the consultation is controlled by using DUMMY parameters. The use of the Dummy parameters forces an instantiation of a context which in turn establishes goals for the system to satisfy. The system was created using several contexts to modularize the rules into rule sets that would process the data very much in the way a human expert would.

The depth of a consultation is controlled by asking the user of his intentions before instantiating a new context. The user can control the depth of the consultation by appropriately
responding to these prompts. This process can best be described following a sample consultation through the context structure.

A consultation begins by the auditor selecting the issue he or she would like to develop and the system would force control into the appropriate context for the issue selected. If the context for the investment tax credit and cost recovery deductions was instantiated the following goals would have been established: ITC, COST-RECOVERY-DEDUCTIONS-1ST-YEAR, and YEAR-2-FLAG. (see FIGURE 4 - Context Structure for ITC & CRD)

CONTEXT - YEAR-1
GOALS - ITC, COST-RECOVERY-DEDUCTION-1ST-YEAR
YEAR-2-FLAG

CONTEXT - YEAR-2
GOALS - ITC-RECAPTURE, ACRS-RECAPTURE
COST-RECOVERY-DEDUCTION-2ND-YEAR
YEAR-3-FLAG

CONTEXT - YEAR-6
GOALS - ACRS-RECAPTURE
COST-RECOVERY-DEDUCTION-6TH-YEAR

FIGURE 4 - Context Structure for ITC & Cost Recovery Issues
The system would then find all rules that could satisfy these goals and proceed to evaluate each rule until either the goal has been found, all rules has been tried, or the user wishes to end a consultation. Before the context for the second year is instantiated the auditor is asked if he or she wishes to continue, the auditors reply controls the depth of the consultation. If the auditor were to instantiate the context for the second year, the goals for that context would be established and the inference engine would try to satisfy these goals.

5.3 Investment Tax Credit and Accelerated Cost Recovery Issues

The system calculates the correct investment tax credit (ITC) and cost recovery deduction (CRD) for a passenger automobile, and tracks the asset through its "recovery period". The knowledge-base for this issue was organized into six contexts. Each context representing one year in the "recovery period' of the automobile and the rules in that context capturing the knowledge needed for each of those recovery period years. The rules for ITC and CRD are substantially different from year to year which made it imperative to divide the knowledge base into smaller and more meaningful "chunks" of knowledge.

The system begins by questioning the auditor to obtain the information needed to compute the ITC and CRD for the first tax year. The auditor is then given the option of stopping the consultation or continuing into the second year to determine if the change in business use vs. personal use has triggered any recapture (pay back) of ITC or "excess depreciation". The system continues with the analysis applying the depreciation principles in the knowledge-base until the automobile is sold or until the end of the vehicles recovery period, whichever occurs first. Even if the automobile is fully depreciated, it must be tracked to the the end of the recovery period, because a change in the automobile's business use percentage can trigger the recapture of ITC and "excess depreciation" at any time. At the end of the consultation the auditor will receive a report showing the correct ITC & CRD accompanied by an explanation to support the conclusions reached.
The rules for this portion of the knowledge-base were complicated by the many exceptions to the general rules for ITC and CRD. Rules had to be written to account for the following exceptions:

[1] early disposition of the vehicle,
[2] half year convention,
[3] mid-quarter convention,
[4] recapture of excess depreciation,
[5] changes in methods triggered by the failure to maintain the vehicle "predominantly for business", and

A calculation of the investment tax credit and the cost recovery deduction could have one or all of these exceptions apply at any point in time; therefore, a careful orchestration of the rule interaction was required. The following example which is adapted from the article "Finding Your Way Through The Luxury Car Zoo" [1] illustrates the complexity of the issue and highlights the major points that must be considered when integrating the business use rules with the luxury car rules.

**Example:** Sally Murphy purchased an $18,000 automobile on October 15, 1985, for use in her sole proprietorship. She uses her car 80 percent in her business and 20 percent for pleasure the first year. Sally elects to take the reduced investment credit in lieu of the basis adjustment. The amount of the investment credit is $534, computed as follows:

(1) Find the lesser of:

4% ITC rate X $18,000 cost = $720, or

$667, the ITC maximum when the reduced rate is elected which is $667.
(2) The $667 is then multiplied by the 80 percent business use percentage, which is $534.

The cost recovery deduction for 1985, using the ACRS method, is $3,200, computed as follows:

(1) Find the lesser of--

$18,000 unadjusted basis \times 25\% \text{ ACRS rate} = 4,500, \text{ or}

$4,000, the maximum cost recovery in the first year.

(2) The $4,000 is then multiplied by the 80 percent business use percentage.

The cost recovery for 1986, assuming a continued 80 percent business use, is $4,800, computed as follows:

(1) Find the lesser of--

$18,000 unadjusted basis \times 38\% \text{ ACRS rate} = 8,100 \text{ or}

$6,000, the maximum subsequent year recovery amount.

$6,000 \times 80\% = 4,800.$

This is pretty easy so far. But in 1987, Sally's business use percentage drops to 45 percent. Because the usage drops to a business use percentage of 50 percent or below, the car ceases to be qualified ITC property as of the first day of the taxable year. As a result, Sally must recapture, in 1987, $352 of the ITC originally taken. The calculations are:

(1) Recapture percentage = 66\% \text{ (since asset was held for more than one but less than two years).}

(2) $667 original limit \times 80\% \text{ decline in business use} \times 66\% \text{ recapture percentage} = $352.

In addition, Sally must recapture the excess depreciation taken in prior years since the business use of the property is no longer greater than 50 percent. This amount is $3,680, computed as follows:

(1) Deductions actually taken = $8,000;
(2) Deductions that should have been taken using straight-line depreciation over 5 years

\[= 4,320 \times \left(18,000 \times 10\% + 18,000 \times 20\% \right) \times 80\%.
\]

\[8,000 - 4,320 = 3,680.\]

However, she is able to take a 1987 deduction of $1,620 ($18,000 \times 20\% \times 45\%).

Thus, her net 1986 position is a $2,060 addition to ordinary income. This is a stiff penalty for failure to keep the business use percentage in the qualified range [1].

The example demonstrates the complexity of the rules and the need to be careful in identifying the appropriate rules to apply. There are two additional rules to mention that were not applicable in this example. First, the Section 179 deduction, any deduction made under the election to expense business property is subject to the luxury auto and qualified business use limitations in the same manner as cost recovery deductions. Thus, the new restrictions cannot be avoided by making an election to expense. Second, for tax years after 1986, the additional complexity of "half-year" and "mid-quarter" conventions must be applied, prorating the yearly deduction by a percentage as defined in the convention rules.

The following list contains the parameters that were inferred and the rules which fired during the above example consultation. The rules that fired can be found in Appendix B.1.

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOMOBILE-DATE-ACQUIRED</td>
<td>RULE-REFORMAT-DATE</td>
</tr>
<tr>
<td>BUSINESS-USE-1ST-YEAR</td>
<td>BUSINESS-USE-RULE001</td>
</tr>
<tr>
<td>B&amp;P-USE-1ST-YEAR</td>
<td>BUSINESS-USE-RULE001</td>
</tr>
<tr>
<td>ITC</td>
<td>RULE002</td>
</tr>
<tr>
<td>AUTOMOBILE-BASIS</td>
<td>RULE002</td>
</tr>
<tr>
<td>AUTOMOBILE-BASIS-BEFORE-179-ADJ</td>
<td>RULE002</td>
</tr>
<tr>
<td>FIRST-YEAR-RATE</td>
<td>RATE-RULE001</td>
</tr>
<tr>
<td>MAXIMUM-COST-RECOVERY-FIRST-YEAR</td>
<td>MAX-COST-RECOVERY-RULE002</td>
</tr>
<tr>
<td>COST-RECOVERY-DEDUCTION-1ST-YEAR</td>
<td>DEDUCTION-COMPUATION-YR-1</td>
</tr>
</tbody>
</table>
5.4 Leasing Issues

The inference process of the system for the Leasing Issue is very similar to the previous issue. The system begins by questioning the auditor to obtain the information needed to compute the "inclusion amount" for the first year. The auditor is then given the option of stopping the consultation or continuing into the second year to determine if the change in business use has triggered any "additional inclusion amount". Several user defined LISP functions were written to implement the table look-up's for the "inclusion amount" and the "additional inclusion amount". The various table look-up functions are located in Appendix C.2.

5.5 Personal Use of Company Car Issues

The system determines the taxable amount to be included in the employees income for the FMV of the use of a company car. The questioning process begins by giving the auditor a choice between four optional methods:

1. General-Principles
2. Automobile-Lease-Valuation
3. Cents-Per-Mile
4. Commuting-Valuation

Each method has its own context which will be instantiated by the selection process.

A table look-up function was defined to determine Annual-Lease-Value of a automobile (see Appendix C.2). The look up would compare the FMV of the automobile to a table containing a range of FMV's as follows:

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<table>
<thead>
<tr>
<th>FMV of Automobile</th>
<th>Annual Lease Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - 999</td>
<td>$600</td>
</tr>
<tr>
<td>$1,000 - 1,999...</td>
<td>$850...</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>$58,000 - 60,000</td>
<td>$15,250</td>
</tr>
<tr>
<td>$60,000 - over</td>
<td>(.25 * FMV) + $500</td>
</tr>
</tbody>
</table>

Figure 5 - Annual Lease Value Table [10]

In order to accomplish the search of this table, a LISP function was created to scan a list composed of the low and high ranges of FMV's and return the Annual-Lease-Value. For FMV's greater than $60,000 a special case was made to compute the ALV by the above formula. This knowledge was included in a function rather than in rules for efficiency reasons. It would require many extra rules to capture the knowledge of this table into a rule format.

5.6 Special Functions

Perhaps the most important piece of information in the analysis of any tax issue is the date. For example, in order to correctly determine the depreciation, it is necessary to know not only the year an asset was acquired, but the day, month, and the number of days the vehicle was held during the year of acquisition and the year of disposition. In order to provide this information to the system, a lisp function was written which would perform various string manipulations to obtain the date information needed by the knowledge-base. This function would replace the multiple questions that would have been required to obtain the same information from the user. The special date functions are located in Appendix C.1.

5.6 Summary of Implementation
The process of building the knowledge-base was slow and deliberate. The most difficult part of the process was extracting the knowledge in the detail needed to write the rules. The process was painfully iterative. The knowledge was acquired in small "chunks" which would then be encoded into the knowledge-base. Although it was a slow process the problem worsened with the acquisition of new rules which affected the rules previously acquired. A significant part of the knowledge acquisition process involved re-writing the old rules to conform and work in harmony with the new rules.
Chapter 6
Summary & Conclusion

6.4 Summary of FITT

Problem solving in the Federal Income Tax domain requires the use of multiple resources. The auditor must:

[1] research the issue, using the Internal Revenue Code, regulations and court cases to establish a precedent to resolve the issue at hand,

[2] gather the information needed to support the audit conclusion,

[3] perform the necessary computations to test the validity of the issue under examination, and

[4] create a report, summarizing the results of the audit process which will document the audit procedures performed and the conclusions reached.

FITT represents an effort to bring together, in one environment, all the tools that the auditor uses in problem solving. A tool with these abilities is very important to an auditor in the field. The auditors are frequently working at a taxpayer's site and do not have the resources of a co-worker to discuss the issue at hand or access to research materials. FITT guides the auditor through the information gathering process, efficiently directing the auditor and highlighting the importance of information requested. The FITT system has captured the provisions of the tax law for the "Business Use of an Automobile" which represents a significant portion of the Federal Income Tax domain and has demonstrated its ability to effectively reason about the tax domain in a PC environment.

6.2 Capabilities and Limitations of FITT as a Knowledge-Based System

Although FITT will not solve all of the auditor's problems, it has the potential to greatly enhance their capabilities. However, before this system can be implemented many
questions and problems need to be resolved. The FITT system must undergo some testing to determine:

* How it is received by the users?
* What do they like about the tool?
* What they dislike about the tool?
* How can it be improved?

Additional issues must be identified that are both complex and occur frequently. A place to start might be to study the type of issues that frequently returned by Review Staff. A high error rate would indicate that these issues are complex and the auditor's are having difficulty in applying the provisions of the law. An expert system might help reduce this error rate.

The choice of using TI's Scheme as a development environment has proved to be an excellent choice. Scheme provided all of the functionality needed to accomplish the programming objectives of this study. It has both an interpreted and a compiled mode which provides the programmer with a good development environment as well as performance. However, the final decision on a production development environment will be postponed until the results from testing the system are finished.

The deployment of the system is perhaps the most difficult aspect of the development process. It is not enough to have a good product. The user community must be educated and the benefits of the product demonstrated. This can be slow process, even with the support of top management. It will evolve through a continuous cycle of modifications to tailor the product to the user's needs, thus, to a certain extent the work has just begun.

Before discussing the limitations of FITT, it is appropriate to discuss knowledge-based systems in general. The purpose of a knowledge-based system is to capture expertise in a system that could:

[1] solve the problem,
[2] explain the result,
[3] learn,
[4] restructure knowledge,
[5] break rules,
[6] determine relevance, and

FITTT exhibits only the first two qualities and as such, could not really be called an expert. However, the domain of Federal Income Taxes is an unusual domain that does not require a significant amount of real world knowledge or common sense. In fact, using common sense to reason about tax problems often leads to the wrong result. Problems must be solved by strictly following the rules of the domain. This fact leads to the conclusion that it might be possible to capture all the expertise needed to reason about this domain in a knowledge-based system. The only limitation would be making the system robust enough to handle all possible situations or exceptions to the general rule. The tax domain is a finite domain and with the addition of learning, creating what might be called a "Society of IRS Audits", it might be possible to approach near expert performance.

6.3 Suggestions for Future Work

FITTT is based upon the assumption that the auditor knows the methods needed to solve the problem but lacks the details. However, it falls short of the kind of system that we would like to model. What is needed is a system that can learn about its world, store this knowledge, and use it to solve future problems that are similar to the current problem. This system would learn from each audit experience, just as an auditor learns and is able to develop "gut" feelings about how to pursue a particular issue. The system needs a memory or the ability to recognize prior situations as being similar to the current situation. This memory would quickly create a
focus and eliminate unproductive effort. This focus would help guide the auditor down an appropriate path (i.e. the path with the greatest audit potential).

If the system had a memory of prior audits, it would be able to guide the auditor in new situations, situations where the auditor did not know the methods to apply. The memory would consist of the facts, precedents, and the audit results measured in some qualitative and quantitative manner. An example will help clarify this problem. Let the issue under consideration be: Business Expenses. The rules that guide the acceptance or disallowance of business expenses are very simple. The expense must be both ordinary and necessary and this is where the problem begins. How do you define ordinary and necessary? The definition of these requirements can vary widely from person to person and business to business.

The memory for the FITT would be based upon the principles outlined in Marvin Minsky's "The Society of Mind". It would be composed of frames at the lowest level. These frames would be represented by AND-type agents. For example, we would be able to recognize a business expense issue when the ordinary AND necessary agents have been activated by appropriate sensory input. This activation will be accomplished by the agent's memorizer. Each agent (i.e. ordinary agent, necessary agent) will have memorizers that have learned how to respond to an input.

Building upon the ideas of AND-agents and memorizers, "The Society of Mind" suggests a way in which intelligence can emerge from these simple parts. The process will begin with some sensory input. In an audit situation, this input would be the information that is presented on the tax return. Each fact will be considered an agent which has the ability to send a signal. Each signal by itself is meaningless, but many of the signals can combine to create a focus. This signal will be sent to every agency in the "society" and each agency will respond based upon what their memorizers have learned. These agents will have the effect of arousing every memory with facts similar to the current situation. Once a memory is aroused, it will be able to describe what precedents were used, how the current facts differ from the memory, audit procedures that were employed, etc. The beauty of this approach would be its
ability to recognize all the potential issues that might be possible. Every memory that is aroused will respond giving the auditor an opportunity to consider all possible approaches to each issue and possibly uncovering some issues that may have gone unnoticed.

The ability to recognize all potential issues creates another problem. How do you select the issue which most closely matches the current situation? Two approaches can be considered for handling this matching process: [1] LOCKING-IN AND WEEDING-OUT, and [2] WEIGHING EVIDENCE. Although both of these methods are imperfect, within the limited domain of Federal Income Taxes, either one of these approaches may prove to be sufficient to develop a context or focus. In addition, Censors would be useful as a negative recognizer. They could assist in filtering out the bad solutions, preventing us from making the same mistake twice [6].

As each audit situation is processed by the system, it will learn. It will build recognizers to assist in the problem solving process. Many of the situations are similar enough that some generalizing may be accomplished. This would help reduce the number of possibilities to be considered. Situations that are unique or exceptions will be added to the list of recognizers, providing the flexibility needed to respond to a unique situation in the future.
References


Glossary of Terms

Additional income inclusion. If the leased car is not, or ceases to be, used predominantly in a qualified business use, the lessee must also take an additional inclusion amount into gross income for the first tax year the car is not used predominantly in a qualified business use.

Excess depreciation. Any excess depreciation must be included in gross income and added to the car's adjusted basis for the first tax year in which the car is not used more than 50% in a qualified business use. Excess depreciation is the excess, if any, of: (1) the amount of the depreciation deductions allowed (including any section 179 deduction) for the car for tax years in which the car was used more than 50% in a qualified business use, over (2) the amount of the depreciation deductions that would have been allowable for those years if the car had not been used more than 50% in a qualified business use for the year it was placed in service.

Fair market value. Is the value on the first day of the lease term. If the capitalized cost of a car is specified in the lease agreement, that amount is treated as the fair market value. Fair market value is the price at which the property would change hands between a buyer and a seller, neither being required to buy or sell, and both having reasonable knowledge of all the necessary facts. Sales of similar property on or about the same date may be helpful in figuring the fair market value of the property.

Fully depreciated. If you use the standard mileage rate, the car is considered fully depreciated after 60,000 miles of business use at the maximum standard mileage rate. For this purpose a car is considered to have been driven no more than 15,000 business miles in any one year, even though the actual business mileage may be more. If your car is fully depreciated, you may deduct only 11 cents a mile for all miles of business use.

Inclusion amount. Is based on the fair market value of the car and the lessee's business/investment use. An amount must be included in the lessee's gross income for each year the car is leased, whether or not it is used 100% for business/investment purposes.

Nonpersonal use vehicle. Your total use of a qualified nonpersonal use vehicle qualifies as a working-condition fringe and, therefore, 100% of the value of that use is excluded from
your income. A qualified nonpersonal use vehicle is any vehicle that is not likely to be used more than minimally for personal purposes because of the way it is designed. Qualified nonpersonal use vehicles include: (1) clearly marked police and fire vehicles, (2) unmarked vehicles used by law enforcement officers if the use is officially authorized, (3) ambulances used as such or hearses used as such, (4) any vehicle designed to carry cargo with a loaded gross vehicle weight over 14,000 pounds, (5) delivery trucks with seating only for the driver, or only for the driver plus a folding jump seat, (6) passenger buses used as such with a capacity of at least 20 passengers, (7) school buses, (8) tractors and other special purpose farm vehicles, and (9) such other vehicles as the Internal Revenue Service may designate.

Predominant use test. See "predominantly used for business"

Predominantly used for business. Listed property is predominantly used in a qualified business use for any tax year if the business use percentage is more than 50%. The percentage of investment use of listed property is not part of the percentage of qualified business use for purposes of the more than 50% test. However, the combined total business and investment use is taken into account to figure the depreciation deductions for the property. Property does not cease to be used predominantly in a qualified business use by reason of a transfer at death.

Qualified business use. Any use in your trade or business. Qualified business use does not include use of property held merely for the production of income (investment use). However, after you have satisfied the percentage of business use requirement, you may combine your business and investment use to compute any allowable credit or deduction for a tax year.

Recapture period. For investment credit starts on the first day of the month you placed the car in service and, for a car that is depreciated using ACRS, continues for 3 full years after that day. For a car you elected to exclude from ACRS depreciation, the recapture period continues through the end of the useful life you used to figure your qualified investment.

Unadjusted basis. The amount you would use to figure gain on a sale not reduced for any depreciation but reduced by the amount you properly amortize or by the amount you elect to deduct as the section 179 deduction. If you buy the car, your unadjusted basis is usually its cost to you minus any section 179 deduction you elect. If you use your car only partly for business, and the business use percentage changes from year to year, you will have to refigure your unadjusted basis each year. Do this by multiplying the cost of the car by the percentage of
business use for the current year. From this result, subtract the section 179 deduction you took in the year you placed the car in service. You also may have to reduce your unadjusted basis if you claimed the investment credit in the year you placed the car in service.

**Working condition fringe.** Any property or service provided to you by your employer that you could deduct as an employee business expense, if you had paid for the property or service. The use of an employer-provided vehicle in that employer's business is a working condition fringe and is not included in your income. However, if you also use that vehicle for commuting or other personal purposes or use it in another trade or business, the value of such use is includible in your income.
Appendix A.

Federal Income Tax Toolkit

The FITT system is composed of four parts:

[1] the file interface,
[2] the inference engine,
[3] the user interface, and

A.1 File Interface

To begin a consultation after loading the file - (FITT)

(define (FITT)
  (create-window w1 1 1 22 78) ;; FITT system
  (create-window w3 4 3 14 74) ;; Question
  (create-window w4 2 2 20 76) ;; Consultation
  (create-window w2 2 2 20 76) ;; Interface
  (create-window w5 5 3 17 76) ;; Listings
  (create-window w6 13 4 8 72) ;; Documentation
  (create-window w7 13 4 8 72) ;; Help
  (create-window w8 20 3 1 74) ;; OTHER RESPONSES
  (window-popup w1)
  (set! taxpayers
    (cond ((eof-object? (with-input-from-file "taxpayer" (lambda () (read)))))
      nil)
    (else (with-input-from-file "taxpayer" (lambda () (read)))))))
  (window-popup w2)
  (display " SELECT FROM A PREVIOUS CONSULTATION"
    OR BEGIN A NEW CONSULTATION:" w2)
  (NEWLINE W2) (NEWLINE W2) (FLUSH-INPUT W2)
  (LET ((TAXPAYER (MENU (APPEND TAXPAYERS (list " " 'NEW 'EXIT)) W2)))
    (window-popup-delete w2)
    (purge-answers answers)
    (purge-dbase (cdr dbase))
    (COND
      ((EQUAL? TAXPAYER 'NEW)
        (set! answers nil))
      ((EQUAL? TAXPAYER 'EXIT)
        (EXIT))
      (ELSE
        (set! ANSWERS
          (with-input-from-file (symbol->string TAXPAYER)
            (lambda () (read)))))
        (what-if)
(load-answers))
(window-popup w2)
(display "SELECT THE ISSUE YOU WOULD LIKE TO PURSUE:") w2
(newline w2) (newline w2) (flush-input w2)
(let ((kb (menu '(vehicle-provided-by-employer
standard-mileage-rate
investment-credit&depreciation
rules-on-leasing-a-car
previously-loaded)) w2)))
(window-clear w2)
(newline w2) (newline w2)
(display "LOADING KNOWLEDGE BASE FOR ") w2
(display kb w2)
(cond ((equal? kb 'investment-credit&depreciation)
  (interp "acrs-itc.kb"))
  ((equal? kb 'rules-on-leasing-a-car)
   (interp "leasing.kb"))
  ((equal? kb 'vehicle-provided-by-employer)
   (interp "comp-car.kb"))
  ((equal? kb 'standard-mileage-rate)
   (interp "std-rates.kb"))
  ((equal? kb 'previously-loaded)
   nil))
(window-popup-delete w2)
(set-cdr! rule-path nil)
(set-cdr! dbase nil)
(fitt-1)))

(define (purge-answers lst)
(let ((first-answer (car lst)))
  (cond ((null? lst)
      nil)
       (else
        (putprop (car first-answer) () 'parm-values)
        (purge-answers (cdr lst))))))

(define (purge-dbase lst)
(let ((first-answer (car lst)))
  (cond ((null? lst)
      nil)
       (else
        (putprop (car first-answer) () 'parm-values)
        (purge-ubase (cdr lst))))))

(define (fitt-1)
(window-popup w4)
(display (getprop 'domain 'value) w4)
(newline w4)
(set-cdr! rule-path nil)
(set! frame-list elem-table)
(set-cdr! dbase nil)
(get-goals (car (car frame-list)))
(newline w4)
(newline w4)
(define (SAVE-OR-PRINT)
  (window-popup w3)
  (display " Would you like to SAVE or PRINT the results of this consultation? " w3)
  (newline w3) (newline w3)
  (flush-input w3)
  (let ((ans (menu '(SAVE PRINT CONTINUE) w3)))
    (cond ((equal? ans 'SAVE)
            (window-popup-delete w3)
            (window-popup w3) (newline w3)
            (display "Enter a file name --> " w3)
            (let ((file (read w3)))
              (WITH-OUTPUT-TO-FILE (SYMBOL->STRING file)
              (LAMBDA ()
                (WRITE ANSWERS)))
              (WITH-OUTPUT-TO-FILE "TAXPAYER"
              (LAMBDA ()
                (WRITE (cons file taxpayers))))))
    (window-popup-delete w3)
    (SAVE-OR-PRINT)
    ((EQUAL? ANS 'PRINT)
     (REPORT)
     (window-popup-delete w3)
     (SAVE-OR-PRINT))
    (else
     (OC))))

(define (r-s) (reset-scheme-top-level))

(define (INTERP file)
  (with-input-from-file file (lambda () (get-initial-data))))

(define (GET-INITIAL-DATA)
  (eval (read))
  (get-data))

(define (GET-DATA)
  (let (((list-of-properties (read)))
         (cond ((eof-object? list-of-properties)
                nil)
               (else
                (get-data-1 list-of-properties))))
  (define (GET-DATA-1 list-of-properties)
    (let ((name (first list-of-properties)))
      (define (get-data-1-loop name list-of-properties)
        (let ((property (first list-of-properties))
           (property-value (second list-of-properties)))
          (get-data-1-loop name (rest list-of-properties))
          (cons property-value (rest list-of-properties))))
    (get-data-1-loop name list-of-properties))

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(cond ((null? list-of-properties) (get-data))
  (else (putprop name property-value property)
      (get-data-1-loop name (rest list-of-properties))))))
(get-data-1-loop name (rest list-of-properties))))

(DEFINE (LOAD-FRAMES-4-5-6 exp cf)
  (define (load-data)
    (let ((list-of-properties (read)))
      (cond ((eof-object? list-of-properties)
              nil)
              (else (get-data-1 list-of-properties))))))
  (WITH-INPUT-FROM-FILE "LFRAME46" (LAMBDA () (LOAD-DATA))) UOTE NO-MATCH-IN-TABLE)

(DEFINE (LOAD-FRAMES-5-6 exp cf)
  (define (load-data)
    (let ((list-of-properties (read)))
      (cond ((eof-object? list-of-properties)
              nil)
              (else (get-data-1 list-of-properties))))))
  (WITH-INPUT-FROM-FILE "frame5-6.kb" (lambda () (load-data))))

(DEFINE (LOAD-FRAMES-2-4 exp cf)
  (define (load-data)
    (let ((list-of-properties (read)))
      (cond ((eof-object? list-of-properties)
              nil)
              (else (get-data-1 list-of-properties))))))
  (WITH-INPUT-FROM-FILE "frame2-4.kb" (lambda () (load-data))))

(define (LOAD-ANSWERS)
  (let ((ans answers))
    (define (loop lst)
      (cond ((null? lst) nil)
            (else (putprop (car (car lst))
                           (list (list (cadr (car lst)) 1))
                           'parm-values)
                 (loop (cadr lst))))))
  (loop answers)))

(DEFINE (LOAD-FILE-LEASETBL.FSL EXP CF)
  (LOAD "LEASETBL.FSL")
  #!TRUE)

A.2 Inference Engine

(define (MONITOR rule)
  (set-cdr! rule-path (cons rule (rest rule-path)))
  (let ((condition-set (getprop rule 'PREMISE)))
    (let ((premise-CF (M-EVAL condition-set 1)))
      (cond ((monitor-true? premise-CF)

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(M-EVAL (getprop rule 'ACTION) premise-CF)
(set-cdr! rule-path (CDDR rule-path))
((getprop rule 'ELSE)
 (M-EVAL (getprop rule 'ELSE) 1)
(set-cdr! rule-path (CDDR rule-path))
(else
 (set-cdr! rule-path (CDDR rule-path))
(reject rule))))

(define RULE-PATH (list '*rules*))
(define DBASE (list '*parms*))
(define ANSWERS nil)

(define (MONITOR-TRUE? CF) (> cf 0.2))

(define (REJECT rule) rule)

(define taxpayers ()

(define FRAME-LIST ()

(define ($AND cond-set cf)
 (cond ((null? cond-set) cf)
 (else
 (let ((cond-cf (M-EVAL (first cond-set) cf)))
 (cond ((null? cond-cf) (- 1))
 (if (> cond-cf 0.2)
 ($and (rest cond-set)
 (min cond-cf cf))
 (- 1))
 (else
 ($and (rest cond-set) (min 1 cf))))))))

(define ($OR cond-set cf)
 (cond ((null? cond-set)
 (if (> cf 0.2)
 cf
 (- 1)))
 (else
 (let ((cond-cf (M-EVAL (first cond-set) cf)))
 (cond ((not (null? cond-cf))
 (cond ((and (number? cond-cf)
 (= cond-cf 1))
 1)
 ((number? cond-cf)
 ($or (rest cond-set)
 cond-cf
 ))
 (else
(else
  ($or (rest cond-set)
    (min cf (- 1))
  )))
)

(define (LESSP* exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
        (val2 (M-EVAL (second exp) cf)))
    (cond ((and (number? val1)
                (number? val2))
           (< val1 val2))
          ((and (string? val1)
                (string? val2))
           (string<? val1 val2))))))

(define (EQUAL* exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
        (val2 (M-EVAL (second exp) cf)))
    (cond ((and (number? val1)
                (number? val2))
           (= val1 val2))
          ((and (string? val1)
                (string? val2))
           (string=? val1 val2))))))

(define (LESSEQ* exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
        (val2 (M-EVAL (second exp) cf)))
    (cond ((and (number? val1)
                (number? val2))
           (<= val1 val2))
          ((and (string? val1)
                (string? val2))
           (string<=? val1 val2))))))

(define (GREATERP* exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
        (val2 (M-EVAL (second exp) cf)))
    (cond ((and (number? val1)
                (number? val2))
           (> val1 val2))
          ((and (string? val1)
                (string? val2))
           (string>? val1 val2))))))

(define (GREATERQ* exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
        (val2 (M-EVAL (second exp) cf)))
    (cond ((and (number? val1)
                (number? val2))
           (>= val1 val2))
          ((and (string? val1)
                (string? val2))
           (string>=? val1 val2))))
(string? val2))
(string>=? val1 val2)))

(define (MIN* exp cf)
  (let (((val1 (M-EVAL (first exp) cf))
          (val2 (M-EVAL (second exp) cf)))
        (cond ((and (number? val1)
                    (number? val2))
               (MIN val1 val2)))
        (MAX val1 val2))))

(define (MAX* exp cf)
  (let (((val1 (M-EVAL (first exp) cf))
          (val2 (M-EVAL (second exp) cf)))
        (cond ((and (number? val1)
                    (number? val2))
               (MAX val1 val2))))
        (MIN val1 val2))))

(define (SAME exp cf)
  (define (same-1 value)
    (let (((parm-value (FINDOUT (first exp)))
            (value-pair (assoc value parm-value)))
          (if value-pair
              (if (> (second value-pair) 0.2)
                  (second value-pair)
                  0))
              0)))
    (cond ((null? (second exp))
           (same-1 'YES))
          (else
           (same-1 (M-EVAL (second exp) cf)))))

(define (NOTSAME exp cf)
  (define (notsame-1 value)
    (let (((parm-value (FINDOUT (first exp)))
            (value-pair (assoc value parm-value)))
          (if value-pair
              (if (<= (second value-pair) 0.2)
                  1))
              1)))
    (cond ((null? (second exp))
           (notsame-1 'YES))
          (else
           (notsame-1 (M-EVAL (second exp) cf)))))

(define (KNOWN exp cf)
  (let ((parm (first exp)))
    (let ((value-pairs (FINDOUT parm))
          (cond ((null? (filter value-pairs
                          (lambda (x) (> x 0.2))))
                 (- 1))
                 (else 1)))
      (define (FILTER pairs proc)
(cond ((null? pairs) nil)
   ((proc (second (first pairs)))
    (cons (first pairs) (filter (rest pairs) proc)))
   (else
    (filter (rest pairs) proc))))

(define (DO-ALL actions cf)
  (cond ((null? actions) 'DONE)
   (else
    (M-EVAL (first actions) cf)
    (do-all (rest actions) cf)))))

(define (CONCLUDE exp premise-cf)
  (let ((parm (first exp)))
   (cf (/ (fourth exp) 100))
   (value (M-EVAL (second exp) premise-cf)))
  (define (conclude-1 value cf)
    (let ((new-cf (* premise-cf cf))
      (previous-cf (second (assoc value
        (lookup parm))))
      (set-cdr! dbase (cons (list parm
        value
        (calc-cf new-cf previous-cf)
        (first (rest rule-path)))
        (cdr dbase)))
      (insert-table parm
        (list value
        (calc-cf new-cf previous-cf))))))
  (cond ((equal? value 'NO)
    (conclude-1 'YES (- cf)))
   (else
    (conclude-1 value cf)))))))

(define (CALC-CF new-cf pre-cf)
  (define (calc-cf-1 new-cf pre-cf)
    (cond ((= pre-cf 0) new-cf)
      ((and (>= new-cf 0) (>= pre-cf 0))
       (+ pre-cf (/ (+ 50 (* new-cf (- 100 pre-cf))) 100)))
      ((and (< new-cf 0) (< pre-cf 0))
       (+ pre-cf (/ (- (* new-cf (+ pre-cf 100)) 50) 100)))
      (else
       (let ((prod (* new-cf pre-cf))
         (sum (+ pre-cf new-cf))
         (mini (min (abs new-cf) (abs pre-cf))))
         (cond ((and (< prod 0) (> sum 0))
            (/ (+ (/ (- 100 mini) 2) (* 100 sum))
            (- 100 mini)))
         (else
            (/ (- (/ (- 100 mini) 2) (* 100 sum))
            (- 100 mini)))))
      (cond ((null? pre-cf) new-cf)
      (else
      )))}

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(\ (truncate (calc-cf-1 (* 100 new-cf) (* 100 pre-cf)))
  100)))

(define (PLUS exp cf)
  (let ((val1 (M-EVAL (first exp) cf))
          (val2 (M-EVAL (second exp) cf)))
    (+ val1 val2)))

(define (DIFFERENCE exp cf)
  (- (M-EVAL (first exp) cf)
      (M-EVAL (second exp) cf)))

(define (TIMES exp cf)
  (* (M-EVAL (first exp) cf)
      (M-EVAL (second exp) cf)))

(define (FQUOTIENT exp cf)
  (/ (M-EVAL (first exp) cf)
      (M-EVAL (second exp) cf)))

(define (MINUS-OF exp cf)
  (- (M-EVAL (first exp) cf)))

(define (MPRINTT exp cf)
  (define (MPRINTT-1 exp)
    (cond ((null? exp) T)
          (else
           (display (M-EVAL (first exp) cf) w5)
           (display " " w5)
           (mprintt-1 (rest exp))))))
  (window-popup w5)
  (mprintt-1 exp)
  (newline w5)
  (window-set-attribute! w5 'text-attributes 10)
  (display "Hit space-bar to exit.." w5)
  (window-set-attribute! w5 'text-attributes 15)
  (let ((ans (r-char w5))
        (window-popup-delete w5)
        T))

(define (VALUE-OF exp cf)
  (let ((parm (first exp)))
    (first (first (REVERSE (FINDOUT parm))))))

(define (INSERT-TABLE parm价值)
  (putprop parm
     (cond
      ((getprop parm 'PARM-VALUES)
       (list (getprop parm 'parm-values) value))
      (else
       (list value)))
     'PARM-VALUES)
(lookup parm))

(define (LOOKUP parm)
  (getprop parm 'PARM-VALUES))

(define (FOUND? value)
  (not (null? value)))

(define (M-EVAL exp cf)
  (cond ((number? exp) exp)
        ((symbol? exp) exp)
        ((string? exp) exp)
        (else
         (apply (eval (first exp)) (list (rest exp)
                        cf
                        )))))

(define (FINDOUT parm-name)
  (let (((has-value (lookup parm-name)))
       (if (found? has-value)
           has-value
           (findout-1
            parm-name))))

(define (FINDOUT-1 parm-name)
  (let (((p-askfirst (getprop parm-name 'ASKFIRST))
          (updated-list (getprop parm-name 'UPDATED-BY)))
       (cond (p-askfirst
              (let (((answer (ask-user parm-name)))
                 (if (get? answer)
                  (change-to-value parm-name answer)
                  (go-thru-rules updated-list
                    parm-name
                    )))
               (else
                (let (((parm-value (go-thru-rules updated-list
                                  parm-name
                                  )))
                      (if parm-value
                        parm-value
                        (change-to-value parm-name
                          (ask-user parm-name
                          ))))))
       (define (GET? answer)
         (not (equal? answer 'NOTKNOWN)))

(define (CHANGE-TO-VALUE parm ans)
  (cond ((atom? ans)
         (cond ((equal? ans 'NOTKNOWN)
                 (set-cdr! dbase (cons (list parm
                                         ans
                                         ))))))

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1
 0)
  (cdr dbase)))))
 (insert-table parm
  (list ans 1)))
 (else
  (cond ((equal? ans 'NOTKNOWN)
     (set-cdr! dbase (cons (list parm
            ans
            1
            (())
     (cdr dbase))))))
 (insert-table parm ans)))
 (define (GO-THRU-RULES rule-list parm-name)
  (let ((pairs (lookup parm-name)))
   (cond ((or (null? rule-list)
     (filter pairs (lambda (x) (= x 1.))))
   pairs)
   (else
    (cond ((equal? (get-type-1(getprop (car rule-list) 'subject))
      (car (car frame-list)))
      (use-rule (first rule-list))
      (go-thru-rules (rest rule-list)
          parm-name))
    (else
     (set! frame-list (cdr frame-list))
     (use-rule (first rule-list))
     (get-goals (car (car frame-list)))))
  )))
 (define (USE-RULE rule)
   (MONITOR rule))
 (define (GET-GOALS cn)
  (let ((display-results (getprop cn 'DISPLAYresults))
   (goals (append (getprop cn 'initialdata) (getprop cn 'GOALS))))
   (if display-results
    (get-goal-parm goals 'print)
    (get-goal-parm goals 'identity)))
  ))
 (define (GET-GOAL-PARM goals func)
  (cond ((null? goals) NIL)
  (else
   (let ((goal-value (FINDOUT
      (first goals))))
    (cond ((equal? func 'print)
      (print-goals (first goals) goal-value)
      (get-goal-parm (rest goals) func))
    (else
     (get-goal-parm (rest goals) func)))))
  ))
 (define (PRINT-GOALS goal value)
  (newline w4)
  (display goal w4)
(display " is equal to " w4)
(display value w4))

(define (P-FILTER lst proc)
  (cond ((null? lst) nil)
       ((proc (first lst)) (first lst))
       (else
        (p-filter (rest lst) proc)))))

(define first car)
(define rest cdr)
(define second cadr)
(define third caddr)
(define fourth caddr)
(define (fifth x) (caddr (cddr x)))
(define (sixth x) (caddr (cddr x)))
(define (seventh x) (caddr (cddr x)))

(define w1 (make-window "Federal Income Tax Toolkit" t))
(define w2 (make-window "Interface" t))
(define w3 (make-window "Question" t))
(define w4 (make-window () t))
(define w5 (make-window "Listings" t))
(define w6 (make-window "Documentation" t))
(define w7 (make-window "Help" t))
(define w8 (make-window "Other Responses" t))

(define (create-window name px py sx sy)
  (window-set-position! name px py)
  (window-set-size! name sx sy))

(define (oc) (begin
    (window-set-position! 'console 0 0)
    (window-set-size! 'console 24 80)
    (window-clear 'console)))

(define (get-type-1 frame)
  (let ((frame-string (symbol->string frame)))
    (string->symbol
      (substring frame-string
        0
        (- (string-length frame-string) 6))))))

A.3 User Interface

(DEFINITE (WHAT-IF-CHOICE 1st)
  (let ((ans (car lst)))
    (COND ((NULL? lst) NIL)
          (else
           (CONS (string-append
                  (symbol->string (first ans))
                  ""
(COND ((number? (second ans))
    (number->string (second ans) '(fix 2)))
  (else
    (symbol->string (second ans)))))
(what-if-choice (cdr lst))))))))

(define (FIND-CHOICE choices choice counter)
  (cond ((null? choices) nil)
    ((equal? (car choices) choice) (list counter choice))
    (else (find-choice (cdr choices) choice (+ counter 1)))))

(define (WHAT-IF)
  (window-clear w4)
  (window-popup w2)
  (cond ((null? answers)
    (display " No answers to show." w2)
    (newline w2) (newline w2) (newline w2) (newline w2)
    (window-set-attribute! w2 'text-attributes 10)
    (display " Hit space-bar to exit.." w2)
    (window-set-attribute! w2 'text-attributes 15)
    (let ((ans (r-char w2)))
      (window-popup-delete w2)
      (FITT)))
  (else
    (newline w2)
    (display " Select the PARAMETER you want to change.." w2)
    (NEWLINE W2) (newline w2) (flush-input w2)
    (let ((string-of-choices (what-if-choice
        (append answers
          '((FINISHED
            WITH-CHANGES)))))
      (let ((number-of-choices (length string-of-choices))
        (choice (find-choice string-of-choices
          (menu string-of-choices w2) 1)))
        (cond ((equal? number-of-choices (car choice))
          (window-popup-delete w2)
          nil)
        (else
          (window-clear w2)
          (newline w2) (newline w2) (newline w2)
          (display "Parameter to be changed: " w2)
          (display (cadr choice) w2)
          (newline w2) (newline w2)
          (display " NEW VALUE --> " w2 )
          (let ((value (read w2))
            (answer (list-ref answers
              (- (car choice) 1))))
            (set! answers (cons (list (first answer)
              value)
              answers)))
          (WINDOW-POPUP-DELETE W2)
          (what-if)))))))}
(define (WHY-ANS r-path wind)
  (window-clear wind)
  (let ((rule (first r-path)))
    (display rule wind)
    (display " from " wind)
    (display (getprop rule 'r-cntxt) wind)
    (newline wind) (newline wind)
    (display "IF " wind) ;;(newline wind)
    (p-rule (rest (getprop rule 'premise)) wind)
    (display "THEN " wind) ;;(newline wind)
    (p-rule (rest (getprop rule 'action)) wind)
    (newline wind) (newline wind)
    (window-set-attribute! wind 'text-attributes 10)
    (display "If you want to see more hit space-bar (ESC to exit)." wind)
    (window-set-attribute! wind 'text-attributes 15)
    (let ((ans (r-char wind)))
      (cond ((equal? ans 32)
        (cond ((null? (rest r-path))
          (newline wind) (newline wind)
          (display "Sorry that is all. Hit space-bar to exit." wind)
          (let ((ans (r-char wind)))
            ans))
        (else (why-ans (rest r-path) wind))))
      (else ans))))

(define (P-RULE lst wind)
  (define (p-rule-1 lst wind)
    (for-each (lambda (elem)
                (display " " wind)
                (display elem wind)
                (newline wind))
               lst))
  (display (first lst) wind)
  (newline wind)
  (p-rule-1 (rest lst) wind))

(define (R-CHAR wind)
  (let ((ans (char->integer (read-char wind))))
    (if (or (equal? ans 32)
            (equal? ans 27))
      ans
      (r-char wind)))))

(define (ASK-USER parm)
  (let ((has-ans (p-filter answers (lambda (elem)
                                      (equal? (first elem)
                                               parm)
                                      ))))
    (if has-ans
      (second has-ans)
      (ask-user-1 parm)))))
(define (MENU lst w?)
  (define (loop lst position-list)
    (cond ((null? lst) (menu-1 position-list w?))
      (else
       (let ((cursor-position (window-get-cursor w?)))
        (display (car lst) w?)
        (newline w?)
        (loop (cdr lst) (cons (list (car lst) (car cursor-position))
                              position-list)))))
  (loop lst ()�)

(define (menu-1 position-list w?)
  (let ((first-position (car position-list)))
    (let ((cursor-line (cadr first-position))
          (choice (car first-position)))
      (define (loop lst)
        (begin
         (let ((key #\?))
           (set! key (char->integer (read-char w?)))
           (cond
            ((equal? key 72)
             (window-set-attribute! w? 'text-attributes 15)
             (display choice w?)
             (menu-1 (append (cadr position-list)
                             (list (car position-list))) w?))
            ((equal? key 13)
             (window-set-attribute! w? 'text-attributes 15) choice)
            (else (menu-1 lst w?))))))
    (window-set-cursor! w? cursor-line 0)
    (window-set-attribute! w? 'text-attributes 112)
    (display choice w?)
    (window-set-cursor! w? cursor-line 0)
    (loop position-list)))))

(define (ASK-USER-1 parm)
  (let ((prompt (getprop parm 'PROMPT))
        (expect (getprop parm 'expect)))
    (cond ((null? prompt) 'NOTKNOWN)
      (else
       (newline w3)
       (window-popup w3)
       (window-set-attribute! w3 'text-attributes 15)
       (print-prompt prompt w3)
       (newline w3)
       (let ((ans (cond ((atom? expect)
                         (window-popup w8)
                         (display "CHANGE DOCUMENT HELP SAVE EXIT" w8)
                         (display "--"> " w3)
                         (flush-input w3)
                         (read w3))
                       (else
                        (flush-input w3)
                        (read w3)))))))

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(menu
  (append expect
    ('" " CHANGE DOCUMENT HELP
     SAVE EXIT))
  w3)))
(window-popup-DELETE w8)
(cond ((equal? ans 'WHY)
    (window-popup-delete w3)
    (window-popup w5)
    (why-ans (rest rule-path) w5)
    (window-popup-delete w5)
    (ask-user parm))
  ((equal? ans 'HOW)
    (window-popup w5)
    (how-ans (rest dbase) w5)
    (window-popup-delete w5)
    (ask-user parm))
  ((equal? ans 'HELP)
    (window-popup w7)
    (DISPLAY (GETPROP PARM 'HELP) w7)
    (read-char w7)
    (window-popup-delete w7)
    (window-popup-delete w3)
    (ask-user parm))
  ((equal? ans 'DOCUMENT)
    (window-popup w6)
    (window-set-cursor! w6 0 0)
    (let ((documentation (read-a-string w6 ()))))
      (putprop parm documentation 'documentation)
      (window-popup-delete w6)
      (window-popup-delete w3)
      (ask-user parm))
  ((equal? ans 'CHANGE)
    (WHAT-IF)
    (FITT-1)
    (window-popup-delete w3)
    (ask-user parm))
  ((equal? ans 'exit)
    (exit))
  ((equal? ans 'SAVE)
    (window-popup-delete w3)
    (window-popup w3) (newline w3)
    (display "Enter a file name --> " w3)
    (let ((file (read w3)))
      (WITH-OUTPUT-TO-FILE (SYMBOL->STRING file)
        (LAMBDA ()
          (WRITE ANSWERS)))
      (WITH-OUTPUT-TO-FILE "TAXPAYER"
        (LAMBDA ()
          (WRITE (cons file taxpayers)))))
    (window-popup-delete w4)
    (OC)
    (FITT))
  (else}
(window-popup-delete w3)
(set! answers (cons (list parm ans)
    answers))

(ans)))))

(define (read-a-string w? lst)
  (begin
    (let ((key #(a?)))
      (set! key (char->integer (read-char w?)))
      (display (integer->char key) w?)
      (cond
        ((equal? key 13) (convert lst))
        (else (read-a-string w? (cons (integer->char key) lst)))))))

(define (convert lst)
  (list->string (reverse lst)))

(define (HOW-ANS db wind)
  (let ((db-parm (first db)))
    (cond ((null? db-parm)
      (display "End of parameters inferred." wind)
      (display " -> Hit space-bar to exit." wind)
      (let ((ans (r-char wind)))
        ans))
    else
      (display "Parameter -> " wind)
      (display (first db-parm) wind)
      (display " " wind) (display (second db-parm) wind)
      (display " " wind) (display (third db-parm) wind)
      (display " " wind) (display (fourth db-parm) wind)
      (newline wind) (newline wind)
      (display (fifth db-parm) wind)
      (newline wind) (newline wind)
      (display "IF " wind)
      (p-rule (rest (getprop (fifth db-parm) 'premise)) wind)
      (display "THEN " wind)
      (p-rule (rest (getprop (fifth db-parm) 'action)) wind)
      (newline wind) (newline wind)
      (window-set-attribute! wind 'text-attributes 10)
      (display "For more parameters hit space-bar (ESC to exit).." wind)
      (window-set-attribute! wind 'text-attributes 15)
      (let ((ans (r-char wind)))
        (newline wind) (newline wind)
        (if (equal? ans 32)
          (how-ans (rest db) wind)
          ans))))))

(define (PRINT-PROMPT prompt wind)
  (for-each (lambda (symb)
    (cond ((number? symb)
      (display symb wind)
      (display " " wind))
    ((atom? symb)
      (display (symbol->string symb) wind)
      (newline wind)))
    (newline wind))
  (newline wind) (newline wind))
(display " " wind))
(else
 (eval symb)))
prompt))

A.4 Printer Interface

(define printer (open-output-file "lpt1"))

(define (report)
 (let ((ans answers)
        (db dbase))

   (define (report-loop-1 ans)
      (cond ((null? ans) nil)
            ((getprop (car (car ans)) 'print?)
             (display (car (car ans)) printer)
             (display " " printer)
             (display (cadr (car ans)) printer)
             (newline printer)
             (report-loop-1 (cdr ans)))
            (else
             (report-loop-1 (cdr ans))))))

(define (report-loop-2 dbase)
 (cond ((null? dbase) nil)
            ((getprop (car (car dbase)) 'print?)
             (display (car (car dbase)) printer)
             (display " " printer)
             (display (cadr (car dbase)) printer)
             (newline printer)
             (cond ((null? (getprop (fourth (car dbase)) 'translation))
                    (newline printer)
                    (report-loop-2 (cdr dbase)))
                   (else
                    (display
                    (getprop
                    (fourth (car dbase)) 'translation) printer)
                    (newline printer)
                    (report-loop-2 (cdr dbase))))))

   (else
    (report-loop-2 (cdr dbase))))

(define (report-loop-3 ans)
 (cond ((null? ans) nil)
            ((getprop (car (car ans)) 'documentation)
             (display (car (car ans)) printer)
             (display " " printer)
             (display (getprop (car (car ans)) 'documentation) printer)
             (display " " printer)
             (newline printer))
            (else
             (report-loop-3 (cdr ans))))))

(report-header)
(define (report-header)
  (DISPLAY (ASCII->SYMBOL 27) PRINTER)
  (DISPLAY (ASCII->SYMBOL 111) PRINTER)
  (DISPLAY (ASCII->SYMBOL 14) PRINTER)
  (DISPLAY " Internal Revenue Agents's Toolkit" PRINTER)
  (NEWLINE PRINTER) (DISPLAY (ASCII->SYMBOL 14) PRINTER)
  (DISPLAY " I" PRINTER) (NEWLINE PRINTER)
  (DISPLAY (ASCII->SYMBOL 14) PRINTER)
  (DISPLAY " I" PRINTER) (NEWLINE PRINTER) (NEWLINE PRINTER)
  (NEWLINE PRINTER) (NEWLINE PRINTER) (NEWLINE PRINTER)

(define (report-foot)
  (NEWLINE PRINTER) (NEWLINE PRINTER) (NEWLINE PRINTER)
  (DISPLAY (ASCII->SYMBOL 27) PRINTER) (DISPLAY (ASCII->SYMBOL 33) PRINTER)
  (DISPLAY (ASCII->SYMBOL 20) PRINTER)
  (DISPLAY "For Official Use Only - Internal Revenue Service" PRINTER)
  (NEWLINE PRINTER) (DISPLAY (ASCII->SYMBOL 18) PRINTER) (NEWLINE PRINTER)
  (QUOTE YES))
(define (STRING->NUMBER STRING)
  (DEFINE (LOOP string lst)
    (cond ((null? lst) nil)
      ((equal? string (first (first lst)))
        (second (first lst)))
      (else (loop string (cadr lst))))))
(loop string '((11 1) (21 2) (31 3)
  (41 4) (51 5) (61 6)
  (71 7) (81 8) (91 9)
  (101 0)))

Appendix B.

Business Use of an Automobile - Knowledge Bases

B.1 Investment Tax Credit and Accelerated Cost Recovery Deductions (KB)

(define elem-table '((YEAR)
  (YEAR-2)
  (YEAR-3)
  (YEAR-4)
  (YEAR-5)

84
(DOMAIN VALUE "Depreciation - Assets placed in service after 12/31/84")

Definition of context for first year calculations

(YEAR
 DISPLAYRESULTS #!TRUE
 GOALS (ITC COST-RECOVERY-DEDUCTION-1ST-YEAR
 YE/ R-2-FLAG)
 INITIALDATA (AUTOMOBILE-DATE DATE-DISPOSED))

Definition of parameters for first year calculations

(AUTOMOBILE-COST
 PROMPT (What is the total cost of the automobile? 0)
 PRINT? #!TRUE)

(AUTOMOBILE-DATE-ACQUIRED
 UPDATED-BY (RULE-REFORMAT-DATE))

(MONTH-ACQUIRED
 UPDATED-BY (RULE-REFORMAT-DATE))

(AUTOMOBILE-DATE
 PRINT? #!TRUE
 TYPE SINGLEVALUED
 PROMPT (Enter the date the automobile was acquired 0)
 (newline w3) (For example: If the automobile was acquired April 3, 1985: Enter -> 04/03/85))

(DATE-DISPOSED
 RANGE (0 3000)
 TYPE SINGLEVALUED
 PROMPT (Enter the date the automobile was disposed or retired 0)
 (newline w3) (For example: If the automobile was disposed April 3, 1985: Enter -> 04/03/85))

(AUTOMOBILE-DATE-DISPOSED
 UPDATED-BY (RULE-REFORMAT-DATE))

(TOTAL-MILEAGE
 PRINT? #!TRUE
 PROMPT (Enter the total mileage of the automobile: 0)
 HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD
 PRINT? #!TRUE
 EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT (What method was used to calculate BUSINESS-USE?)

(BUSINESS-USE-DAYS
PRINT? #!TRUE
PROMPT (Enter the number of days per week the car was used for business use: (newline w3))

(OTHER-%-BUSINESS
PROMPT (Enter the business use %: (newline w3) |For example: If the % is 80% - Enter -> 80|)

(OTHER-%-PRODUCTION
PROMPT (Enter the production of income use %: (newline w3) |For example: If the % is 80% - Enter -> 80|)

(BUSINESS-MILEAGE
PRINT? #!TRUE
PROMPT (Enter |the |BUSINESS |MILEAGE: |)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use."

(PRODUCTION-OF-INCOME-MILEAGE
PRINT? #!TRUE
PROMPT (Enter |the |PRODUCTION |OF |INCOME |MILEAGE: |)
HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test"

(BUSINESS-USE-1ST-YEAR
PRINT? #!TRUE
UPDATED-BY (BUSINESS-USE-RULE001 BUSINESS-USE-RULE002 BUSINESS-USE-RULE004 BUSINESS-USE-RULE005)

(B&P-USE-1ST-YEAR
PRINT? #!TRUE
UPDATED-BY (BUSINESS-USE-RULE001 BUSINESS-USE-RULE002 BUSINESS-USE-RULE003 BUSINESS-USE-RULE004 BUSINESS-USE-RULE005)

(TOTAL-B&P-MILEAGE
UPDATED-BY (BUSINESS-USE-RULE003)

(COST-RECOVERY-DEDUCTION-1ST-YEAR
PRINT? #!TRUE

(ITC

86
PRINT? #!TRUE
UPDATED-BY (DATE-RULE001 RULE001 RULE002 RULE003 RULE004 RULE004 RULE005))

(ITC-ELECTION
PRINT? #!TRUE
PROMPT (Please lindicate l he l taxpayer's l election l for ITC ?)
TYPE SINGLEVALUED
EXPECT (REDUCED-ITC BASIS-ADJUSTMENT)
HELP "Where an election is made to claim a reduced credit for an automobile instead of
reducing the basis by one-half of the ITC amount, the ceiling is 2/3 of the applicable ceiling
amount. ($667 or $450)."

(MAXIMUM-COST-RECOVERY-FIRST-YEAR
PRINT? #!TRUE
UPDATED-BY (MAX-COST-RECOVERY-RULE001 MAX-COST-RECOVERY-RULE002 MAX-COST-RECOVERY-RULE003 MAX-COST-RECOVERY-RULE004))

(MAXIMUM-COST-RECOVERY-2ND-YEAR
PRINT? #!TRUE
UPDATED-BY (MAX-COST-RECOVERY-RULE001 MAX-COST-RECOVERY-RULE002 MAX-COST-RECOVERY-RULE003 MAX-COST-RECOVERY-RULE004))

(MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS
PRINT? #!TRUE
UPDATED-BY (MAX-COST-RECOVERY-RULE001 MAX-COST-RECOVERY-RULE002 MAX-COST-RECOVERY-RULE003 MAX-COST-RECOVERY-RULE004))

(PRODUCTION-OF-INCOME-USE-1ST-YEAR
PRINT? #!TRUE
UPDATED-BY (RULE106))

(YEAR-2-FLAG UPDATED-BY (LOAD-FRAME-RULE001 INSTANTIATE-FRAME-RULE001))

(YEAR-2-DUMMY-PARM
UPDATED-BY (INSTANTIATE-FRAME-RULE002))

(YEAR-2-
EXPECT (YES NO)
PROMPT (Would l you l like l to l examine l
l e l consequences l of l business l use l
lof I the I automobile l for l the l SECOND TAX l year l ?)

(SECTION-179-ELECTION
PRINT? #!TRUE
EXPECT (YES NO)
HELP "You may elect to treat the cost of certain qualifying property as an expense rather than
a capital expenditure. The election for Section 179 must be made in the year the automobile is
acquired. For example, in 1986 you purchased a new car and used it entirely for personal
purposes. In 1987 you t gin to use the car in your trade or business. No section 179 deduction
is allowed for the car."

87
PROMPT (Do you elect to treat the cost of the automobile as a deduction, (newline w3) (newline w3) electing the Section 179 deduction?))

(SECTION-179-MAX-AMOUNT
  PRINT? #!TRUE
  UPDATED-BY (SECTION-179-RULE001 SECTION-179-RULE002 SECTION-179-RULE003))

(MACRS-METHOD
  PRINT? #!TRUE
  EXPECT (200%-DECLINING-BALANCE STRAIGHT-LINE ALTERNATE-MACRS-METHOD)
  PROMPT (Is the MACRS depreciation method?)
  HELP "Automobiles are in the 5-year class, the declining balance rate is 40%. The deduction is calculated by applying the 40% rate to the adjusted basis of the property. To figure the MACRS deduction under Straight Line, a new rate is determined for each tax year in the recovery period. For any tax year, the rate is determined by dividing the number 1 by the years remaining in the recovery period.")

(ACRS-METHOD
  PRINT? #!TRUE
  EXPECT (ACRS ALTERNATE-ACRS-METHOD)
  PROMPT (Select the ACRS depreciation method?)
  HELP "You can elect either the ACRS method or the Alternate ACRS method. The ACRS method uses 25%, 38% and 37%, for the first, second and third years respectively. The Alternate ACRS method uses the straight line method over a five year life using half year convention.")

(FIRST-YEAR-RATE
  PRINT? #!TRUE
  UPDATED-BY (RATE-RULE001 RATE-RULE002 RATE-RULE003 RATE-RULE004 RATE-RULE005 RATE-RULE006))

(SECOND-YEAR-RATE
  PRINT? #!TRUE
  UPDATED-BY (RATE-RULE001 RATE-RULE002 RATE-RULE003 RATE-RULE004 RATE-RULE005 RATE-RULE006))

(THIRD-YEAR-RATE
  UPDATED-BY (RATE-RULE001 RATE-RULE002 RATE-RULE003 RATE-RULE004 RATE-RULE005 RATE-RULE006))

(TOTAL-BASES-LAST-3-MONTHS
  PRINT? #!TRUE
  PROMPT (Enter the total bases of all property acquired during the (newline w3) (newline w3) last three months of the year? (newline w3))
  HELP "If during any tax year the total bases of depreciable property placed in service during the last three months of that tax year exceed 40% of the total bases of all depreciable property placed in service that year, you must use mid-quarter convention. Do not include the basis of either residential rental property or nonresidential real property.")
(TOTAL-BASES-12-MONTHS
PRINT? #!TRUE
PROMPT (Enter the total bases of all property acquired during the year?)
(newline w3))
HELP "If during any tax year the total bases of depreciable property placed in service during the last three months of that tax year exceed 40% of the total bases of all depreciable property placed in service that year, you must use mid-quarter convention. Do not include the basis of either residential rental property or nonresidential real property.")

(MACRS-CONVENTION
PRINT? #!TRUE
UPDATED-BY (MID-QUARTER-CONVENTION-RULE))

(MID-QUARTER-CONVENTION-RATE
PRINT? #!TRUE
UPDATED-BY (MID-QUARTER-CONVENTION-RATE-RULE))

Definition of the rules for first year calculations

SECTION 179 RULES
(SECTION-179-RULE001
SUBJECT YEAR-RULES
PREMISE
($AND
 (SAME SECTION-179-ELECTION YES)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 850403))
ACTION
(DO-ALL (CONCLUDE SECTION-179-MAX-AMOUNT 4000 TALLY 100)))

(SECTION-179-RULE002
SUBJECT YEAR-RULES
PREMISE
($AND
 (SAME SECTION-179-ELECTION YES)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 850402)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 851231))
ACTION (DO-ALL (CONCLUDE SECTION-179-MAX-AMOUNT 3200 TALLY 100)))

(SECTION-179-RULE003
SUBJECT YEAR-RULES
PREMISE
($AND
 (SAME SECTION-179-ELECTION YES)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 861231))
ACTION (DO-ALL (CONCLUDE SECTION-179-MAX-AMOUNT 2560 TALLY 100)))

ITC RULES
(RULE001
SUBJECT YEAR-RULES
PREMISE ($OR
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 851231)
 (LESSEQ* (VALUE-OF BUSINESS-USE-1ST-YEAR () 0.5))
ACTION (DO-ALL (CONCLUDE ITC "NOT COMPUTED" TALLY 100))
(CONCLUDE AUTOMOBILE-BASIS
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS-BEFORE-179-ADJ
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100))

(RULE002
 PREMISE ($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850403)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
 (GREATERP*
 (VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
 (SAME ITC-ELECTION REDUCED-ITC))
 ACTION (DO-ALL
 (CONCLUDE ITC TIMES
 (VALUE-OF BUSINESS-USE-1ST-YEAR ()
 (MIN*
 (TIMES
 (VALUE-OF AUTOMOBILE-COST ()
 .04)
 667))
 TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS-BEFORE-179-ADJ
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100))
 SUBJECT YEAR-RULES)

(RULE003
 PREMISE ($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 851231)
 (GREATERP*
 (VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
 (SAME ITC-ELECTION REDUCED-ITC))
 ACTION (DO-ALL
 (CONCLUDE ITC TIMES
 (VALUE-OF BUSINESS-USE-1ST-YEAR ()
 (MIN*
 (TIMES
 (VALUE-OF AUTOMOBILE-COST ()
 .04)
 450))
 TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS-BEFORE-179-ADJ
 (VALUE-OF AUTOMOBILE-COST ()) TALLY 100))
 SUBJECT YEAR-RULES)

(RULE004
 PREMISE ($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850403)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
 (GREATERP*

(VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5
(SAME ITC-ELECTION BASIS-ADJUSTMENT))
ACTION (DO-ALL
(CONCLUDE ITC (TIMES
  (VALUE-OF BUSINESS-USE-1ST-YEAR ())
  (MIN*
    (TIMES
      (VALUE-OF AUTOMOBILE-COST ()
        .06)
      1000))
  TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
  (DIFFERENCE
    (VALUE-OF AUTOMOBILE-COST ()
    (FQUOTIENT (VALUE-OF ITC ()
      2))
  TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS-BEFORE-179-ADJ
  (VALUE-OF AUTOMOBILE-COST ()) TALLY 1C%)
SUBJECT YEAR-RULES)

(RULE005
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
  (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 851231)
  (GREATERP*
    (VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
  (SAME ITC-ELECTION BASIS-ADJUSTMENT))
ACTION (DO-ALL
(CONCLUDE ITC (TIMES
  (VALUE-OF BUSINESS-USE-1ST-YEAR ())
  (MIN*
    (TIMES
      (VALUE-OF AUTOMOBILE-COST ()
        .06)
      675))
  TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
  (DIFFERENCE
    (VALUE-OF AUTOMOBILE-COST ()
    (FQUOTIENT (VALUE-OF ITC ()
      2))
  TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS-BEFORE-179-ADJ
  (VALUE-OF AUTOMOBILE-COST ()) TALLY 100))
SUBJECT YEAR-RULES)

DEDUCTION RULES
(MACRS-OR-ACRS-RULE
SUBJECT YEAR-RULES
PREMISE
($AND
  (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101))
ACTION (DO-ALL (CONCLUDE MACRS-METHOD "NOT APPLICABLE" TALLY 100))
ELSE (DO-ALL (CONCLUDE ACRS-METHOD "NOT APPLICABLE" TALLY 100))
TRANSLATION "")

(EARLY-DISPOSITION-RULE001
SUBJECT YEAR-RULES
PREMISE
($AND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
  (LESSP* (VALUE-OF AUTOMOBILE-DATE-DISPOSED ()) 870101))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR 0 TALLY 100)
  (CONCLUDE YEAR-2-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS-CALC "NOT APPLICABLE" TALLY 100))
TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in the year you dispose or retire an asset.")

(EARLY-DISPOSITION-RULE002
SUBJECT YEAR-RULES
PREMISE
($AND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
  (KNOWN MID-QUARTER-CONVENTION-RATE)
  (KNOWN BUSINESS-USE-1ST-YEAR)
  (KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
  (KNOWN FIRST-YEAR-RATE))
ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
    (TIMES (VALUE-OF B&P-USE-1ST-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
        (TIMES
          (VALUE-OF MID-QUARTER-CONVENTION-RATE ())
          (TIMES
            (VALUE-OF AUTOMOBILE-BASIS ())
            (TIMES
              2
              (VALUE-OF FIRST-YEAR-RATE ()))))
    TALLY 100)
  (CONCLUDE YEAR-2-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS-CALC "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The cost recovery deduction has been computed using the mid-quarter convention allowing depreciation for the quarters the vehicle was in use.")

(EARLY-DISPOSITION-RULE006
SUBJECT YEAR-RULES
PREMISE
($AND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
(KNOWN BUSINESS-USE-1ST-YEAR)
(KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
(KNOWN FIRST-YEAR-RATE))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
   (TIMES (VALUE-OF B&P-USE-1ST-YEAR ())
     (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
       (TIMES .5
         (TIMES
           (VALUE-OF AUTOMOBILE-BASIS ())
           (TIMES
             2
             (VALUE-OF FIRST-YEAR-RATE ()))))
   TALLY 100)
(CONCLUDE YEAR-2-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS-CALC
"NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The cost recovery deduction has been computed using the mid-quarter
convention allowing depreciation for the quarters the vehicle was in use.")

(SECTION-179-DEDUCTION-RULE001
SUBJECT YEAR-RULES
PREMISE
($AND
(GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5)
(SAME SECTION-179-ELECTION YES)
(KNOWN B&P-USE-1ST-YEAR)
(LESSEQ* (VALUE-OF SECTION-179-MAX-AMOUNT ())
   (VALUE-OF AUTOMOBILE-BASIS ()))
(KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
(KNOWN FIRST-YEAR-RATE))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
   (TIMES
     (VALUE-OF B&P-USE-1ST-YEAR ())
     (VALUE-OF SECTION-179-MAX-AMOUNT ())
   TALLY 100))
(CONCLUDE AUTOMOBILE-BASIS
   (DIFFERENCE
     (VALUE-OF AUTOMOBILE-BASIS ())
     (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR))
   TALLY 100))
TRANSLATION "The cost recovery deduction has been computed with the SECTION 179
deduction limited to the maximum recovery amount for the year.")

(SECTION-179-DEDUCTION-RULE002
SUBJECT YEAR-RULES
?PREMISE
($AND
(GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5)
(SAME SECTION-179-ELECTION YES)
(KNOWN B&P-USE-1ST-YEAR)
(GREATERP* (VALUE-OF SECTION-179-MAX-AMOUNT ())
(VALUE-OF AUTOMOBILE-BASIS ()))
(KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
(KNOWN FIRST-YEAR-RATE))
ACTION
(DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
(TIMES
 (VALUE-OF B&P-USE-1ST-YEAR ())
 (VALUE-OF AUTOMOBILE-BASIS ())) TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (DIFFERENCE
 (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR))
 TALLY 100))
TRANSLATION "The cost recovery deduction has been computed with the SECTION 179
deduction limited to the basis of the property.")

(MID-QUARTER-CONVENTION-RULE
PREMISE
(SAND
 (GREATERP* (VALUE-OF TOTAL-BASES-LAST-3-MONTHS ())
 (TIMES
  4
 (VALUE-OF TOTAL-BASES-12-MONTHS ()))))
ACTION
(DO-ALL
 (CONCLUDE MACRS-CONVENTION MID-QUARTER-CONVENTION TALLY 100))
ELSE
(DO-ALL
 (CONCLUDE MACRS-CONVENTION HALF-YEAR-CONVENTION TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION ""

(MID-QUARTER-CONVENTION-RATE-RULE
PREMISE
(SAND
 (GREATERP* (VALUE-OF YEAR-DISPOSED ()) 87))
ACTION
(DO-ALL
 (CONCLUDE MID-QUARTER-CONVENTION-RATE
 (FIND-MID-QUARTER-RATE (VALUE-OF MONTH-ACQUIRED ())
 TALLY 100))
ELSE
(DO-ALL
 (CONCLUDE MID-QUARTER-CONVENTION-RATE
 (FIND-MID-QUARTER-RATE
 (PLUS
  1
 (DIFFERENCE
 (VALUE-OF MONTH-DISPOSED ())
 (VALUE-OF MONTH-ACQUIRED ()))))
94
TALLY 100)
SUBJECT YEAR-RULES
TRANSLATION ""

(DEDUCTION-COMPUTATION-MID-QUARTER-CONVENTION
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
 (SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
 (KNOWN MID-QUARTER-CONVENTION-RATE)
 (KNOWN BUSINESS-USE-1ST-YEAR)
 (KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
 (KNOWN FIRST-YEAR-RATE))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
 (TIMES (VALUE-OF B&P-USE-1ST-YEAR ())
 (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
 (TIMES
 (VALUE-OF MID-QUARTER-CONVENTION-RATE ())
 (TIMES
 (VALUE-OF AUTOMOBILE-BASIS ())
 (TIMES
 2
 (VALUE-OF FIRST-YEAR-RATE ()))))
 TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION ""

(DEDUCTION-COMPUTATION-YR-1
PREMISE
($AND
 (KNOWN BUSINESS-USE-1ST-YEAR)
 (KNOWN FIRST-YEAR-RATE)
 (KNOWN MAXIMUM-COST-RECOVERY-FIRST-YEAR)
 ($OR
 (SAME MACRS-METHOD 200%-DECLINING-BALANCE)
 (SAME MACRS-METHOD STRAIGHT-LINE)))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
 (TIMES (VALUE-OF B&P-USE-1ST-YEAR ())
 (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
 (TIMES
 (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF FIRST-YEAR-RATE ()))))
 TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (DIFFERENCE
 (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
 TALLY 100))
ELSE
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
    (TIMES (VALUE-OF B&P-USE-1ST-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
        (TIMES
          (VALUE-OF AUTOMOBILE-BASIS ())
          (VALUE-OF FIRST-YEAR-RATE ()))))
    TALLY 100))

SUBJECT YEAR-RULES
TRANSLATION ""

RATE RULES
(RATE-RULE001
  PREMISE
  ($AND
    (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
    (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
    (GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5)
    (SAME ACRS-METHOD ACRS))
  ACTION
  (DO-ALL
    (CONCLUDE FIRST-YEAR-RATE .25 TALLY 100)
    (CONCLUDE SECOND-YEAR-RATE .38 TALLY 100)
    (CONCLUDE THIRD-YEAR-RATE .37 TALLY 100)
    (CONCLUDE MACRS-METHOD "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The rate of 25% has been applied to the adjusted basis of the automobile in computing the first year ACRS deduction. The Section 179 was not elected and the business-use rate is greater than 50% and the taxpayer has elected the ACRS method."

(RATE-RULE002
  PREMISE
  ($OR
    ($AND
      (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
      (LESSEQ* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5))
    ($AND
      (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
      (GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5)
      (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))
  ACTION
  (DO-ALL
    (CONCLUDE FIRST-YEAR-RATE .10 TALLY 100)
    (CONCLUDE SECOND-YEAR-RATE .20 TALLY 100)
    (CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
    (CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
    (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
    (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
    (CONCLUDE MACRS-METHOD "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The rate of 10% has been applied to the adjusted basis of the automobile in computing the first year deduction. The Section 179 was elected. The Alternate rate is based upon a modified Straight Line method using a 5-year life, half-year convention, applying
the same rate for each of the remaining years. This method must be used if the business use rate is less than 50%, however the taxpayer has the option to elect it.

(RATE-RULE003
PREMISE

($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 841231)
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 870101)
 (GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR () .5)
 (SAME MACRS-METHOD ALTERNATE-ACRS-METHOD))
ACTION
(DO-ALL
 (CONCLUDE FIRST-YEAR-RATE .10 TALLY 100)
 (CONCLUDE SECOND-YEAR-RATE .20 TALLY 100)
 (CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
 (CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
 (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
 (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
 (CONCLUDE MACRS-METHOD "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The rate of 10% has been applied to the adjusted basis of the automobile in computing the first year ACRS deduction. The Section 179 was not elected the business-use rate is greater than 50%, and the taxpayer has elected the Alternate ACRS method.")

(RATE-RULE004
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 861231)
 (GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR () .5)
 (SAME MACRS-METHOD 200%-DECLINING-BALANCE))
ACTION
(DO-ALL
 (CONCLUDE FIRST-YEAR-RATE .20 TALLY 100)
 (CONCLUDE SECOND-YEAR-RATE .40 TALLY 100)
 (CONCLUDE THIRD-YEAR-RATE .40 TALLY 100)
 (CONCLUDE ACRS-METHOD "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-RULES
TRANSLATION "The rate of 20% has been applied to the adjusted basis of the automobile in computing the first year ACRS deduction. The Section 179 was not elected the business-use rate is greater than 50%, and the taxpayer has elected the 200% DOUBLE DECLINING BALANCE method. The first year deduction has been adjusted to reflect the half year convention"

(RATE-RULE005
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 861231)
 (GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR () .5)
 (SAME MACRS-METHOD STRAIGHT-LINE))
ACTION
(DO-ALL
 (CONCLUDE FIRST-YEAR-RATE .10 TALLY 100)
 (CONCLUDE SECOND-YEAR-RATE .2222 TALLY 100)
(CONCLUDE THIRD-YEAR-RATE .2857 TALLY 100)
(CONCLUDE FOURTH-YEAR-RATE .4 TALLY 100)
(CONCLUDE FIFTH-YEAR-RATE .6666 TALLY 100)
(CONCLUDE ACRS-METHOD "NOT APPLICABLE" TALLY 100))

SUBJECT YEAR-RULES
TRANSLATION "The rate of 20% has been applied to the adjusted basis of the automobile in computing the first year ACRS deduction. The Section 179 was not elected the business-use rate is greater than 50%, and the taxpayer has elected the Straight Line method. The first year deduction has been adjusted to reflect the half year convention."

(RATE-RULE006
PREMISE
($)OR
($)AND
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
(LESSEQ* (VALUE-OF BUSINESS-USE-1ST-YEAR (\^) .5))
($)AND
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
(GREATERP* (VALUE-OF BUSINESS-USE-1ST-YEAR ()) .5)
(SAME ACRS-METHOD ALTERNATE-ACRS-METHOD))
ACTION
(DO-ALL
(CONCLUDE FIRST-YEAR-RATE .10 TALLY 100)
(CONCLUDE SECOND-YEAR-RATE .20 TALLY 100)
(CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
(CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE SIXTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE SEVENTH-YEAR-RATE .10 TALLY 100)
(CONCLUDE MACRS-METHOD "NOT APPLICABLE" TALLY 100))

SUBJECT YEAR-RULES
TRANSLATION "The rate of 10% has been applied to the adjusted basis of the automobile in computing the first year deduction. The Section 179 was not elected. The Alternate rate is based upon a modified Straight Line method using a 5-year life, half-year convention, applying the same rate for each of the remaining years. This method must be used if the business use rate is less than 50%, however the taxpayer has the option to elect it."

MAX-COST-RECOVERY-RULES
(MAX-COST-RECOVERY-RULE001
PREMISE ($AND (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850101)
(KNOWN AUTOMOBILE-BASIS))
ACTION
(DO-ALL
(CONCLUDE MAXIMUM-COST-RECOVERY-FIRST-YEAR 4000 TALLY 100)
(CONCLUDE MAXIMUM-COST-RECOVERY-2ND-YEAR 0 TALLY 100)
(CONCLUDE MAXIMUM-COST-RECOVERY-3RD-YEAR 0 TALLY 100)
(CONCLUDE MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS 6000 TALLY 100))

SUBJECT YEAR-RULES

(MAX-COST-RECOVERY-RULE002
PREMISE ($AND (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850403)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
(KNOWN AUTOMOBILE-BASIS))
ACTION
(DO-ALL
(CONCLUDE MAXIMUM-COST-RECOVERY-FIRST-YEAR 4100 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-2ND-YEAR 0 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-3RD-YEAR 0 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS 6200 TALLY
100))
SUBJECT YEAR-RULES)

(MAX-COST-RECOVERY-RULE003
PREMISE
($AND (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(KNOWN AUTOMOBILE-BASIS))
ACTION
(DO-ALL
(CONCLUDE MAXIMUM-COST-RECOVERY-FIRST-YEAR 3200 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-2ND-YEAR 0 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-3RD-YEAR 0 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS 4800 TALLY
100))
SUBJECT YEAR-RULES)

(MAX-COST-RECOVERY-RULE004
PREMISE ($AND (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ())
861231)
(KNOWN AUTOMOBILE-BASIS))
ACTION
(DO-ALL
(CONCLUDE MAXIMUM-COST-RECOVERY-FIRST-YEAR 2560 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-2ND-YEAR 4100 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-3RD-YEAR 2540 TALLY 100)
( CONCLUDE MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS 1475 TALLY
100))
SUBJECT YEAR-RULES)

BUSINESS VS. PERSONAL USE
(BUSINESS-USE-RULE001
PREMISE ($AND
(SAME BUSINESS-USE-METHOD MILEAGE)
(KNOWN TOTAL-MILEAGE)
(KNOWN TOTAL-B&P-MILEAGE)
(KNOWN BUSINESS-MILEAGE))
ACTION
(DO-ALL
( CONCLUDE BUSINESS-USE-1ST-YEAR
(FQUOTIENT (VALUE-OF BUSINESS-MILEAGE ())
(VALUE-OF TOTAL-MILEAGE ())
TALLY 100))
( CONCLUDE B&P-USE-1ST-YEAR
(FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE ())
(VALUE-OF TOTAL-MILEAGE ())
TALLY 100))
SUBJECT YEAR-RULES)
(BUSINESS-USE-RULE002
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD BUSINESS-USE-100%))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR 1 TALLY 100)
  (CONCLUDE B&P-USE-1ST-YEAR 1 TALLY 100))
SUBJECT YEAR-RULES)

(BUSINESS-USE-RULE004
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD OTHER)
  (KNOWN OTHER-%-BUSINESS)
  (KNOWN OTHER-%-PRODUCTION))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR
    (FQUOTIENT (VALUE-OF OTHER-%-BUSINESS () 100) TALLY 100)
    (CONCLUDE B&P-USE-1ST-YEAR
      (PLUS
        (FQUOTIENT (VALUE-OF OTHER-%-BUSINESS () 100)
        (FQUOTIENT (VALUE-OF OTHER-%-PRODUCTION () 100)) TALLY 100))
SUBJECT YEAR-RULES)

(BUSINESS-USE-RULE003
PREMISE ($AND
  (KNOWN PRODUCTION-OF-INCOME-MILEAGE)
  (KNOWN BUSINESS-MILEAGE))
ACTION
(DO-ALL
  (CONCLUDE TOTAL-B&P-MILEAGE
    (PLUS (VALUE-OF BUSINESS-MILEAGE ()
      (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE))
    TALLY 100))
SUBJECT YEAR-RULES)

(BUSINESS-USE-RULE005
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD DAYS-OF-THE-WEEK)
  (KNOWN BUSINESS-USE-DAYS))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR
    (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS () 7)
    TALLY 100)
  (CONCLUDE B&P-USE-1ST-YEAR
    (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS () 7)
    TALLY 100))
SUBJECT YEAR-RULES)

INSTANTIATION & LOAD RULES
(LOAD-FRAME-RULE001
  PREMISE ($AND (SAME YEAR-2-? YES))

100
ACTION
(DO-ALL
  (CONCLUDE YEAR-2-?
    (LOAD-FRAMES-2-4 () TALLY 100)
  )
(CONCLUDE YEAR-2-? YES TALLY 100)
(CONCLUDE YEAR-OF-COMPUTATION
  (PLUS
    (VALUE-OF YEAR-OF-COMPUTATION ()
     1)
    TALLY 100)))

SUBJECT YEAR-RULES)

(LOAD-FRAMES-5-6
 PREMISE ($AND (SAME YEAR-5-? YES))
 ACTION
 (DO-ALL
  (CONCLUDE YEAR-5-?
    (LOAD-FRAMES-5-6 () TALLY 100)
  )
(CONCLUDE YEAR-5-? YES TALLY 100)
(CONCLUDE YEAR-OF-COMPUTATION
  (PLUS
    (VALUE-OF YEAR-OF-COMPUTATION ()
     1)
    TALLY 100)))

SUBJECT YEAR-4-RULES)

(INSTANTIATE-FRAME-RULE001
 PREMISE ($AND (SAME YEAR-2-? YES)
   (SAME YEAR-2-DUMMY-PARM YES))
 ACTION
 (DO-ALL
  (CONCLUDE YEAR-2-FLAG YES TALLY 100))
SUBJECT YEAR-RULES)

(INSTANTIATE-FRAME-RULE002
 PREMISE ($AND (SAME YEAR-2-? YES))
 ACTION
 (DO-ALL
  (CONCLUDE YEAR-2-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-2-RULES)

(INSTANTIATE-FRAME-RULE003
 PREMISE ($AND (SAME YEAR-3-? YES)
   (SAME YEAR-3-DUMMY-PARM))
 ACTION
 (DO-ALL
  (CONCLUDE YEAR-3-FLAG YES TALLY 100))
SUBJECT YEAR-2-RULES)

(INSTANTIATE-FRAME-RULE004
 PREMISE ($AND (SAME YEAR-3-? YES))
 ACTION
(DO-ALL
   (CONCLUDE YEAR-3-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-3-RULES)

(INSTANTIATE-FRAME-4-RULE001
 PREMISE ($AND (SAME YEAR-4-? YES)
            (SAME YEAR-4-DUMMY-PARM))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-4-FLAG YES TALLY 100))
SUBJECT YEAR-3-RULES)

(INSTANTIATE-FRAME-4-RULE002
 PREMISE ($AND (SAME YEAR-4-? YES))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-4-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-4-RULES)

(INSTANTIATE-FRAME-5-RULE001
 PREMISE ($AND (SAME YEAR-5-? YES)
            (SAME YEAR-5-DUMMY-PARM))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-5-FLAG YES TALLY 100))
SUBJECT YEAR-4-RULES)

(INSTANTIATE-FRAME-5-RULE002
 PREMISE ($AND (SAME YEAR-5-? YES))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-5-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-5-RULES)

(INSTANTIATE-FRAME-6-RULE001
 PREMISE ($AND (SAME YEAR-6-? YES)
            (SAME YEAR-6-DUMMY-PARM))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-6-FLAG YES TALLY 100))
SUBJECT YEAR-5-RULES)

(INSTANTIATE-FRAME-6-RULE002
 PREMISE ($AND (SAME YEAR-6-? YES))
ACTION
  (DO-ALL
   (CONCLUDE YEAR-6-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-6-RULES)

DATE RULES
(DATE-RULE001
 PREMISE ($AND (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850101))
ACTION
  (DO-ALL
(MPRINTT "This system does not have the knowledge to do calculations for automobiles acquired before January 1, 1985")

(CONCLUDE ITC "NOT COMPUTED" TALLY 100)
(CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR "NOT COMPUTED" TALLY 100)
(CONCLUDE YEAR-2-FLAG "NOT COMPUTED" TALLY 100))

SUBJECT YEAR-RULES)

(RULE-REFORMAT-DATE
PREMISE (SAND (KNOWN AUTOMOBILE-DATE))
ACTION (DO-ALL
(CONCLUDE AUTOMOBILE-DATE-ACQUIRED
 (REFORMAT-DATE (VALUE-OF AUTOMOBILE-DATE ())
 TALLY 100))
(CONCLUDE AUTOMOBILE-DATE-DISPOSED
 (REFORMAT-DATE (VALUE-OF DATE-DISPOSED ())
 TALLY 100))
(CONCLUDE MONTH-ACQUIRED
 (REFORMAT-MONTH (VALUE-OF AUTOMOBILE-DATE ACQUIRED ())
 TALLY 100))
(CONCLUDE MONTH-DISPOSED
 (REFORMAT-MONTH (VALUE-OF AUTOMOBILE-DATE-DISPOSED ())
 TALLY 100))
(CONCLUDE YEAR-DISPOSED
 (REFORMAT-YEAR (VALUE-OF AUTOMOBILE-DATE-DISPOSED ())
 TALLY 100))
(CONCLUDE YEAR-OF-COMPUTATION
 (REFORMAT-YEAR (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ())
 TALLY 100))

SUBJECT YEAR-RULES)

Definition of context for second year calculations
(YEAR-2
GOALS (ITC-RECAPTURE
 ACRS-RECAPTURE
 COST-RECOVERY-DEDUCTION-2ND-YEAR
 YEAR-3-FLAG)
DISPLAYRESULTS #TTRUE)

Definition of parameters for second year calculations

(BUSINESS-USE-2ND-YEAR
PROMPT (WHAT list list | percentage | business | list list | list list)
automobile | during | list list | SECOND YEAR ?)

TYPE SINGLEVALUED
EXPECT NUMBER
RANGE (0 1))

(COST-RECOVERY-DEDUCTION-2ND-YEAR
UPDATED-BY (FULLY-DEPRECIATED-RULE-YR-2
EARLY-DISPOSITION-YR-2-RULE001
EARLY-DISPOSITION-YR-2-RULE002
EARLY-DISPOSITION-YR-2-RULE003

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DEDUCTION-COMPUTATION-YR-2)

(ITC-RECAPTURE
UPDATED-BY (ITC-RECAPTURE-YR-2-RULE001 ITC-RECAPTURE-YR-2-RULE002
ITC-RECAPTURE-YR-2-RULE003))

(ACRS-RECAPTURE UPDATED-BY (ACRS-RECAPTURE-YR-2-RULE001
ACRS-RECAPTURE-YR-2-RULE002
ACRS-RECAPTURE-YR-2-RULE003
ACRS-RECAPTURE-YR-2-RULE004))

(PRODUCTION-OF-INCOME-USE-2ND-YEAR
ASKFIRST #!TRUE
EXPECT NUMBER
RANGE (0 1)
PROMPT ((What list thel |percentage| lofl lusel lthel lautomobile| lwasl
lusel |lfor| lthel |lproduction| lofl lincome| ?)
TYPE SINGLEVALUED)

(YEAR-3-FLAG UPDATED-BY (COMPUTE-YR-3 INSTANTIATE-FRAME-RULE003))

(YEAR-3-DUMMY-PARM
UPDATED-BY (INSTANTIATE-FRAME-RULE004))

(YEAR-3-?
EXPECT (YES NO)
PROMPT (Would| lyoul ll|like ll| |lexamincl
lthel ltaxl lconsequencesl lofl lthel l|businessl lusel
lofl lthel lautomobile| lfor| lthel THIRD TAX lyear| ?))

(MID-QUARTER-CONVENTION-DISPOSITION-RATE
UPDATED-BY (MID-QUARTER-CONVENTION-RATE-AFTER-1ST-YR))

Definition of rules for second year calculations

DEDUCTION RULES
(FULLY-DEPRECIATED-RULE-YR-2
SUBJECT YEAR-2-RULES
PREMISE
($AND
 (EQUAL* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR 0
TALLY 100))
TRANSLATION "The asset is fully depreciated, no cost recovery deduction is available")

(MID-QUARTER-CONVENTION-RATE-AFTER-1ST-YR
SUBJECT YEAR-2-RULES
PREMISE
($AND
 (KNOWN MACRS-CONVENTION MID-QUARTER-CONVENTION))
ACTION (DO-ALL (CONCLUDE MID-QUARTER-CONVENTION-DISPOSITION-RATE
(FIND-MID-QUARTER-RATE
 (VALUE-OF MONTH-DISPOSED ()) TALLY 100))

104
TRANSLATION ""

(EARLY-DISPOSITION-YR-2-RULE001
SUBJECT YEAR-2-RULES
PREMISE
($AND
(EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ()) (VALUE-OF YEAR-DISPOSED ()))
($OR
(SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
(SAME ACRS-METHOD ACRS)))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR 0
TALLY 100)
(CONCLUDE YEAR-3-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS-CALC
"NOT APPLICABLE" TALLY 100))
TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in
the year you dispose or retire an asset.""

(EARLY-DISPOSITION-YR-2-RULE002
SUBJECT YEAR-2-RULES
PREMISE
($AND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
(KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
(KNOWN BUSINESS-USE 2ND-YEAR))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
(TIMES (VALUE-OF BUSINESS-USE-2ND-YEAR ())
(MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ())
(TIMES
(VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ())
(TIMES (VALUE-OF AUTOMOBILE-BASIS ())
(VALUE-OF SECOND-YEAR-RATE ()))))
TALLY 100)
(CONCLUDE YEAR-3-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
(VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
TALLY 100))

(EARLY-DISPOSITION-YR-2-RULE003
SUBJECT YEAR-2-RULES
PREMISE
($AND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(KNOWN BUSINESS-USE-2ND-YEAR))
ACTION

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(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-2ND-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ())
        (TIMES
          .5
        (TIMES
          (VALUE-OF AUTOMOBILE-BASIS ())
          (VALUE-OF SECOND-YEAR-RATE ()))))
    TALLY 100)
  (CONCLUDE YEAR-3-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
      (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
    TALLY 100))
)

(DEDUCTION-COMPUTATION-YR-2
  SUBJECT YEAR-2-RULES
  PREMISE ($AND (KNOWN BUSINESS-USE-2ND-YEAR)
    ($OR
      (SAME MACRS-METHOD 200%-DECLINING-BALANCE)
      (SAME MACRS-METHOD STRAIGHT-LINE)))
  ACTION
    (DO-ALL
      (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
        (TIMES
          (VALUE-OF BUSINESS-USE-2ND-YEAR ())
          (MIN* (MAX*
            (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ())
            (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
          (TIMES
            (VALUE-OF AUTOMOBILE-BASIS ())
            (VALUE-OF SECOND-YEAR-RATE ()))))
        TALLY 100)
      (CONCLUDE AUTOMOBILE-BASIS
        (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
          (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR))
        TALLY 100))
    ELSE
      (DO-ALL
        (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
          (TIMES
            (VALUE-OF BUSINESS-USE-2ND-YEAR ())
            (MIN* (MAX*
              (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ())
              (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
            (TIMES
              (VALUE-OF AUTOMOBILE-BASIS ())
              (VALUE-OF SECOND-YEAR-RATE ()))))
          TALLY 100))
      )

ITC-RECAPTURE RULES
  (ITC-RECAPTURE-YR-2-RULE001
    SUBJECT YEAR-2-RULES
  )

106
PREMISE
$(\text{AND \ (SAME \ ITC \ "NOT \ COMPUTED"\}))$

ACTION
$(\text{DO-ALL})$
$(\text{CONCLUDE \ ITC-RECAPTURE \ "NOT \ APPLICABLE" \ TALLY \ 100}))$

(ITC-RECAPTURE-YR-2-RULE002
SUBJECT \ YEAR-2-RULES
PREMISE
$(\text{AND \ (LESSP* \ (VALUE-OF \ BUSINESS-USE-2ND-YEAR \ () \ .5))})$

ACTION
$(\text{DO-ALL})$
$(\text{CONCLUDE \ ITC-RECAPTURE \ (VALUE-OF \ ITC \ () \ TALLY \ 100))))$

(ITC-RECAPTURE-YR-2-RULE003
PREMISE $(\text{AND})$
$(\text{GREATERP* \ (VALUE-OF \ BUSINESS-USE-1ST-YEAR \ () \ (VALUE-OF \ BUSINESS-USE-2ND-YEAR \ ())})$

ACTION
$(\text{DO-ALL})$
$(\text{CONCLUDE \ ITC-RECAPTURE \ (TIMES \ (VALUE-OF \ ITC \ ()) \ (DIFFERENCE \ (VALUE-OF \ BUSINESS-USE-1ST-YEAR \ () \ (VALUE-OF \ BUSINESS-USE-2ND-YEAR \ ())))) \ TALLY \ 100})$
$(\text{CONCLUDE \ ITC \ (DIFFERENCE \ (VALUE-OF \ ITC \ ()) \ (VALUE-OF \ ITC-RECAPTURE \ ()) \ TALLY \ 100}))$

SUBJECT \ YEAR-2-RULES)

ACRS RECAPTURE RULES
(ACRS-RECAPTURE-YR-2-RULE001
PREMISE $(\text{OR})$
$(\text{GREATERP* \ (VALUE-OF \ BUSINESS-USE-2ND-YEAR \ ()) \ 0.5})$
$(\text{SAME \ ACRS-METHOD \ ALTERNATE-ACRS-METHOD})$
$(\text{SAME \ MACRS-METHOD \ ALTERNATE-MACRS-METHOD}))$

ACTION
$(\text{DO-ALL})$
$(\text{CONCLUDE \ ACRS-RECAPTURE \ "NOT \ APPLICABLE" \ TALLY \ 100}))$

SUBJECT \ YEAR-2-RULES)

(ACRS-RECAPTURE-YR-2-RULE002
PREMISE $(\text{AND})$
$(\text{LESSEQ* \ (VALUE-OF \ BUSINESS-USE-2ND-YEAR \ ()) \ 0.5})$
$(\text{OR})$
$(\text{SAME \ MACRS-METHOD \ 200%-DECLINING-BALANCE})$
$(\text{SAME \ MACRS-METHOD \ STRAIGHT-LINE}))$

ACTION
$(\text{DO-ALL})$
$(\text{CONCLUDE \ SECOND-YEAR-RATE \ .20 \ TALLY \ 100})$
$(\text{CONCLUDE \ THIRD-YEAR-RATE \ .20 \ TALLY \ 100})$
$(\text{CONCLUDE \ FOURTH-YEAR-RATE \ .20 \ TALLY \ 100})$
$(\text{CONCLUDE \ FIFTH-YEAR-RATE \ .20 \ TALLY \ 100})$
(CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
(CONCLUDE MACRS-METHOD ALTERNATE-MACRS-METHOD TALLY 100))
SUBJECT YEAR-2-RULES)

(ACRS-RECAPTURE-YR-2-RULE003
PREMISE ($AND
    (LESSEQ* (VALUE-OF BUSINESS-USE-2ND-YEAR ()) 0.5)
    (SAME ACRS-METHOD ACRS))
ACTION
(DO-ALL
    (CONCLUDE SECOND-YEAR-RATE .20 TALLY 100)
    (CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
    (CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
    (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
    (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
    (CONCLUDE ACRS-METHOD ALTERNATE-ACRS-METHOD TALLY 100))
SUBJECT YEAR-2-RULES)

(ACRS-RECAPTURE-YR-2-RULE004
PREMISE
($OR
    (EQUAL* (VALUE-OF YEAR-DISPOSED ())
        (VALUE-OF YEAR-OF-COMPUTATION ()))
    (LESSEQ* (VALUE-OF BUSINESS-USE-2ND-YEAR ()) 0.5))
ACTION
(DO-ALL
    (CONCLUDE RECOMPUTED-1ST-YEAR-DEDUCTION
        (MIN*
            (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
            (TIMES
                (VALUE-OF BUSINESS-USE-1ST-YEAR ())
                (TIMES
                    (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
                    .1))) TALLY 100)
    (CONCLUDE ACRS-RECAPTURE
        (DIFFERENCE
            (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
            (VALUE-OF RECOMPUTED-1ST-YEAR-DEDUCTION ()))
        TALLY 100)
    (CONCLUDE AUTOMOBILE-BASIS
        (PLUS
            (DIFFERENCE
                (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
                (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
                (VALUE-OF ACRS-RECAPTURE ()))
            TALLY 100))
    SUBJECT YEAR-2-RULES)

(COMPUTE-YR-3
PREMISE ($AND
    (SAME YEAR-3-? YES)) ACTION
(DO-ALL
    (CONCLUDE YEAR-OF-COMPUTATION


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Definition of context for third year calculations
(YEAR-3
  INITIALDATA ()
  GOALS (ITC-RECAPTURE-3 ACRS-RECAPTURE-3 COST-RECOVERY-DEDUCTION-
        3RD-YEAR
        YEAR-4-FLAG)
  DISPLAYRESULTS #!TRUE)

Definition of parameters for third year calculations

(BUSINESS-USE-3RD-YEAR
  RANGE (0 1)
  EXPECT NUMBER
  TYPE SINGLEVALUED
  PROMPT (What list lthe lpercentage lofl lbusiness luse llofl lthe
          lautomobilel lduringl lthe lTHIRD YEAR ?))

(COST-RECOVERY-DEDUCTION-3RD-YEAR
  UPDATED-BY (FULLY-DEPRECIATED-RULE-YR-3
              DEDUCTION-COMPUTATION-YR-3
              EARLY-DISPOSITION-YR-3-RULE001 EARLY-DISPOSITION-YR-3-RULE002
              EARLY-DISPOSITION-YR-3-RULE003))

(PRODUCTION-OF-INCOME-USE-3RD-YEAR
  ASKFIRST #!TRUE
  PROMPT (What list lthe lpercentage lofl luse lthe lautomobile lwasl
          lusedl lfrol lthe lproductionl lofl lincome ?!
  TYPE SINGLEVALUED
  EXPECT NUMBER
  RANGE (0 1))

(ITC-RECAPTURE-3
  UPDATED-BY (ITC-RECAPTURE-YR-3-RULE001
               ITC-RECAPTURE-YR-3-RULE002 ITC-RECAPTURE-YR-3-RULE003
               ITC-RECAPTURE-YR-3-RULE004))

(ACRS-RECAPTURE-3 UPDATED-BY (ACRS-RECAPTURE-YR-3-RULE001
                              ACRS-RECAPTURE-YR-3-RULE002
                              ACRS-RECAPTURE-YR-3-RULE003
                              ACRS-RECAPTURE-YR-3-RULE004))

(YEAR-4-FLAG UPDATED-BY (COMPUTE-YR-4 INSTANTIATE-FRAME-4-RULE001))

(YEAR-4-DUMMY-PARM
  UPDATED-BY (INSTANTIATE-FRAME-4-RULE002))
Definition of rules for third year calculations

DEDUCTION RULES(FULLY-DEPRECIATED-RULE-YR-3
SUBJECT YEAR-3-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF AUTOMOBILE-BASIS ())) 0)
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR 0
TALLY 100))
TRANSLATION "The asset is fully depreciated, no cost recovery deduction is available")

(DEDUCTION-COMPUTATION-YR-3
SUBJECT YEAR-3-RULES
PREMISE ($AND (KNOWN BUSINESS-USE-3RD-YEAR)
(SOR
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(SAME MACRS-METHOD STRAIGHT-LINE)))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR
(TIMES
(VALUE-OF BUSINESS-USE-3RD-YEAR ()
(MIN*
(VALUE-OF MAXIMUM-COST-RECOVERY-3RD-YEAR ()
(TIMES
(VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF THIRD-YEAR-RATE ())))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR))
TALLY 100))
ELSE
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR
(TIMES
(VALUE-OF BUSINESS-USE-3RD-YEAR ()
(MIN*
(MAX*
(VALUE-OF MAXIMUM-COST-RECOVERY-3RD-YEAR ()
(VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()))
(TIMES
(VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF THIRD-YEAR-RATE ())))
TALLY 100)))

(EARLY-DISPOSITION-YR-3-RULE001
SUBJECT YEAR-3-RULES
PREMISE
(SAND
 (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ()) (VALUE-OF YEAR-DISPOSED ()))
 ($OR
 (SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
 (SAME ACRS-METHOD ACRS))
 ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR 0
 TALLY 100)
 (CONCLUDE YEAR-4-FLAG NO TALLY 100))
 TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in
 the year you dispose or retire an asset."
)

(EARLY-DISPOSITION-YR-3-RULE002
 SUBJECT YEAR-3-RULES
 PREMISE
 (SAND
 (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
 (SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
 (KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
 (KNOWN BUSINESS-USE-3RD-YEAR))
 ACTION
 (DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR
 (TIMES (VALUE-OF BUSINESS-USE-3RD-YEAR ())
 (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-3RD-YEAR ())
 (TIMES
 (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ())
 (TIMES
 (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF THIRD-YEAR-RATE ())))))
 TALLY 100)
 (CONCLUDE YEAR-4-FLAG NO TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ()))
 TALLY 100))))

(EARLY-DISPOSITION-YR-3-RULE003
 SUBJECT YEAR-3-RULES
 PREMISE
 (SAND
 (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
 (SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
 (KNOWN BUSINESS-USE-3RD-YEAR))
 ACTION
 (DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-3RD-YEAR
 (TIMES (VALUE-OF BUSINESS-USE-3RD-YEAR ())
 (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-3RD-YEAR ())
 (TIMES

111
.5
(TIMES
(VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF SECOND-YEAR-RATE ())))
TALLY 100)
(CONCLUDE YEAR-3-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ()))
TALLY 100)))

ITC-RECAPTURE RULES
(ITC-RECAPTURE-YR-3-RULE001
PREMISE ($AND
(GREATEQ* (VALUE-OF ITC-RECAPTURE ()) 0))
ACTION
(ETHER)
(CONCLUDE ITC-RECAPTURE-3 "RECAPTURED PREVIOUS YEAR" TALLY 100))
SUBJECT YEAR-3-RULES)

(ITC-RECAPTURE-YR-3-RULE002
SUBJECT YEAR-3-RULES
PREMISE
($AND (SAME ITC "NOT COMPUTED"))
ACTION
(ETHER)
(CONCLUDE ITC-RECAPTURE-3 "NOT APPLICABLE" TALLY 100)))

(ITC-RECAPTURE-YR-3-RULE003
SUBJECT YEAR-3-RULES
PREMISE
($AND (LESEP* (VALUE-OF BUSINESS-USE-3RD-YEAR ()) .5))
ACTION
(ETHER)
(CONCLUDE ITC-RECAPTURE-3
(TIMES
(VALUE-OF ITC ()
.66)
TALLY 100)))

(ITC-RECAPTURE-YR-3-RULE004
PREMISE ($AND
(GREATERP* (VALUE-OF BUSINESS-USE-2ND-YEAR ()
(VALUE-OF BUSINESS-USE-3RD-YEAR ())))
ACTION
(ETHER)
(CONCLUDE ITC-RECAPTURE-3
(TIMES
(TIMES
(VALUE-OF ITC ()
(DIFFERENCE (VALUE-OF BUSINESS-USE-2ND-YEAR ()
(VALUE-OF BUSINESS-USE-3RD-YEAR ()))
.66)
TALLY 100)))

112
SUBJECT YEAR-3-RULES

**ACRS RECAPTURE RULES**

(ACRS-RECAPTURE-YR-3-RULE001

PREMISE ($OR

(GREATERP* (VALUE-OF BUSINESS-USE-3RD-YEAR () 0.5)
(SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
(SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))

ACTION

(.DO-ALL

(CONCLUDE ACRS-RECAPTURE-3 "NOT APPLICABLE" TALLY 100)

SUBJECT YEAR-3-RULES)

(ACRS-RECAPTURE-YR-3-RULE002

PREMISE ($AND

(LESSEQ* (VALUE-OF BUSINESS-USE-3RD-YEAR () 0.5)
($OR

(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(SAME MACRS-METHOD STRAIGHT-LINE)))

ACTION

(.DO-ALL

(CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
(CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
(CONCLUDE MACRS-METHOD ALTERNATE-MACRS-METHOD TALLY 100)

SUBJECT YEAR-3-RULES)

(ACRS-RECAPTURE-YR-3-RULE003

PREMISE ($AND

(LESSEQ* (VALUE-OF BUSINESS-USE-3RD-YEAR () 0.5)
(SAME ACRS-METHOD ACRS))

ACTION

(.DO-ALL

(CONCLUDE THIRD-YEAR-RATE .20 TALLY 100)
(CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
(CONCLUDE ACRS-METHOD ALTERNATE-ACRS-METHOD TALLY 100)

SUBJECT YEAR-3-RULES)

(ACRS-RECAPTURE-YR-3-RULE004

PREMISE ($AND

(LESSEQ* (VALUE-OF BUSINESS-USE-3TH-YEAR () 0.5))

ACTION

(.DO-ALL

(CONCLUDE COST-RECOVERY-DEDUCTIONS-1-2-YRS

(PLUS

(VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ()
(VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ()) TALLY 100)

(CONCLUDE RECOMPUTED-1ST-YEAR-DEDUCTION

(MIN*

(VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ()
(TIMES
(VALUE-OF BUSINESS-USE-1ST-YEAR ()
(TIMES
 (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ()
 .1))) TALLY 100)

(CONCLUDE RECOMPUTED-2ND-YEAR-DEDUCTION
(MIN*
 (MAX*
 (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ()
 (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
 (TIMES
 (VALUE-OF BUSINESS-USE-1ST-YEAR ()
 (TIMES
 (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ()
 .2))) TALLY 100)

(CONCLUDE ACRS-RECAPTURE-3
(DIFFERENCE
 (VALUE-OF COST-RECOVERY-DEDUCTIONS-1-2-YRS ()
 (PLUS
 (VALUE-OF RECOMPUTED-1ST-YEAR-DEDUCTION ()
 (VALUE-OF RECOMPUTED-2ND-YEAR-DEDUCTION ())
 TALLY 100)

(CONCLUDE AUTOMOBILE-BASIS
(PLUS
 (DIFFERENCE
 (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ()
 (VALUE-OF COST-RECOVERY-DEDUCTIONS-1-2-YRS ())
 (VALUE-OF ACRS-RECAPTURE-3 ())
 TALLY 100))

SUBJECT YEAR-3-RULES)

(COMPUTE-YR-4
PREMISE ($AND
 (SAME YEAR-4-? YES))

ACTION
(Do-ALL
 (CONCLUDE YEAR-OF-COMPUTATION
 (PLUS
 (VALUE-OF YEAR-OF-COMPUTATION ()
 1)
 TALLY 100))

SUBJECT YEAR-3-RULES)

Definition of context for fourth year calculations

(YEAR-4
INITIALDATA ()
GOALS (ITC-RECAPTURE-4 ACRS-RECAPTURE-4 COST-RECOVERY-DEDUCTION-4TH-YEAR
 YEAR-5-FLAG)
DISPLAYRESULTS !TRUE)

Definition of parameters for fourth year calculations

(BUSINESS-USE-4TH-YEAR

114
(COST-RECOVERY-DEDUCTION-4TH-YEAR
UPDATED-BY
(FULLY-DEPRECIATED-RULE-YR-4
SWITCH-FROM-200%-TO-Straight-line
EARLY-DISPOSITION-YR-4-RULE001
EARLY-DISPOSITION-YR-4-RULE002 EARLY-DISPOSITION-YR-4-RULE003
EARLY-DISPOSITION-YR-4-RULE004 EARLY-DISPOSITION-YR-4-RULE005
DEDUCTION-COMPUTATION-YR-4-RULE001
DEDUCTION-COMPUTATION-YR-4-RULE002
DEDUCTION-COMPUTATION-YR-4-RULE003))

(ITC-RECAPTURE-4
UPDATED-BY (ITC-RECAPTURE-YR-4-RULE001 ITC-RECAPTURE-YR-4-RULE002
ITC-RECAPTURE-YR-4-RULE003))

(ACRS-RECAPTURE-4 UPDATED-BY (ACRS-RECAPTURE-YR-4-RULE001
ACRS-RECAPTURE-YR-4-RULE002
ACRS-RECAPTURE-YR-4-RULE003
ACRS-RECAPTURE-YR-4-RULE004))

(YEAR-5-FLAG UPDATED-BY (LOAD-FRAMES-5-6 INSTANTIATE-FRAME-5-
RULE001))

(YEAR-5-DUMMY-PARM
UPDATED-BY (INSTANTIATE-FRAME-5-RULE002))

(YEAR-5-
EXPECT (YES NO)
PROMPT (Would you like to examine the tax consequences of selling an automobile for a fifth tax year?)

DEDUCTION RULES
(FULLY-DEPRECIATED-RULE-YR-4
SUBJECT YEAR-4-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR 0 TALLY 100))
TRANSLATION "The asset is fully depreciated, no cost recovery deduction is available"

(SWITCH-FROM-200%-TO-Straight-line
PREMISE (SAND
(GREATERP* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) 0.5)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE))
ACTION

115
(DO-ALL
  (CONCLUDE FOURTH-YEAR-RATE .4 TALLY 100)
  (CONCLUDE FIFTH-YEAR-RATE .6667 TALLY 100)
  (CONCLUDE SIXTH-YEAR-RATE 1 TALLY 100)
  (CONCLUDE MACRS-METHOD STRAIGHT-LINE TALLY 100))
SUBJECT YEAR-4-RULES)

(EARLY-DISPOSITION-YR-4-RULE001
  SUBJECT YEAR-4-RULES
  PREMISE
  ($AND
    (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ()) (VALUE-OF YEAR-DISPOSED () ))
    ($OR
      (SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
      (SAME ACRS-METHOD ACRS))
  ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR 0 TALLY 100)
      (CONCLUDE YEAR-5-FLAG NO TALLY 100))
    TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in the year you dispose or retire an asset."
)

(EARLY-DISPOSITION-YR-4-RULE002
  SUBJECT YEAR-4-RULES
  PREMISE
  ($AND
    (EQUAL* (VALUE OF YEAR DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ())
    (SAME MACRS-METHOD 200%-DECLINING-BALANCE)
    (SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
    (KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
    (KNOWN BUSINESS-USE-4TH-YEAR))
  ACTION
    (DO-ALL
      (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
        (TIMES (VALUE-OF BUSINESS-USE-4TH-YEAR ())
          (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
            (TIMES
              (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ())
              (TIMES
                (VALUE-OF FOURTH-YEAR-RATE ())
                (VALUE-OF AUTOMOBILE-BASIS ()))))
            TALLY 100)
      (CONCLUDE YEAR-5-FLAG NO TALLY 100)
      (CONCLUDE AUTOMOBILE-BASIS
        (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
          (VALUE-OF COST-RECOVERY-DEDUCTION-4TH-YEAR ())
          TALLY 100)))
    
  (EARLY-DISPOSITION-YR-4-RULE003


116
SUBJECT YEAR-4-RULES
PREMISE
(SAND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
  ($OR (SAME MACRS-METHOD STRAIGHT-LINE)
    (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))
  (SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
  (KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
  (KNOWN BUSINESS-USE-4TH-YEAR))

ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-4TH-YEAR ())
      (MIN* (VALUE-OF
        MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
      (TIMES
        (VALUE-OF
          MID-QUARTER-CONVENTION-DISPOSITION-RATE ()
        (TIMES
          (VALUE-OF FOURTH-YEAR-RATE ())
          (VALUE-OF AUTOMOBILE-BASIS ())))
      TALLY 100))
  (CONCLUDE YEAR-5-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-4TH-YEAR ())
    TALLY 100)))

(EARLY-DISPOSITION-YR-4-RULE004
SUBJECT YEAR-4-RULES
PREMISE
(SAND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
  (KNOWN BUSINESS-USE-4TH-YEAR)
  (SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
  ($OR (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
    (SAME MACRS-METHOD STRAIGHT-LINE)))
ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-2ND-YEAR ())
      (MIN* (VALUE-OF
        MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
      (TIMES
        .5
        (TIMES
          (VALUE-OF AUTOMOBILE-BASIS ())
          (VALUE-OF FOURTH-YEAR-RATE ()))))
    TALLY 100))
  (CONCLUDE YEAR-3-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
  (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ()))
TALLY 100)))

(EARLY-DISPOSITION-YR-4-RULE005
SUBJECT YEAR-4-RULES
PREMISE
($AND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
  (KNOWN BUSINESS-USE-4TH-YEAR)
  (SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
  (SAME MACRS-METHOD 200%-DECLINING-BALANCE))
ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-2ND-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-2ND-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
        (TIMES
          .5
          (TIMES
            (VALUE-OF AUTOMOBILE-BASIS ())(VALUE-OF FOURTH-YEAR-RATE ()))))
TALLY 100))
  (CONCLUDE YEAR-5-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
      (VALUE-OF COST-RECOVERY-DEDUCTION-4TH-YEAR ()))
TALLY 100)))))

(DEDUCTION-COMPUTATION-YR-4-RULE001
SUBJECT YEAR-4-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) .5)
  (SAME ACRS-METHOD ACRS))
ACTION
(DO-ALL
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
      (PLUS
        (PLUS
          (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
          (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
          (VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ()))))
TALLY 100)
  (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
    (TIMES
      (VALUE-OF BUSINESS-USE-4TH-YEAR ()
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
        (VALUE-OF AUTOMOBILE-BASIS ()))))
TALLY 100))
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
    (TALLY 100))
(continues)
(VALUE-OF COST-RECOVERY-DEDUCTION-4TH-YEAR ())
TALLY 100))
TRANSLATION "The cost recovery deduction in the fourth year using ACRS is limited to the
the lesser of either the maximum cost recovery deduction or the remaining basis of the
automobile")

(DEDUCTION-COMPUTATION-YR-4-RULE002
SUBJECT YEAR-4-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-2ND-YEAR ()) .5)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(GREATERP* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
(TIMES
 (VALUE-OF BUSINESS-USE-4TH-YEAR ())
 (MIN*
 (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
 (VALUE-OF AUTOMOBILE-BASIS ())))
TALLY 100))))

(DEDUCTION-COMPUTATION-YR-4-RULE003
SUBJECT YEAR-4-RULES
PREMISE ($OR
 (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
 (SAME ACRS-METHOD ALTERNATE-ACRS-METHOD))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
(TIMES
 (VALUE-OF BUSINESS-USE-4TH-YEAR ())
 (MIN*
 (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
 (TIMES
 (VALUE-OF FOURTH-YEAR-RATE ())
 (VALUE-OF AUTOMOBILE-BASIS ()))))
TALLY 100))))

ITC-RECAPTURE RULES
(ITC-RECAPTURE-YR-4-RULE001
SUBJECT YEAR-4-RULES
PREMISE
($AND (SAME ITC "NOT COMPUTED"))
ACTION
(DO-ALL
(CONCLUDE ITC-RECAPTURE-4 "NOT APPLICABLE" TALLY 100)))

(ITC-RECAPTURE-YR-4-RULE002
SUBJECT YEAR-4-RULES
PREMISE
($AND (LESSP* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) .5))
ACTION
(DO-ALL
(CONCLUDE ITC-RECAPTURE-4
TRANSLATION "The amount of the Investment Tax Credit recaptured when the property is disposed of or otherwise ceases to be qualified investment property within the third full year after placement in service is equal to 33% of the original credit claimed."

(ITC-RECAPTURE-YR-4-RULE003
PREMISE ($AND
  (GREATERP* (VALUE-OF BUSINESS-USE-3RD-YEAR ()
   (VALUE-OF BUSINESS-USE-4TH-YEAR ())))
ACTION
(DO-ALL
  (CONCLUDE ITC-RECAPTURE-4
   (TIMES (VALUE-OF ITC ()
     (DIFFERENCE (VALUE-OF BUSINESS-USE-3RD-YEAR ()
       (VALUE-OF BUSINESS-USE-4TH-YEAR ())))
     TALLY 100)
   (CONCLUDE ITC
    (DIFFERENCE (VALUE-OF ITC ()
     (VALUE-OF ITC-RECAPTURE-4 ()) TALLY 100))
SUBJECT YEAR-4-RULES)

ACRS RECAPTURE RULES
(ACRS-RECAPTURE-YR-4-RULE001
PREMISE ($OR
  (GREATERP* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) 0.5)
  (SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
  (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))
ACTION
(DO-ALL
  (CONCLUDE ACRS-RECAPTURE-4 "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-4-RULES)

(ACRS-RECAPTURE-YR-4-RULE002
PREMISE ($AND
  (LESSEQ* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) 0.5)
  ($OR
   (SAME MACRS-METHOD 200%-DECLINING-BALANCE)
   (SAME MACRS-METHOD STRAIGHT-LINE)))
ACTION
(DO-ALL
  (CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
  (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
  (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
  (CONCLUDE MACRS-METHOD ALTERNATE-MACRS-METHOD TALLY 100))
SUBJECT YEAR-4-RULES)

(ACRS-RECAPTURE-YR-4-RULE003
PREMISE ($AND
  (LESSEQ* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) 0.5)
  (SAME ACRS-METHOD ACRS))
ACTION
(DO-ALL

120
(CONCLUDE FOURTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
(CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
(CONCLUDE ACRS-METHOD ALTERNATE-ACRS-METHOD TALLY 100))
SUBJECT YEAR-4-RULES)

(ACRS-RECAPTURE-YR-4-RULE004
PREMISE ($AND
  (LESSEQ* (VALUE-OF BUSINESS-USE-4TH-YEAR ()) 0.5))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTIONS-1-3-YRS
  (PLUS
    (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
    (PLUS
      (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
      (VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ())))) TALLY 100)
(CONCLUDE RECOMPUTED-1ST-YEAR-DEDUCTION
  (MIN*
    (VALUE-OF MAXIMUM-COST-RECOVERY-FIRST-YEAR ())
    (TIMES
      (VALUE-OF BUSINESS-USE-1ST-YEAR ())
      (TIMES
        (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
        .1))) TALLY 100)
(CONCLUDE RECOMPUTED-2ND-YEAR-DEDUCTION
  (MIN*
    (MAX*
      (VALUE-OF MAXIMUM-COST-RECOVERY-2ND-YEAR ())
      (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
      (TIMES
        (VALUE-OF BUSINESS-USE-1ST-YEAR ())
        (TIMES
          (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
          .2))) TALLY 100)
(CONCLUDE RECOMPUTED-3RD-YEAR-DEDUCTION
  (MIN*
    (MAX*
      (VALUE-OF MAXIMUM-COST-RECOVERY-3RD-YEAR ())
      (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
      (TIMES
        (VALUE-OF BUSINESS-USE-3RD-YEAR ())
        (TIMES
          (VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
          .2))) TALLY 100)

(CONCLUDE ACRS-RECAPTURE-4
  (DIFFERENCE
    (VALUE-OF COST-RECOVERY-DEDUCTIONS-1-3-YRS ())
    (PLUS
      (PLUS
        (VALUE-OF RECOMPUTED-1ST-YEAR-DEDUCTION ())
        (VALUE-OF RECOMPUTED-2ND-YEAR-DEDUCTION ()))))
(VALUE-OF RECOMPUTED-3RD-YEAR-DEDUCTION ()))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(PLUS
(DIFFERENCE
(VALUE-OF AUTOMOBILE-BASIS-BEFORE-179-ADJ ())
(VALUE-OF COST-RECOVERY-DEDUCTIONS-1-3-YRS ())
(VALUE-OF ACRS-RECAPTURE-4 ()))
TALLY 100))
SUBJECT YEAR-4-RULES)

Definition of the context for the fifth year calculations
(YEAR-5
INITIALDATA ()
GOALS (ACRS-RECAPTURE-5 COST-RECOVERY-DEDUCTION-5TH-YEAR
YEAR-6-FLAG)
DISPLAYRESULTS #!TRUE)

Definition of the parameters for the fifth year calculations
(BUSINESS-USE-5TH-YEAR
PROMPT (WHAT IS THE PERCENTAGE OF BUSINESS LOSE I THE
AUTOMOBILE ITDURING I THE FIFTH YEAR ?)
TYPE SINGLEVALEUED
EXPECT NUMBER
RANGE (0 1))

(COST RECOVERY-DEDUCTION-5TH-YEAR
UPDATED-BY (FULLY-DEPRECIATED-RULE-YR-5
EARLY-DISPOSITION-YR-5-RULE001
EARLY-DISPOSITION-YR-5-RULE002 EARLY-DISPOSITION-YR-5-RULE003
EARLY-DISPOSITION-YR-5-RULE004 EARLY-DISPOSITION-YR-5-RULE005
DEDUCTION-COMPUTATION-YR-5-RULE001
DEDUCTION-COMPUTATION-YR-5-RULE002
DEDUCTION-COMPUTATION-YR-5-RULE003))

(ACRS-RECAPTURE-5 UPDATED-BY (ACRS-RECAPTURE-YR-5-RULE001
ACRS-RECAPTURE-YR-5-RULE002
ACRS-RECAPTURE-YR-5-RULE003))

(YEAR-6-FLAG UPDATED-BY (COMPUTE-YR-6 INSTANTIATE-FRAME-6-RULE001))

(YEAR-6-DUMMY-PARM
UPDATED-BY (INSTANTIATE-FRAME-6-RULE002))

(YEAR-6-
EXPECT (YES NO)
PROMPT (WOULD YOU LIKE TO EXAMINE THE SIXTH TAX YEAR ?)

DEDUCTION RULES
(FULLY-DEPRECIATED-RULE-YR-5
SUBJECT YEAR-5-RULES

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PREMISE
(SAND
 (EQUAL* (VALUE-OF AUTOMOBILE-BASIS () 0))
 ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR 0 TALLY 100))
 TRANSLATION "The asset is fully depreciated, no cost recovery deduction is available")

(EARLY-DISPOSITION-YR-5-RULE001
 SUBJECT YEAR-5-RULES
 PREMISE
 (SAND
 (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION () (VALUE-OF YEAR-DISPOSED ()))
 ($OR
 (SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
 (SAME ACRS-METHOD ACRS))
 ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR 0 TALLY 100)
 (CONCLUDE YEAR-6-FLAG NO TALLY 100))
 TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in the year you dispose or retire an asset.")

(EARLY-DISPOSITION-YR-5-RULE002
 SUBJECT YEAR-5-RULES
 PREMISE
 (SAND
 (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ())
 ($SAME MACRS-METHOD 200%-DECLINING-BALANCE)
 ($SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
 ($KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
 ($KNOWN BUSINESS-USE-5TH-YEAR))
 ACTION
 (DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-4TH-YEAR
 (TIMES (VALUE-OF BUSINESS-USE-5TH-YEAR ())
 (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
 (TIMES (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ())
 (TIMES (VALUE-OF FIFTH-YEAR-RATE ())
 (VALUE-OF AUTOMOBILE-BASIS ()))))
 TALLY 100)
 (CONCLUDE YEAR-5-FLAG NO TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
 (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
 (VALUE-OF COST-RECOVERY-DEDUCTION-5TH-YEAR ())
 TALLY 100)))

(EARLY-DISPOSITION-YR-5-RULE003
SUBJECT YEAR-5-RULES
PREMISE
($AND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()�))
  ($OR (SAME MACRS-METHOD STRAIGHT-LINE)
    (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
    (SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
    (KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
    (KNOWN BUSINESS-USE-5TH-YEAR))

ACTION
(.DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-5TH-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
        (TIMES
          (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ())
          (TIMES
            (VALUE-OF FIFTH-YEAR-RATE ())
            (VALUE-OF AUTOMOBILE-BASIS ()))))
  TALLY 100)
  (CONCLUDE YEAR-6-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-5TH-YEAR ())
  TALLY 100))

(EARLY-DISPOSITION-YR-5-RULE004
SUBJECT YEAR-5-RULES
PREMISE
($AND
  (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()�))
  (KNOWN BUSINESS-USE-5TH-YEAR)
  (SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
  ($OR (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
    (SAME MACRS-METHOD STRAIGHT-LINE))

ACTION
(.DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
    (TIMES (VALUE-OF BUSINESS-USE-5TH-YEAR ())
      (MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
        (TIMES
          .5
          (TIMES
            (VALUE-OF AUTOMOBILE-BASIS ())
            (VALUE-OF FIFTH-YEAR-RATE ()))))
  TALLY 100)
  (CONCLUDE YEAR-6-FLAG NO TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS

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(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-5TH-YEAR ()))
TALLY 100)))

(EARLY-DISPOSITION-YR-5-RULE005
SUBJECT YEAR-5-RULES
PREMISE ($AND (EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(KNOWN BUSINESS-USE-5TH-YEAR)
(SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-5TH-YEAR ())
(MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(TIMES .5
(TIMES (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF FIFTH-YEAR-RATE ()))))
TALLY 100)
(CONCLUDE YEAR-5-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-5TH-YEAR ())
TALLY 100)))

(DEDUCTION-COMPUTATION-YR-5-RULE001
SUBJECT YEAR-5-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-5TH-YEAR ()) .5)
(SAME ACRS-METHOD ACRS))
ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-5TH-YEAR ())
(MIN*
(VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(VALUE-OF AUTOMOBILE-BASIS ()))))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-5TH-YEAR ())
TALLY 100))

TRANSLATION "The cost recovery deduction in the fourth year using ACRS is limited to the
lesser of either the maximum cost recovery deduction or the remaining basis of the
automobile"

(DEDUCTION-COMPUTATION-YR-5-RULE002
SUBJECT YEAR-5-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-5TH-YEAR () .5)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(GREATERP* (VALUE-OF AUTOMOBILE-BASIS () 0))
 ACTION
( DO-ALL
( CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
( TIMES
( VALUE-OF BUSINESS-USE-5TH-YEAR ()
( MIN*
( VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()
( VALUE-OF AUTOMOBILE-BASIS ())))
 TALLY 100))

(DEDUCTION-COMPUTATION-YR-5-RULE003
SUBJECT YEAR-5-RULES
PREMISE ($AND
(SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
(SAME MACRS-METHOD ALTERNATE-ACRS-METHOD)
(GREATERP* (VALUE-OF AUTOMOBILE-BASIS () 0))
 ACTION
( DO-ALL
( CONCLUDE COST-RECOVERY-DEDUCTION-5TH-YEAR
( TIMES
( VALUE-OF BUSINESS-USE-5TH-YEAR ()
( MIN*
( VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()
( TIMES
( VALUE-OF FIFTH-YEAR-RATE ()
( VALUE-OF AUTOMOBILE-BASIS ())))
 TALLY 100))

ITC-RECAPTURE RULES
AFTER 3 YEARS OF BUSINESS USE AFTER THE YEAR OF ACQUISITION THERE IS
NO PROVISION FOR ITC RECAPTURE

ACRS RECAPTURE RULES
(ACRS-RECAPTURE-YR-5-RULE001
PREMISE ($AND
(GREATERP* (VALUE-OF BUSINESS-USE-5TH-YEAR () 0.5)
($OR
(SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
(SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))
 ACTION
( DO-ALL
( CONCLUDE ACRS-RECAPTURE-5 "NOT APPLICABLE" TALLY 100))
SUBJECT YEAR-5-RULES)

(\textasciitilde ACRS-RECAPTURE-YR-5-RULE002
PREMISE ($AND
(LESSEQ* (VALUE-OF BUSINESS-USE-5TH-YEAR () 0.5)
($OR
(SAME MACRS-METHOD MACRS)
(SAME MACRS-METHOD STRAIGHT-LINE))
 ACTION
(DO-ALL
 (CONCLUDE ACRS-RECAPTURE-5
 (DIFFERENCE
   (PLUS
    (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-4TH-YEAR ()))
   (TIMES
    (VALUE-OF AUTOMOBILE-COST ()) .7))
  TALLY 100)
 (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
 (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
 (CONCLUDE ACRS-METHOD ALTERNATE-MACRS-METHOD TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
   (PLUS
    (VALUE-OF AUTOMOBILE-BASIS ())
    (VALUE-OF ACRS-RECAPTURE-5 ())
  ) TALLY 100)
 SUBJECT YEAR-5-RULES)

(ACRS-RECAPTURE-YR-5-RULE003
 PREMISE ($AND
   (LESSEQ* (VALUE-OF BUSINESS-USE-5TH-YEAR ()) 0.5)
   (SAME ACRS-METHOD ACRS))
 ACTION
 (DO-ALL
 (CONCLUDE ACRS-RECAPTURE-5
 (DIFFERENCE
   (PLUS
    (VALUE-OF COST-RECOVERY-DEDUCTION-1ST-YEAR ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-2ND-YEAR ())
    (VALUE-OF COST-RECOVERY-DEDUCTION-3RD-YEAR ()))
   (TIMES
    (VALUE-OF AUTOMOBILE-COST ()) .7))
  TALLY 100)
 (CONCLUDE FIFTH-YEAR-RATE .20 TALLY 100)
 (CONCLUDE SIXTH-YEAR-RATE .10 TALLY 100)
 (CONCLUDE ACRS-METHOD ALTERNATE-MACRS-METHOD TALLY 100)
 (CONCLUDE AUTOMOBILE-BASIS
   (PLUS
    (VALUE-OF AUTOMOBILE-BASIS ())
    (VALUE-OF ACRS-RECAPTURE-5 ())
  ) TALLY 100)
 SUBJECT YEAR-5-RULES)

(COMPUTE-YR-6
 PREMISE ($AND
   (SAME YEAR-6? YES))
 ACTION
 (DO-ALL
 (CONCLUDE YEAR-OF-COMPUTATION
   (PLUS
    (VALUE-OF YEAR-OF-COMPUTATION ())
  )

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Definition of the context for the sixth year calculations
(YEAR-6
INITIALDATA ()
GOALS (ACRS-RECAPTURE-6 COST-RECOVERY-DEDUCTION-6TH-YEAR
       YEAR-7-FLAG)
DISPLAYRESULTS #!TRUE)

Definition of the parameters for the sixth year calculations
(BUSINESS-USE-6TH-YEAR
   PROMPT (What is the percentage of business use?
       automobile during sixth year?)
   TYPE SINGLEVALEGED
   EXPECT NUMBER
   RANGE (0 1))

(COST-RECOVERY-DEDUCTION-6TH-YEAR
   UPDATED-BY (FULLY-DEPRECIATED-RULE-YR-6
       EARLY-DISPOSITION-YR-6-RULE001
       EARLY-DISPOSITION-YR-6-RULE002 EARLY-DISPOSITION-YR-6-RULE003
       EARLY-DISPOSITION-YR-6-RULE004 EARLY-DISPOSITION-YR-6-RULE005
       DEDUCTION-COMPUTATION-YR-6-RULE001
       DEDUCTION-COMPUTATION-YR-6-RULE002
       DEDUCTION-COMPUTATION-YR-6-RULE003))

DEDUCTION RULES
(FULLY-DEPRECIATED-RULE-YR-6
   SUBJECT YEAR-6-RULES
   PREMISE
   ($AND
       ($EQUAL* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
   ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR 0
       TALLY 100))
   TRANSLATION "The asset is fully depreciated, no cost recovery deduction is available")

(EARLY-DISPOSITION-YR-6-RULE001
   SUBJECT YEAR-6-RULES
   PREMISE
   ($AND
       ($EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ()) (VALUE-OF YEAR-DISPOSED ()
       )))
   ($OR
       ($SAME ACRS-METHOD ALTERNATE-ACRS-METHOD)
       ($SAME ACRS-METHOD ACRS))
   ACTION (DO-ALL (CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR 0
       TALLY 100)
       (CONCLUDE YEAR-7-FLAG NO TALLY 100))
   TRANSLATION "The cost recovery deduction is denied, no ACRS deduction is allowed in the year you dispose or retire an asset.")
(EARLY-DISPOSITION-YR-6-RULE002
SUBJECT YEAR-6-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
(KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
(KNOWN BUSINESS-USE-6TH-YEAR))

ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-6TH-YEAR ())
(MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()))
(TIMES (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ()
(TIMES (VALUE-OF SIXTH-YEAR-RATE ())
(VALUE-OF AUTOMOBILE-BASIS ())))
TALLY 100))
(CONCLUDE YEAR-6-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-6TH-YEAR ())
TALLY 100)))

(EARLY-DISPOSITION-YR-6-RULE003
SUBJECT YEAR-6-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
($OR (SAME MACRS-METHOD STRAIGHT-LINE)
(SAME MACRS-METHOD ALTERNATE-MACRS-METHOD))
(SAME MACRS-CONVENTION MID-QUARTER-CONVENTION)
(KNOWN MID-QUARTER-CONVENTION-DISPOSITION-RATE)
(KNOWN BUSINESS-USE-6TH-YEAR))

ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-6TH-YEAR ())
(MIN* (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()))
(TIMES (VALUE-OF MID-QUARTER-CONVENTION-DISPOSITION-RATE ()
(TIMES (VALUE-OF SIXTH-YEAR-RATE ()

129
(VALUE-OF AUTOMOBILE-BASIS ())))
(TALLY 100)
(CONCLUDE YEAR-7-FLAG NOTALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-6TH-YEAR ()))
TALLY 100)))

(EARLY-DISPOSITION-YR-6-RULE004
SUBJECT YEAR-6-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(KNOWN BUSINESS-USE-6TH-YEAR)
(SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
($OR (SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
(SAME MACRS-METHOD STRAIGHT-LINE)))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-6TH-YEAR ()
(MIN* (VALUE-OF
MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(TIMES
.5
(TIMES
(VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF FIFTH-YEAR-RATE ()))))
TALLY 100)
(CONCLUDE YEAR-7-FLAG NOTALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ()
(VALUE-OF COST-RECOVERY-DEDUCTION-6TH-YEAR ()))
TALLY 100)))

(EARLY-DISPOSITION-YR-6-RULE005
SUBJECT YEAR-6-RULES
PREMISE
(SAND
(EQUAL* (VALUE-OF YEAR-DISPOSED ()) (VALUE-OF YEAR-OF-COMPUTATION ()))
(KNOWN BUSINESS-USE-6TH-YEAR)
(SAME MACRS-CONVENTION HALF-YEAR-CONVENTION)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES (VALUE-OF BUSINESS-USE-6TH-YEAR ()
(MIN* (VALUE-OF
MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(TIMES
.5
(TIMES
(VALUE-OF AUTOMOBILE-BASIS ())
(VALUE-OF SIXTH-YEAR-RATE ()))
TALLY 100)
(CONCLUDE YEAR-7-FLAG NO TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
(VALUE-OF COST-RECOVERY-DEDUCTION-6TH-YEAR ())
TALLY 100)))

(DEDUCTION-COMPUTATION-YR-6-RULE001
SUBJECT YEAR-6-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-6TH-YEAR ()) .5)
(SAME ACRS-METHOD ACRS))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES
(VALUE-OF BUSINESS-USE-6TH-YEAR ())
(MIN*
(VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(VALUE-OF AUTOMOBILE-BASIS ()))
TALLY 100))
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE (VALUE-OF AUTOMOBILE-BASIS ())
(VALUE-OF COST-RECOVERY-DEDUCTION-6TH-YEAR ()))
TALLY 100))
TRANSLATION "The cost recovery deduction in the fourth year using ACRS is limited to the lesser of either the maximum cost recovery deduction or the remaining basis of the automobile"

(DEDUCTION-COMPUTATION-YR-6-RULE002
SUBJECT YEAR-6-RULES
PREMISE ($AND (GREATERP* (VALUE-OF BUSINESS-USE-6TH-YEAR ()) .5)
(SAME MACRS-METHOD 200%-DECLINING-BALANCE)
(GREATERP* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR
(TIMES
(VALUE-OF BUSINESS-USE-6TH-YEAR ())
(MIN*
(VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ())
(VALUE-OF AUTOMOBILE-BASIS ()))
TALLY 100)))

(DEDUCTION-COMPUTATION-YR-6-RULE003
SUBJECT YEAR-6-RULES
PREMISE ($AND
(SAME MACRS-METHOD ALTERNATE-MACRS-METHOD)
(SAME MACRS-METHOD ALTERNATE-ACRS-METHOD)
(GREATERP* (VALUE-OF AUTOMOBILE-BASIS ()) 0))
ACTION
(DO-ALL
(CONCLUDE COST-RECOVERY-DEDUCTION-6TH-YEAR

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(TIMES
  (VALUE-OF BUSINESS-USE-6TH-YEAR ()
  (MIN*  
    (VALUE-OF MAXIMUM-COST-RECOVERY-SUBSEQUENT-YEARS ()
    (TIMES 
      (VALUE-OF SIXTH-YEAR-RATE ()
      (VALUE-OF AUTOMOBILE-BASIS ()))))
  TALLY 100)))

ITC-RECAPTURE RULES
AFTER 3 YEARS OF BUSINESS USE AFTER THE YEAR OF ACQUISITION THERE IS NO PROVISION FOR ITC RECAPTURE

ACRS RECAPTURE RULES
THE SIXTH YEAR IS THE LAST YEAR FOR COST RECOVERY DEDUCTIONS FOR ASSETS WITH A 5-YEAR CLASS LIFE. THEREFORE, NO ACRS-RECAPTURE WOULD BE APPLICABLE

B.2 Personal Use of a Company Car (KB)

Definition of the context structure for the personal use of a company car issue

(DEFINE ELEM-TABLE '((VEHICLE-FRINGES)))
(DOMAIN VALUE "Vehicle Provided by Employer")

Definition of the context for vehicle fringes

VEHICLE-FRINGES

(VEHICLE-FRINGES
  DISPLAYRESULTS #!TRUE
  GOALS (INCOME-FROM-FMV-AUTOMOBILE)
  INITIALDATA (METHOD-OF-VALUING-EMPLOYEE-USE))

Definition of the parameters for vehicle fringes

(CENTS-PER-MILE<15000
  PROMPT (IThe lcents-per-mile lratel lmust lbel ladjusted ltol lthelextent lfuell lisl lnotin lprovided lby lthelemployer.l
  (newline w3) llfuell lisl lprovided lby lthelemployer,l (newline w3) lthel lcents-per-mile-ratel = $ 0.21
  (newline w3) llfuell lisl lnotin lprovided,l (newline w3)
  lthel lcents-per-mile-ratel = $ 0.155)
  USED-BY (RULE038 RULE039 RULE037 RULE040) EXPECT (0.21 0.155))

(CENTS-PER-MILE>15000
  UPDATED-BY (RULE038 RULE039))

(FMV-FUEL
  PROMPT (What lis lthe ldollarl lamount lfofl lthe lfuel lprovided
  lby lthe lemployer l?))

(FMV-AUTOMOBILE
PROMPT (What is the fair market value of the automobile?)

(FUEL-PROVIDED-BY-EMPLOYER
UPDATED-BY (RULE034 RULE033))

(INCOME-FROM-FMV-AUTOBILE
UPDATED-BY (RULE032 RULE036 RULE037 RULE040 RULE041))

(METHOD-FUEL-PROVIDED-BY-EMPLOYER
EXPECT (FAIR-MARKET-VALUE 5.5-CENTS-PER-MILE FUEL-NOT-PROVIDED-BY-EMPLOYER)
PROMPT
(!The fuel I provided I by I the Employee I must I be I added I to I the
Annual I Lease I Value I in I determining I the FMV I of I the
!benefit I provided. I (newline w/3) I if I the fuel I is I provided I by I
!the employer I it I can I be I valued I last I either I)
ASKFIRST #!TRUE)

(METHOD-OF-VALUING-EMPLOYEE-USE
EXPECT (GENERAL-PRINCIPLES AUTOMOBILE-LEASE-VALUATION-RULE
CENTS-PER-MILE-VALUATION-RULE
COMMUTING-VALUATION-RULE)
PROMPT (I please I choose I the I method I to I determine I the
fair I market I value I of I the I vehicle I ?)
ASKFIRST #!TRUE)

(NUMBER-OF-ONE-WAY-COMMUTES
PROMPT
(I please I enter I the I number I of I one I way I
commutes I the I employee I traveled I using I the I
employee's I automobile I during I the I year I ?))

(PERIODS-OF-UNAVAILABILITY
PROMPT (I please I indicate I the I number I of I days I the I automobile
was I unavailable I for I lease I during I the I year I ?
I if I available I the I employee I answered I 365.)

(PERSONAL-USE-%
UPDATED-BY (RULE035))

(PERSONAL-USE-MILEAGE
PROMPT (I please I indicate I the I number I of I personal I miles I
driven I during I the I year I ?))

(TOTAL-MILEAGE
PROMPT (I please I enter I the I total I number I of I miles I the I
automobile I was I driven I during I the I year I ?))

(RULE031
ACTION (DO-ALL (CONCLUDE COMPANY-CAR-DUMMY-PARM YES TALLY 100))
PREMISE (SAND
(SAME AUTOMOBILE-ISSUES? PERSONAL-USE-OF-COMPANY-CAR))
SUBJECT VEHICLE-FRINGES-RULES)
(RULE032
SUBJECT VEHICLE-FRINGES-RULES
PREMISE ($AND (SAME METHOD-OF-VALUING-EMPLOYEE-USE AUTOMOBILE-LEASE-VALUATION-RULE)
(KNOWN FMV-AUTOMOBILE)
(GREATERP* (VALUE-OF PERIODS-OF-UNAVAILABILITY) 30)
(KNOWN METHOD-FUEL-PROVIDED-BY-EMPLOYER)
(KNOWN FUEL-PROVIDED-BY-EMPLOYER))
ACTION (DO-ALL (CONCLUDE INCOME-FROM-FMV-AUTOMOBILE
(TIMES
(TIMES
(PLUS
(VALUE-OF FUEL-PROVIDED-BY-EMPLOYER
()) (FIND-AUTOMOBILE-LEASE-VALUE
(VALUE-OF
FMV-AUTOMOBILE) ())
(FQUOTIENT
(VALUE-OF PERIODS-OF-UNAVAILABILITY
() 365))
(VALUE-OF PERSONAL-USE-% ())
(TALLY 100))

(RULE033
ACTION
(DO-ALL
(CONCLUDE FUEL-PROVIDED-BY-EMPLOYER
(VALUE-OF FMV-FUEL ()) TALLY 100))
PREMISE ($AND (SAME METHOD-FUEL-PROVIDED-BY-EMPLOYER FAIR-MARKET-VALUE)
(KNOWN FMV-FUEL))
SUBJECT VEHICLE-FRINGES-RULES ANTECEDENT ())

(RULE034
ACTION
(DO-ALL
(CONCLUDE FUEL-PROVIDED-BY-EMPLOYER
(TIMES 0.055 (VALUE-OF TOTAL-MILEAGE ()) TALLY 100))
PREMISE
($AND
(SAME METHOD-FUEL-PROVIDED-BY-EMPLOYER 5.5-CENTS-PER-MILE))
SUBJECT VEHICLE-FRINGES-RULES)

(RULE035
ACTION
(DO-ALL (CONCLUDE PERSONAL-USE-%
(FQUOTIENT (VALUE-OF PERSONAL-USE-MILEAGE)
(VALUE-OF TOTAL-MILEAGE)) TALLY 100))
PREMISE ($AND (KNOWN PERSONAL-USE-MILEAGE)
(KNOWN TOTAL-MILEAGE))
SUBJECT VEHICLE-FRINGES-RULES)

(RULE036
SUBJECT VEHICLE-FRINGES-RULES

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PREMISE ($AND (SAME METHOD-OF-VALUING-EMPLOYEE-USE AUTOMOBILE-LEASE-VALUATION-RULE)
(KNOWN FMV-AUTOMOBILE)
(LESSP* (VALUE-OF PERIODS-OF-UNAVAILABILITY () 30)
(KNOWN METHOD-FUEL-PROVIDED-BY-EMPLOYER)
(KNOWN FUEL-PROVIDED-BY-EMPLOYER))

ACTION
(DO-ALL
(CONCLUDE INCOME-FROM-FMV-AUTOMOBILE
(TIMES (TIMES
(P plus
(VALUE-OF FUEL-PROVIDED-BY-EMPLOYER ()
(FIND-AUTOMOBILE-LEASE-VALUE
(VALUE-OF FMV-AUTOMOBILE ())
(FQUOTIENT
(TIMES 4
(VALUE-OF PERIODS-OF-UNAVAILABILITY ())
365))
(VALUE-OF PERSONAL-USE-% ()
TALLY 100))))

RULE037
SUBJECT VEHICLE-FRINGES-RULES
PREMISE ($AND (SAME METHOD-OF-VALUING-EMPLOYEE-USE
CENTS-PER-MILE-VALUATION-RULE)
(GREATERP* (VALUE-OF PERSONAL-USE-MILEAGE () 15000)
(KNOWN CENTS-PER-MILE<15000))

ACTION
(DO-ALL
(CONCLUDE INCOME-FROM-FMV-AUTOMOBILE
(PLUS (TIMES (VALUE-OF CENTS-PER-MILE<15000 () 15000)
(TIMES (VALUE-OF CENTS-PER-MILE>15000 ()
(DIFFERENCE
(VALUE-OF PERSONAL-USE-MILEAGE ()
15000))
TALLY 100))))

RULE038
SUBJECT VEHICLE-FRINGES-RULES
PREMISE ($AND (SAME CENTS-PER-MILE<15000 0.21))
ACTION (DO-ALL (CONCLUDE CENTS-PER-MILE>15000 0.11 TALLY 100))

RULE039
SUBJECT VEHICLE-FRINGES-RULES
PREMISE ($AND (SAME CENTS-PER-MILE<15000 0.155))
ACTION (DO-ALL (CONCLUDE CENTS-PER-MILE>15000 0.055 TALLY 100))

RULE040
SUBJECT VEHICLE-FRINGES-RULES
PREMISE ($AND (SAME METHOD-OF-VALUING-EMPLOYEE-USE
CENTS-PER-MILE-VALUATION-RULE)
(LESEQ* (VALUE-OF PERSONAL-USE-MILEAGE () 15000)
(KNOWN CENTS-PER-MILE<15000))

ACTION
(DO-ALL
   (CONCLUDE INCOME-FROM-FMV-AUTOMOBILE
      (TALLY 100)))))

(RULE041
 SUBJECT VEHICLE-FRINGES-RULES
 PREMISE ($AND (SAME METHOD-OF-VALUING-EMPLOYEE-USE
 COMMUTING-VALUATION-RULE)
 (KNOWN NUMBER-OF-ONE-WAY-COMMUTES))
 ACTION (DO-ALL (CONCLUDE INCOME-FROM-FMV-AUTOMOBILE
 (TALLY 100)))))

B.3 Leasing Issues (KB)

Definition of context for leasing (KB)

(define elem-table '((YEAR-1)
   (YEAR-2)
   (YEAR-3)
   (YEAR-4)
   (YEAR-5)
   (YEAR-6)))

(DOMAIN VALUE "Leasing Calculations"
Definition of context for first year calculations

(YEAR-1
 GOALS (INCLUSION-AMOUNT-1ST-YEAR
 ADDITIONAL-INCLUSION-AMOUNT
 YEAR-2-FLAG)
 DISPLAYRESULTS #!TRUE
 INITIALDATA (AUTOMOBILE-DATE))

Definition of parameters for first year calculations

(INCLUSION-AMOUNT-1ST-YEAR
 PRINT? #!TRUE
 UPDATED-BY (INCLUSION-AMOUNT-RULE001
   INCLUSION-AMOUNT-RULE002
   INCLUSION-AMOUNT-RULE003
   INCLUSION-AMOUNT-RULE004))

(ADDITIONAL-INCLUSION-AMOUNT
 PRINT? #!TRUE
 UPDATED-BY ())

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(FMV-AUTOMOBILE-LEASED
PRINT? #!TRUE
PROMPT ((Please enter the lease price and value (newline w3) to determine the fair market value (newline w3) of the automobile?))

(LEASING-TEXTTAG
DEFAULT
("The Tax Reform Act of 1984 requires that the lessee include a percentage of the amount of the lease payments in income annually. The amount of this annual inclusion is determined by the Regs. Sections 1.280F-ST(d)(3)(iii) and 1.280-st(d)(3)(iv.).")

(NUMBER-OF-DAYS-LEASED
PRINT? #!TRUE
(UPDATED-BY RULE-REFORMAT-DATE))

(AUTOMOBILE-DATE-ACQUIRED
UPDATED-BY (RULE-REFORMAT-DATE))

(MONTH-ACQUIRED
UPDATED-BY (RULE-REFORMAT-DATE))

(AUTOMOBILE-DATE
PRINT? #!TRUE
PROMPT ((Enter the date the automobile was placed in service? (newline w3) For example: If the automobile was placed in service on April 3, 1985: (newline w3) Enter-> 4/3/85)))

(DATE-DISPOSED
PRINT? #!TRUE
PROMPT ((Enter the date the automobile was disposed or retired? (newline w3) For example: If the automobile was disposed April 3, 1985: (newline w3) Enter-> 04/03/85)))

(AUTOMOBILE-DATE-DISPOSED
UPDATED-BY (RULE-REFORMAT-DATE))

(TOTAL-MILEAGE
PRINT? #!TRUE
PROMPT ((Enter the total mileage:))
HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD
PRINT? #!TRUE
EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT ((What method was used? To calculate BUSINESS-USE?)))

(BUSINESS-USE-DAYS
PRINT? #!TRUE
PROMPT (Enter the number of days per week the car was used for business use: (newline w3))

(OTHER-%
 PRINT? #!TRUE
 PROMPT (Enter the business use %: (newline w3) |For example: If the % is 80% - Enter -> 80|)

(BUSINESS-MILEAGE
 PRINT? #!TRUE
 PROMPT (Enter |the| BUSINESS| MILEAGE:)
 HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use.")

(PRODUCTION-OF-INCOME-MILEAGE
 PRINT? #!TRUE
 PROMPT (Enter |the| PRODUCTION| OF| INCOME| MILEAGE:)
 HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test")

(BUSINESS-USE-1ST-YEAR
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE001 BUSINESS-USE-RULE002 BUSINESS-USE-RULE004 BUSINESS-USE-RULE005))

(B&P-USE-1ST-YEAR
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE001 BUSINESS-USE-RULE002 BUSINESS-USE-RULE004 BUSINESS-USE-RULE005))

(TOTAL-B&P-MILEAGE
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE003))

(YEAR-2-FLAG UPDATED-BY (COMPUTE-YR-2 INSTANTIATE-FRAME-RULE001))

(YEAR-2-DUMMY-PARM
 UPDATED-BY (INSTANTIATE-FRAME-RULE002))

(YEAR-2-
 EXPECT (YES NO)
 PROMPT (Would you like to examine
 the tax consequences? |For the business use
 of the automobile? |For the SECOND TAX year?))

Definition of parameters for first year calculations

INCLUSION AMOUNT RULES
(INCLUSION-AMOUNT-RULE001
 PREMISE
 ($AND
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 11250)
ACTION
(DO-ALL (CONCLUDE INCLUSION-AMOUNT-1ST-YEAR 0 TALLY 100)
 (CONCLUDE YEAR-2-FLAG NO TALLY 100)
 (MPRINTT "THERE IS NO REGULAR ADDITION TO INCOME FOR THE FIRST YEAR." (newline w3) "THE FMV OF THE AUTOMOBILE IS LESS THAN THE THRESHOLD AMOUNT TO REQUIRE AN ADJUSTMENT."
 (newline w3) "TEMP. REGS. SECTION 1.280F-5.")
TRANSLATION "There is no inclusion amount if the fair market value of the automobile is less than $11,250."
SUBJECT YEAR-1-RULES)

(INCLUSION-AMOUNT-RULE002
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
 (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 12800))
ACTION
(DO-ALL (CONCLUDE INCLUSION-AMOUNT-1ST-YEAR 0 TALLY 100)
 (CONCLUDE YEAR-2-FLAG NO TALLY 100)
 (MPRINTT "THERE IS NO REGULAR ADDITION TO INCOME FOR THE FIRST YEAR." (newline w3) "THE FMV OF THE AUTOMOBILE IS LESS THAN THE THRESHOLD AMOUNT TO REQUIRE AN ADJUSTMENT."
 (newline w3) "TEMP. REGS. SECTION 1.280F-5.")
TRANSLATION "There is no inclusion amount if the fair market value of the automobile is less than $12,800."
SUBJECT YEAR-1-RULES)

(INCLUSION-AMOUNT-RULE003
PREMISE
($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
 (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
 (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
 (KNOWN B&P-USE-1ST-YEAR)
 (KNOWN DAYS-LEASED-1ST-YEAR))
ACTION
(.DO-ALL
 (CONCLUDE INCLUSION-AMOUNT-1ST-YEAR
 (TIMES
 (TIMES
 (FQUOTIENT (VALUE-OF DAYS-LEASED-1ST-YEAR ()) 365)
 (DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
 (VALUE-OF FMV-AUTOMOBILE-LEASED ())
 (VALUE-OF MONTH-ACQUIRED ()))
 (VALUE-OF B&P-USE-1ST-YEAR ()))
 TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5t(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

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SUBJECT YEAR-1-RULES)

(INCLUSION-AMOUNT-RULE004
PREMISE
($AND
  (GREATERP (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
  (GREATERP (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
  (LESSEQ (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
  (KNOWN B&P-USE-1ST-YEAR)
  (KNOWN DAYS-LEASED-1ST-YEAR))
ACTION
(DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-1ST-YEAR
    (TIMES
      (TIMES
        (FQUOTIENT (VALUE-OF DAYS-LEASED-1ST-YEAR ()) 365)
        (DOLLAR-AMOUNT-AFTER-1986
          (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 1))
        (VALUE-OF B&P-USE-1ST-YEAR ()))
      TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."
SUBJECT YEAR-1-RULES)

BUSINESS VS. PERSONAL USE
(BUSINESS-USE-RULE001
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD MILEAGE)
  (KNOWN TOTAL-MILEAGE)
  (KNOWN TOTAL-B&P-MILEAGE)
  (KNOWN BUSINESS-MILEAGE))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR
    (FQUOTIENT (VALUE-OF BUSINESS-MILEAGE ())
      (VALUE-OF TOTAL-MILEAGE ()))
    TALLY 100)
  (CONCLUDE B&P-USE-1ST-YEAR
    (FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE ())
      (VALUE-OF TOTAL-MILEAGE ()))
    TALLY 100))
SUBJECT YEAR-1-RULES)

(BUSINESS-USE-RULE002
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD BUSINESS-USE-100%))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR 1 TALLY 100)
  (CONCLUDE B&P-USE-1ST-YEAR 1 TALLY 100))
SUBJECT YEAR-1-RULES)
(BUSINESS-USE-RULE004
PREMISE ($AND
   (SAME BUSINESS-USE-METHOD OTHER)
   (KNOWN OTHER-%))
ACTION
   (DO-ALL
      (CONCLUDE BUSINESS-USE-1ST-YEAR
         (QUOTIENT (VALUE-OF OTHER-% () 100) TALLY 100)
      (CONCLUDE B&P-USE-1ST-YEAR
         (QUOTIENT (VALUE-OF OTHER-% () 100) TALLY 100))
SUBJECT YEAR-1-RULES)

(BUSINESS-USE-RULE003
PREMISE ($AND
   (KNOWN PRODUCTION-OF-INCOME-MILEAGE)
   (KNOWN BUSINESS-MILEAGE))
ACTION
   (DO-ALL
      (CONCLUDE TOTAL-B&P-MILEAGE
         (PLUS (VALUE-OF BUSINESS-MILEAGE ())
            (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE))
         TALLY 100))
SUBJECT YEAR-1-RULES)

(BUSINESS-USE-RULE005
PREMISE ($AND
   (SAME BUSINESS-USE-METHOD DAYS-OF-THE-WEEK)
   (KNOWN BUSINESS-USE-DAYS))
ACTION
   (DO-ALL
      (CONCLUDE BUSINESS-USE-1ST-YEAR
         (QUOTIENT (VALUE-OF BUSINESS-USE-DAYS ()) 7)
         TALLY 100)
      (CONCLUDE B&P-USE-1ST-YEAR
         (QUOTIENT (VALUE-OF BUSINESS-USE-DAYS ()) 7)
         TALLY 100))
SUBJECT YEAR-1-RULES)

(COMPUTE-YR-2
PREMISE ($AND
   (SAME YEAR-2-? YES))
ACTION
   (DO-ALL
      (CONCLUDE YEAR-OF-COMPUTATION
         (PLUS
            (VALUE-OF YEAR-OF-COMPUTATION ()
            1))
         TALLY 100))
SUBJECT YEAR-1-RULES)

Definition of context for second year calculations
(YEAR-2
GOALS (INCLUSION-AMOUNT-2ND-YEAR YEAR-3-FLAG)
Definition of parameters for second year calculations

(INCLUSION-AMOUNT-2ND-YEAR
PRINT? #!TRUE
UPDATED-BY (INCLUSION-AMOUNT-RULE001-YR-2
           INCLUSION-AMOUNT-RULE002-YR-2
           INCLUSION-AMOUNT-RULE003-YR-2
           INCLUSION-AMOUNT-RULE004-YR-2))

(TOTAL-MILEAGE-YR-2
PRINT? #!TRUE
PROMPT (Enter TOTAL MILEAGE)
HELP "When using the standard mileage rate, the total business mileage for all cars must be
combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the
car is fully depreciated (driven more than 60,000 business miles in the life of the car at the
maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is
fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in
the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD-YR-2
PRINT? #!TRUE
EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT (What method was used? (calculate BUSINESS-USE?))

(BUSINESS-USE-DAYS-YR-2
PRINT? #!TRUE
PROMPT (Enter the number of days per week the car was used for business use: (newline w3)))

(OTHER-%-YR-2
PRINT? #!TRUE
PROMPT (Enter the business use %: (newline w3) For example: If the % is 80% - Enter ->
80%))

(BUSINESS-MILEAGE-YR-2
PRINT? #!TRUE
PROMPT (Enter BUSINESS MILEAGE)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate
entry in a log, diary, or similar record to support the business use.")

(PRODUCTION-OF-INCOME-MILEAGE-YR-2
PRINT? #!TRUE
PROMPT (Enter PRODUCTION OF INCOME MILEAGE)
HELP "The mileage driven in an activity for the production of income is
used to calculate the business deduction, but is not used in the
determination of the 50% business use test")

(BUSINESS-USE-2ND-YEAR
PRINT? #!TRUE
UPDATED-BY (BUSINESS-USE-RULE001-YR-2 BUSINESS-USE-RULE002-YR-2
           BUSINESS-USE-RULE004-YR-2

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Definition of parameters for second year calculations

INCLUSION AMOUNT RULES
(INCLUSION-AMOUNT-RULE001-YR-2
 PREMISE
 ($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
 (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
 (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
 (KNOWN B&P-USE-2ND-YEAR)
 (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ()
 (VALUE-OF YEAR-DISPOSED ())))
 ACTION
 (DO-ALL
 (CONCLUDE INCLUSION-AMOUNT-2ND-YEAR
 (TIMES
 (TIMES
 (FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
 (DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
 (VALUE-OF FMV-AUTOMOBILE-LEASED ()
 (VALUE-OF MONTH-ACQUIRED ())
 (VALUE-OF B&P-USE-1ST-YEAR ())
 TALLY 100))
 TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5t(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."
 SUBJECT YEAR-2-RULES)
(INCLUSION-AMOUNT-RULE002-YR-2)
PREMISE
($\&$
  (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
  (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
  (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
  (KNOWN B&P-USE-2ND-YEAR))
ACTION
(DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-2ND-YEAR
    (TIMES
      (TIMES
        1
        (DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
          (VALUE-OF FMV-AUTOMOBILE-LEASED ())
          (VALUE-OF MONTH-ACQUIRED ())))
        (VALUE-OF B&P-USE-2ND-YEAR ())))
    TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or lessis
determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-
5t(e)(1)) by the number of days in the lease for the year and adjusting that amount by the
business/investment use percentage."
SUBJECT YEAR-2-RULES)

(INCLUSION-AMOUNT-RULE003-YR-2)
PREMISE
($\&$
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
  (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
  (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
  (KNOWN B&P-USE-2ND-YEAR)
  (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
    (VALUE-OF YEAR-DISPOSED ())))
ACTION
(DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-2ND-YEAR
    (TIMES
      (TIMES
        (FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
        (DOLLAR-AMOUNT-AFTER-1986
          (VALUE-OF FMV-AUTOMOBILE-LEASED ())
          (VALUE-OF B&P-USE-2ND-YEAR ())
        )
        TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or lessis
determined by prorating the dollar amount (from the Table III in Publication 917) by the
number of days in the lease for the year and adjusting that amount by the business/investment
use percentage."
SUBJECT YEAR-2-RULES)

(INCLUSION-AMOUNT-RULE004-YR-2)
PREMISE
($\&$
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
(KNOWN B&P-USE-2ND-YEAR))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-2ND-YEAR
  (TIMES
    (DOLLAR-AMOUNT-AFTER-1986
     (VALUE-OF FMV-AUTOMOBILE-LEASED () 2))
    (VALUE-OF B&P-USE-2ND-YEAR()))
  TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is
determined by prorating the dollar amount (from the Table III in Publication 917) by the
number of days in the lease for the year and adjusting that amount by the business/investment
use percentage."
SUBJECT YEAR-2-RULES)

BUSINESS VS. PERSONAL USE
(BUSINESS-USE-RULE001-YR-2
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-2 MILEAGE)
  (KNOWN TOTAL-MILEAGE-YR-2)
  (KNOWN TOTAL-B&P-MILEAGE-YR-2)
  (KNOWN BUSINESS-MILEAGE-YR-2))
ACTION
(DO-ALL
(CONCLUDE BUSINESS-USE-2ND-YEAR
  (FQUOTIENT (VALUE-OF BUSINESS-MILEAGE-YR-2 ()
    (VALUE-OF TOTAL-MILEAGE-YR-2 ()
    TALLY 100))
(CONCLUDE B&P-USE-2ND-YEAR
  (FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE-YR-2 ()
    (VALUE-OF TOTAL-MILEAGE-YR-2 ()
    TALLY 100))
SUBJECT YEAR-2-RULES)

(BUSINESS-USE-RULE002-YR-2
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-2 BUSINESS-USE-100%) )
ACTION
(DO-ALL
(CONCLUDE BUSINESS-USE-2ND-YEAR 1 TALLY 100)
(CONCLUDE B&P-USE-2ND-YEAR 1 TALLY 100)
SUBJECT YEAR-2-RULES)

(BUSINESS-USE-RULE004-YR-2
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-2 OTHER)
  (KNOWN OTHER-%-YR-2))
ACTION
(DO-ALL
(CONCLUDE BUSINESS-USE-2ND-YEAR
(FQUOTIENT (VALUE-OF OTHER-%-YR-2 ()) 100) TALLY 100)
(CONCLUDE B&P-USE-2ND-YEAR
 (FQUOTIENT (VALUE-OF OTHER-%-YR-2 ()) 100) TALLY 100))
SUBJECT YEAR-2-RULES)

(BUSINESS-USE-RULE003-YR-2
PREMISE ($AND
 (KNOWN PRODUCTION-OF-INCOME-MILEAGE-YR-2)
 (KNOWN BUSINESS-MILEAGE-YR-2))
ACTION
(Do-ALL
 (CONCLUDE TOTAL-B&P-MILEAGE-YR-2
 (PLUS (VALUE-OF BUSINESS-MILEAGE-YR-2 ()
 (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE-YR-2)
 TALLY 100))
SUBJECT YEAR-2-RULES)

(BUSINESS-USE-RULE005-YR-2
PREMISE ($AND
 (SAME BUSINESS-USE-METHOD-YR-2 DAYS-OF-THE-WEEK)
 (KNOWN BUSINESS-USE-DAYS-YR-2))
ACTION
(Do-ALL
 (CONCLUDE BUSINESS-USE-2ND-YEAR
 (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-2 ()) 7)
 TALLY 100)
 (CONCLUDE B&P-USE-2ND-YEAR
 (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-2 ()) 7)
 TALLY 100))
SUBJECT YEAR-2-RULES)

(COMPUTE-YR-3
PREMISE ($AND
 (SAME YEAR-3-? YES))
ACTION
(Do-ALL
 (CONCLUDE YEAR-OF-COMPUTATION
 (PLUS
 (VALUE-OF YEAR-OF-COMPUTATION ()
 1))
 TALLY 100))
SUBJECT YEAR-2-RULES)

Definition of context for third year calculations
(YEAR-3
 GOALS (INCLUSION-AMOUNT-3RD-YEAR
 ADDITIONAL-INCLUSION-AMOUNT-3RD-YEAR
 YEAR-4-FLAG)
 DISPLAYRESULTS #!TRUE)

Definition of parameters for third year calculations
(INCLUSION-AMOUNT-3RD-YEAR
PRINT? #!TRUE
UPDATED-BY (INCLUSION-AMOUNT-RULE001-YR-3
INCLUSION-AMOUNT-RULE002-YR-3
INCLUSION-AMOUNT-RULE003-YR-3
INCLUSION-AMOUNT-RULE004-YR-3))

(ADDITIONAL-INCLUSION-AMOUNT-3RD-YEAR
PRINT? #!TRUE
UPDATED-BY (ADDITIONAL-INCLUSION-AMOUNT-RULE001-YR-3))

(TOTAL-MILEAGE-YR-3
PRINT? #!TRUE
PROMPT (l[Enter] [the] [TOTAL] [MILEAGE:]l)
HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD-YR-3
PRINT? #!TRUE
EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT (l[What] [method] [was] [used] [calculate] [BUSINESS-USE?]l))

(BUSINESS-USE-DAYS-YR-3
PRINT? #!TRUE
PROMPT (l[Enter the number of days per week the car was used for business use:]l (new[line w3]))

(OTHER-%-YR-3
PRINT? #!TRUE
PROMPT (l[Enter the business use %:]l (newline w3) l[For example: If the % is 80% - Enter -> 80])

(BUSINESS-MILEAGE-YR-3
PRINT? #!TRUE
PROMPT (l[Enter] [the] [BUSINESS] [MILEAGE:]l)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use. ")

(PRODUCTION-OF-INCOME-MILEAGE-YR-3
PRINT? #!TRUE
PROMPT (l[Enter] [the] [PRODUCTION] [OF] [INCOME] [MILEAGE:]l)
HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test")

(BUSINESS-USE-3RD-YEAR
PRINT? #!TRUE
UPDATED-BY (BUSINESS-USE-RULE001-YR-3 BUSINESS-USE-RULE002-YR-3
BUSINESS-USE-RULE004-YR-3
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DEFINITION OF RULES FOR THIRD YEAR CALCULATIONS

INCLUSION AMOUNT RULES
(INCLUSION-AMOUNT-RULE001-YR-3
  PREMISE
  ($AND
   (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 870101)
   (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 850402)
   (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
   (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
   (KNOWN B&P-USE-3RD-YEAR)
   (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
     (VALUE-OF YEAR-DISPOSED ()))))
  ACTION
  (DO-ALL
   (CONCLUDE INCLUSION-AMOUNT-3RD-YEAR
     (TIMES
      (TIMES
       (QUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR () 365)
       (DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
        (VALUE-OF FMV-AUTOMOBILE-LEASED ())
        (VALUE-OF MONTH-ACQUIRED ())
        (VALUE-OF B&P-USE-1ST-YEAR ())
        TALLY 100)))))
  TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."
  SUBJECT YEAR-3-RULES)
(INCLUSION-AMOUNT-RULE002-YR-3
PREMISE
($AND
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
(KNOWN B&P-USE-3RD-YEAR))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-3RD-YEAR
(TIMES
(TIMES
1
(DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
(VALUE-OF FMV-AUTOMOBILE-LEASED ())
(VALUE-OF MONTH-ACQUIRED ()))
(VALUE-OF B&P-USE-3RD-YEAR ()))
TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is
determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-
5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the
business/investment use percentage."
SUBJECT YEAR-3-RULES)

(INCLUSION-AMOUNT-RULE003-YR-3
PREMISE
($AND
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
(KNOWN B&P-USE-3RD-YEAR)
(EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
(VALUE-OF YEAR-DISPOSED ()))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-3RD-YEAR
(TIMES
(TIMES
(FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
(DOLLAR-AMOUNT-AFTER-1986
(VALUE-OF FMV-AUTOMOBILE-LEASED ()) 2)
(VALUE-OF B&P-USE-3RD-YEAR ()))
TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is
determined by prorating the dollar amount (from the Table III in Publication 917) by the
number of days in the lease for the year and adjusting that amount by the business/investment
use percentage."
SUBJECT YEAR-3-RULES)

(INCLUSION-AMOUNT-RULE004-YR-3
PREMISE
($AND
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
(KNOWN B&P-USE-3RD-YEAR))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-3RD-YEAR
  (TIMES
   (TIMES
    1
    (DOLLAR-AMOUNT-AFTER-1986
     (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 3))
    (VALUE-OF B&P-USE-3RD-YEAR ())-TALLY 100)
  ))

TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-3-RULES)

(ADDITIONAL-INCLUSION-AMOUNT-RULE001-YR-3
PREMISE ($AND
  (LESSEQ* (VALUE-OF B&P-USE-3RD-YEAR ()) .5))
ACTION
(DO-ALL
(CONCLUDE ADDITIONAL-INCLUSION-AMOUNT-3RD-YEAR
  (TIMES
   (DOLLAR-AMOUNT-ADDITIONAL-INCLUSION-AMOUNT 3)
   (FQUOTIENT (PLUS
     (PLUS
      (VALUE-OF B&P-USE-1ST-YEAR ()
      (VALUE-OF B&P-USE-2ND-YEAR ()))
      (VALUE-OF B&P-USE-3RD-YEAR ())
    ) 3))
    -TALLY 100))
  ))

TRANSLATION "If a car is not used more than 50% for business during a tax year, you must include an additional income inclusion amount in gross income for the first year the car is not used more than 50% for business work."

SUBJECT YEAR-3-RULES)

(BUSINESS-USE-RULE001-YR-3
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-3 MILEAGE)
  (KNOWN TOTAL-MILEAGE-YR-3)
  (KNOWN TOTAL-B&P-MILEAGE-YR-3)
  (KNOWN BUSINESS-MILEAGE-YR-3))
ACTION
(DO-ALL
(CONCLUDE BUSINESS-USE-3RD-YEAR
  (FQUOTIENT (VALUE-OF BUSINESS-MILEAGE-YR-3 ())
    (VALUE-OF TOTAL-MILEAGE-YR-3 ())
    -TALLY 100)
  ))
(CONCLUDE B&P-USE-3RD-YEAR
    (FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE-YR-3 ()
        (VALUE-OF TOTAL-MILEAGE-YR-3 ()))
    TALLY 100))
SUBJECT YEAR-3-RULES)

(BUSINESS-USE-RULE002-YR-3
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-3 BUSINESS-USE-100%))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-3RD-YEAR 1 TALLY 100)
    (CONCLUDE B&P-USE-3RD-YEAR 1 TALLY 100))
SUBJECT YEAR-3-RULES)

(BUSINESS-USE-RULE004-YR-3
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-3 OTHER)
    (KNOWN OTHER-%-YR-3))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-3RD-YEAR
        (FQUOTIENT (VALUE-OF OTHER-%-YR-3 () 100) TALLY 100)
    (CONCLUDE B&P-USE-3RD-YEAR
        (FQUOTIENT (VALUE-OF OTHER-%-YR-3 () 100) TALLY 100))
SUBJECT YEAR-3-RULES)

(BUSINESS-USE-RULE003-YR-3
PREMISE ($AND
    (KNOWN PRODUCTION-OF-INCOME-MILEAGE-YR-3)
    (KNOWN BUSINESS-MILEAGE-YR-3))
ACTION
(DO-ALL
    (CONCLUDE TOTAL-B&P-MILEAGE-YR-3
        (PLUS (VALUE-OF BUSINESS-MILEAGE-YR-3 ())
            (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE-YR-3))
        TALLY 100))
SUBJECT YEAR-3-RULES)

(BUSINESS-USE-RULE005-YR-3
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-3 DAYS-OF-THE-WEEK)
    (KNOWN BUSINESS-USE-DAYS-YR-3))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-3RD-YEAR
        (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-3 ()) 7)
        TALLY 100)
    (CONCLUDE B&P-USE-3RD-YEAR
        (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-3 ()) 7)
        TALLY 100))
SUBJECT YEAR-3-RULES)

(COMPUTE-YR-4
PREMISE ($AND
(SAME YEAR-4-? YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-OF-COMPUTATION
(PLUS
(VALUE-OF YEAR-OF-COMPUTATION ()
1)
TALLY 100))
SUBJECT YEAR-3-RULES)

INSTANTIATION & LOAD RULES

(LOAD-FRAMES-4-5-6
PREMISE ($AND (SAME YEAR-4-? YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-4-?
(LOAD-FRAMES-4-5-6 () TALLY 100)
(CONCLUDE YEAR-4-? YES TALLY 100))
SUBJECT YEAR-3-RULES)

(INSTANTIATE-FRAME-RULE001
PREMISE ($AND (SAME YEAR-2-? YES)
(SAME YEAR-2-DUMMY-PARM YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-2-FLAG YES TALLY 100))
SUBJECT YEAR-1-RULES)

(INSTANTIATE-FRAME-RULE002
PREMISE ($AND (SAME YEAR-2-? YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-2-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-2-RULES)

(INSTANTIATE-FRAME-RULE003
PREMISE ($AND (SAME YEAR-3-? YES)
(SAME YEAR-3-DUMMY-PARM))
ACTION
(DO-ALL
(CONCLUDE YEAR-3-FLAG YES TALLY 100))
SUBJECT YEAR-2-RULES)

(INSTANTIATE-FRAME-RULE004
PREMISE ($AND (SAME YEAR-3-? YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-3-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-3-RULES)

(INSTANTIATE-FRAME-4-RULE001
PREMISE ($AND (SAME YEAR-4=? YES) (SAME YEAR-4-DUMMY-PARM))
ACTION
(DO-ALL (CONCLUDE YEAR-4-FLAG YES TALLY 100))
SUBJECT YEAR-3-RULES)

(INSTANTIATE-FRAME-4-RULE002
PREMISE ($AND (SAME YEAR-4=? YES))
ACTION
(DO-ALL (CONCLUDE YEAR-4-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-4-RULES)

(INSTANTIATE-FRAME-5-RULE001
PREMISE ($AND (SAME YEAR-5=? YES) (SAME YEAR-5-DUMMY-PARM))
ACTION
(DO-ALL (CONCLUDE YEAR-5-FLAG YES TALLY 100))
SUBJECT YEAR-4-RULES)

(INSTANTIATE-FRAME-5-RULE002
PREMISE ($AND (SAME YEAR-5=? YES))
ACTION
(DO-ALL (CONCLUDE YEAR-5-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-5-RULES)

(INSTANTIATE-FRAME-6-RULE001
PREMISE ($AND (SAME YEAR-6=? YES) (SAME YEAR-6-DUMMY-PARM))
ACTION
(DO-ALL (CONCLUDE YEAR-6-FLAG YES TALLY 100))
SUBJECT YEAR-5-RULES)

(INSTANTIATE-FRAME-6-RULE002
PREMISE ($AND (SAME YEAR-6=? YES))
ACTION
(DO-ALL (CONCLUDE YEAR-6-DUMMY-PARM YES TALLY 100))
SUBJECT YEAR-6-RULES)

Definition of context for fourth year calculations

(YEAR-4
GOALS (INCLUSION-AMOUNT-4TH-YEAR
YEAR-5-FLAG)
DISPLAYRESULTS #!TRUE)

Definition of parameters for fourth year calculations
(INCLUSION-AMOUNT-4TH-YEAR
PRINT? #!TRUE
UPDATED-BY (INCLUSION-AMOUNT-RULE001-YR-4
INCLUSION-AMOUNT-RULE002-YR-4
INCLUSION-AMOUNT-RULE003-YR-4
INCLUSION-AMOUNT-RULE004-YR-4))

(TOTAL-MILEAGE-YR-4
PRINT? #!TRUE
PROMPT ({Enter |hel |TOTAL| |MILEAGE:1)
HELP "When using the standard mileage rate, the total business mileage for all cars must be
combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the
car is fully depreciated (driven more than 60,000 business miles in the life of the car at the
maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is
fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in
the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD-YR-4
PRINT? #!TRUE
EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT ({What |method| |was| lused| |to| calculate |BUSINESS-USE?!))

(BUSINESS-USE-DAYS-YR-4
PRINT? #!TRUE
PROMPT ({Enter the number of days per week the car was used for business use:1 (newline
w3))

(OTHER-%-YR-4
PRINT? #!TRUE
PROMPT ({Enter the business use %:1 (newline w3) |For example: If the % is 80% - Enter ->
80|)

(BUSINESS-MILEAGE-YR-4
PRINT? #!TRUE
PROMPT ({Enter |the |BUSINESS| |MILEAGE:1)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate
entry in a log, diary, or similar record to support the business use. ")

(PRODUCTION-OF-INCOME-MILEAGE-YR-4
PRINT? #!TRUE
PROMPT ({Enter |the |PRODUCTION| |OF| |INCOME| |MILEAGE:1)
HELP "The mileage driven in an activity for the production of income is
used to calculate the business deduction, but is not used in the
determination of the 50% business use test")

(BUSINESS-USE-4TH-YEAR
PRINT? #!TRUE
UPDATED-BY (BUSINESS-USE-RULE001-YR-4 BUSINESS-USE-RULE002-YR-4
BUSINESS-USE-RULE004-YR-4
BUSINESS-USE-RULE005-YR-4))
INCLUSION AMOUNT RULES
(INCLUSION-AMOUNT-RULE001-YR-4
PREMISE
($AND
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
(KNOWN B&P-USE-4TH-YEAR)
(EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
  (VALUE-OF YEAR-DISPOSED ())))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-4TH-YEAR
  (TIMES
   (TIMES
    (QUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
    (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
     (VALUE-OF FMV-AUTOMOBILE-LEASED ())
     4))
    (VALUE-OF B&P-USE-4TH-YEAR ())
    TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is
determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-
5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the
business/investment use percentage."
SUBJECT YEAR-4-RULES)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
(KNOWN B&P-USE-4TH-YEAR))
ACTION
(DO-ALL
(CONCLUDE INCLUSION-AMOUNT-4TH-YEAR
  (TIMES
   (TIMES
    1
    (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
     (VALUE-OF FMV-AUTOMOBILE-LEASED ())
    4))
   (VALUE-OF B&P-USE-4TH-YEAR ())
  TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is
determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-
5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the
business/investment use percentage."
SUBJECT YEAR-4-RULES)

(INCLUSION-AMOUNT-RULE003-YR-4
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
(KNOWN B&P-USE-4TH-YEAR)
(EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
  (VALUE-OF YEAR-DISPOSED ())))
ACTION
(DO-ALL
(CONCLUDE YEAR-5-FLAG YES TALLY 100)
(CONCLUDE INCLUSION-AMOUNT-4TH-YEAR
  (TIMES
   (TIMES
    (FQOUTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
    (DOLLAR-AMOUNT-AFTER-1986
     (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 3))
   (VALUE-OF B&P-USE-4TH-YEAR ())
  TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is
determined by prorating the dollar amount (from the Table III in Publication 917) by the
number of days in the lease for the year and adjusting that amount by the business/investment
use percentage.
SUBJECT YEAR-4-RULES)

(INCLUSION-AMOUNT-RULE004-YR-4
PREMISE
($AND
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
(GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
(LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
(KNOWN B&P-USE-4TH-YEAR))
ACTION
( DO-ALL
( CONCLUDE INCLUSION-AMOUNT-4TH-YEAR
  (TIMES
    (TIMES
      1
      (DOLLAR-AMOUNT-AFTER-1986
        (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 4))
      (VALUE-OF B&P-USE-4TH-YEAR ())
  )
  TALLY 100))

TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-4-RULES)

(BUSINESS-USE-RULE001-YR-4
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-4 MILEAGE)
  (KNOWN TOTAL-MILEAGE-YR-4)
  (KNOWN TOTAL-B&P-MILEAGE-YR-4)
  (KNOWN BUSINESS-MILEAGE-YR-4))

ACTION
( DO-ALL
( CONCLUDE BUSINESS-USE-4TH-YEAR
  (FQUOTIENT (VALUE-OF BUSINESS-MILEAGE-YR-4 ())
    (VALUE-OF TOTAL-MILEAGE-YR-4 ()))
  TALLY 100)
( CONCLUDE B&P-USE-4TH-YEAR
  (FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE-YR-4 ())
    (VALUE-OF TOTAL-MILEAGE-YR-4 ()))
  TALLY 100))

SUBJECT YEAR-4-RULES)

(BUSINESS-USE-RULE002-YR-4
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-4 BUSINESS-USE-100%))

ACTION
( DO-ALL
( CONCLUDE BUSINESS-USE-4TH-YEAR 1 TALLY 100)
( CONCLUDE B&P-USE-4TH-YEAR 1 TALLY 100))

SUBJECT YEAR-4-RULES)

(BUSINESS-USE-RULE004-YR-4
PREMISE ($AND
  (SAME BUSINESS-USE-METHOD-YR-4 OTHER)
  (KNOWN OTHER-%-YR-4))

ACTION
( DO-ALL
( CONCLUDE BUSINESS-USE-4TH-YEAR
  (FQUOTIENT (VALUE-OF OTHER-%-YR-4 ()) 100) TALLY 100)
( CONCLUDE B&P-USE-4TH-YEAR
  (FQUOTIENT (VALUE-OF OTHER-%-YR-4 ()) 100) TALLY 100))

SUBJECT YEAR-4-RULES)
(BUSINESS-USE-RULE003-YR-4
PREMISE ($AND
    (KNOWN PRODUCTION-OF-INCOME-MILEAGE-YR-4)
    (KNOWN BUSINESS-MILEAGE-YR-4))
ACTION
(DO-ALL
  (CONCLUDE TOTAL-B&P-MILEAGE-YR-4
    (PLUS (VALUE-OF BUSINESS-MILEAGE-YR-4 ()
        (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE-YR-4))
     TALLY 100))
SUBJECT YEAR-4-RULES)

(BUSINESS-USE-RULE005-YR-4
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-4 DAYS-OF-THE-WEEK)
    (KNOWN BUSINESS-USE-DAYS-YR-4))
ACTION
(DO-ALL
  (CONCLUDE BUSINESS-USE-4TH-YEAR
    (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-4 () 7)
     TALLY 100)
  (CONCLUDE B&P-USE-4TH-YEAR
    (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-4 () 7)
     TALLY 100))
SUBJECT YEAR-4-RULES)

(COMPUTE-YR-5
PREMISE ($AND
    (SAME YEAR-5-? YES))
ACTION
(DO-ALL
  (CONCLUDE YEAR-OF-COMPUTATION
     (PLUS
        (VALUE-OF YEAR-OF-COMPUTATION ())
     1)
     TALLY 100))
SUBJECT YEAR-4-RULES)

Definition of context for fifth year calculations
(YEAR-5
GOALS (INCLUSION-AMOUNT-5TH-YEAR YEAR-6-FLAG)
DISPLAYRESULTS #!TRUE)

Definition of parameters for fifth year calculations
(INCLUSION-AMOUNT-5TH-YEAR
PRINT? #!TRUE
UPDATED-BY (INCLUSION-AMOUNT-RULE001-YR-5
    INCLUSION-AMOUNT-RULE002-YR-5
    INCLUSION-AMOUNT-RULE003-YR-5
    INCLUSION-AMOUNT-RULE004-YR-5))
(TOTAL-MILEAGE-YR-5
PRINT? #!TRUE
PROMPT (Enter \t the \t TOTAL \t MILEAGE:)
HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated.")

(BUSINESS-USE-METHOD-YR-5
PRINT? #!TRUE
EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
PROMPT (Enter the method\twas\tlused\tto\tcalculate\tBUSINESS-USE?))

(BUSINESS-USE-DAYS-YR-5
PRINT? #!TRUE
PROMPT (Enter the number of days per week the car was used for business use: (newline w3)))

(OTHER-%-YR-5
PRINT? #!TRUE
PROMPT (Enter the business use %: (newline w3) For example: If the % is 80% - Enter -> 80))

(BUSINESS-MILEAGE-YR-5
PRINT? #!TRUE
PROMPT (Enter \t BUSINESS \t MILEAGE:)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use. ")

(PRODUCTION-OF-INCOME-MILEAGE-YR-5
PRINT? #!TRUE
PROMPT (Enter \t PRODUCTION \t INCOME \t MILEAGE:)
HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test")

(BUSINESS-USE-5TH-YEAR
PRINT? #!TRUE

(B&P-USE-5TH-YEAR
PRINT? #!TRUE

(TOTAL-B&P-MILEAGE-YR-5
PRINT? #!TRUE

159
INCLUSION AMOUNT RULES
(INCLUSION-AMOUNT-RULE001-YR-5
    PREMISE
    ($AND
        (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
        (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
        (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
        (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
        (KNOWN B&P-USE-5TH-YEAR)
        (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
            (VALUE-OF YEAR-DISPOSED ()))))
    ACTION
    (DO-ALL
        (CONCLUDE INCLUSION-AMOUNT-5TH-YEAR
            (TIMES
                (TIMES
                    (QUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
                    (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
                        (VALUE-OF FMV-AUTOMOBILE-LEASED ()
                            5))
                    (VALUE-OF B&P-USE-5TH-YEAR ()))
                TALLY 100))
    )
TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less
determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-
5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the
business/investment use percentage."
SUBJECT YEAR-5-RULES)

(INCLUSION-AMOUNT-RULE002-YR-5
    PREMISE
    ($AND
        (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
        (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
        (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
        (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
        (KNOWN B&P-USE-5TH-YEAR))
    ACTION
    (DO-ALL
        (CONCLUDE INCLUSION-AMOUNT-5TH-YEAR
            (TIMES
            )
    )
(TIMES
   1
   (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
      (VALUE-OF FMV-AUTOMOBILE-LEASED ()
      5))
   (VALUE-OF B&P-USE-5TH-YEAR ())
   TALLY 100))

TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5t(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-5-RULES)

(INCLUSION-AMOUNT-RULE003-YR-5
 PREMISE
 ($AND
   (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
   (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
   (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
   (KNOWN B&P-USE-5TH-YEAR)
   (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
      (VALUE-OF YEAR-DISPOSED ())))
 ACTION
 (DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-5TH-YEAR
   (TIMES
    (TIMES
     (FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
     (DOLLAR-AMOUNT-AFTER-1986
      (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 4))
     (VALUE-OF B&P-USE-5TH-YEAR ())
     TALLY 100))

TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-5-RULES)

(INCLUSION-AMOUNT-RULE004-YR-5
 PREMISE
 ($AND
   (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
   (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
   (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
   (KNOWN B&P-USE-5TH-YEAR))
 ACTION
 (DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-5TH-YEAR
   (TIMES
    (TIMES
     1
     (DOLLAR-AMOUNT-AFTER-1986
      (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 5))
     (VALUE-OF B&P-USE-5TH-YEAR ())

161
TALLY 100)
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is
determined by prorating the dollar amount (from the Table III in Publication 917) by the
number of days in the lease for the year and adjusting that amount by the business/investment
use percentage."
SUBJECT YEAR-5-RULES)

(BUSINESS-USE-RULE001-YR-5
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-5 MILEAGE)
    (KNOWN TOTAL-MILEAGE-YR-5)
    (KNOWN TOTAL-B&P-MILEAGE-YR-5)
    (KNOWN BUSINESS-MILEAGE-YR-5))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-5TH-YEAR
        (FQUOTIENT (VALUE-OF BUSINESS-MILEAGE-YR-5 ()
            (VALUE-OF TOTAL-MILEAGE-YR-5 ()
                TALLY 100)
    (CONCLUDE B&P-USE-5TH-YEAR
        (FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE-YR-5 ()
            (VALUE-OF TOTAL-MILEAGE-YR-5 ()
                TALLY 100))
SUBJECT YEAR-5-RULES)

(BUSINESS-USE-RULE002-YR-5
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-5 BUSINESS-USE-100%))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-5TH-YEAR 1 TALLY 100)
    (CONCLUDE B&P-USE-5TH-YEAR 1 TALLY 100))
SUBJECT YEAR-5-RULES)

(BUSINESS-USE-RULE004-YR-5
PREMISE ($AND
    (SAME BUSINESS-USE-METHOD-YR-5 OTHER)
    (KNOWN OTHER-%-YR-5))
ACTION
(DO-ALL
    (CONCLUDE BUSINESS-USE-5TH-YEAR
        (FQUOTIENT (VALUE-OF OTHER-%-YR-5 () 100) TALLY 100)
    (CONCLUDE B&P-USE-5TH-YEAR
        (FQUOTIENT (VALUE-OF OTHER-%-YR-5 () 100) TALLY 100))
SUBJECT YEAR-5-RULES)

(BUSINESS-USE-RULE003-YR-5
PREMISE ($AND
    (KNOWN PRODUCTION-OF-INCOME-MILEAGE-YR-5)
    (KNOWN BUSINESS-MILEAGE-YR-5))
ACTION
(DO-ALL
    (CONCLUDE TOTAL-B&P-MILEAGE-YR-5
        (PLUS (VALUE-OF BUSINESS-MILEAGE-YR-5 ()

162
(VALUE-OF PRODUCTION-OF-INCOME-MILEAGE-YR-5))
TALLY 100)
SUBJECT YEAR-5-RULES)

(BUSINESS-USE-RULE005-YR-5
PREMISE ($AND
(SAME BUSINESS-USE-METHOD-YR-5 DAYS-OF-THE-WEEK)
(KNOWN BUSINESS-USE-DAYS-YR-5))
ACTION
(DO-ALL
(CONCLUDE BUSINESS-USE-5TH-YEAR
(FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-5 ()) 7)
TALLY 100)
(CONCLUDE B&P-USE-5TH-YEAR
(FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-5 ()) 7)
TALLY 100))
SUBJECT YEAR-5-RULES)

(COMPUTE-YR-6
PREMISE ($AND
(SAME YEAR-6? YES))
ACTION
(DO-ALL
(CONCLUDE YEAR-OF-COMPUTATION
(PLUS
(VALUE-OF YEAR-OF-COMPUTATION ())
1)
TALLY 100))
SUBJECT YEAR-5-RULES)

Definition of context for sixth year calculations

(YEAR-6
GOALS (INCLUSION-AMOUNT-6TH-YEAR)
DISPLAYRESULTS #$TRUE)

Definition of parameters for sixth year calculations

(INCLUSION-AMOUNT-6TH-YEAR
PRINT? #$TRUE
UPDATED-BY ((INCLUSION-AMOUNT-RULE001-YR-6
INCLUSION-AMOUNT-RULE002-YR-6
INCLUSION-AMOUNT-RULE003-YR-6
INCLUSION-AMOUNT-RULE004-YR-6))

(TOTAL-MILEAGE-YR-6
PRINT? #$TRUE
PROMPT (Enter the |TOTAL| MILEAGE:)
HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is
fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated.

(BUSINESS-USE-METHOD-YR-6
 PRINT? #!TRUE
 EXPECT (MILEAGE DAYS-OF-THE-WEEK BUSINESS-USE-100% OTHER)
 PROMPT (!What\lmethod\lwas\lused\lto\lcalculate\lBUSINESS-USE\l))

(BUSINESS-USE-DAYS-YR-6
 PRINT? #!TRUE
 PROMPT (!Enter the number of days per week the car was used for business use:\l(newline w3))

(OTHER-%-YR-6
 PRINT? #!TRUE
 PROMPT (!Enter the business use %:\l(newline w3) !For example: If the % is 80% - Enter \rightarrow 80\l))

(BUSINESS-MILEAGE-YR-6
 PRINT? #!TRUE
 PROMPT (!Enter \lthe \lBUSINESS \lMILEAGE \l)
 HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use. ")

(PRODUCTION-OF-INCOME-MILEAGE-YR-6
 PRINT? #!TRUE
 PROMPT (!Enter \lthe \lPRODUCTION \lOF \lINCOME \lMILEAGE \l)
 HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test")

(BUSINESS-USE-6TH-YEAR
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE001-YR-6 BUSINESS-USE-RULE002-YR-6
 BUSINESS-USE-RULE004-YR-6
 BUSINESS-USE-RULE005-YR-6))

(B&P-USE-6TH-YEAR
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE001-YR-6 BUSINESS-USE-RULE002-YR-6
 BUSINESS-USE-RULE004-YR-6
 BUSINESS-USE-RULE005-YR-6))

(TOTAL-B&P-MILEAGE-YR-6
 PRINT? #!TRUE
 UPDATED-BY (BUSINESS-USE-RULE003-YR-6))

(YEAR-7-FLAG UPDATED-BY (COMPUTE-YR-7 INSTANTIATE-FRAME-7-RULE001))

(YEAR-7-DUMMY-PARM
 UPDATED-BY (INSTANTIATE-FRAME-7-RULE002))

(YEAR-7-?
EXPECT (YES NO)
PROMPT (Would l you l likely l tol lexamine l lhe l tax l consequences l lofl lthe l business l luse l lofl lthe l automobile l ffor l thel SEVENTH TAX l year l ?)

Definition of rules for sixth year calculations

(INCLUSION-AMOUNT-RULE001-YR-6
PREMISE
($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
 (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
 (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
 (KNOWN B&P-USE-6TH-YEAR)
 (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
 (VALUE-OF YEAR-DISPOSED ()))
 ACTION
 (DO-ALL
 (CONCLUDE INCLUSION-AMOUNT-6TH-YEAR
 (TIMES
 (TIMES
 (FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
 (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
 (VALUE-OF FMV-AUTOMOBILE-LEASED ()
 6))
 (VALUE-OF B&P-USE-6TH-YEAR ()))
 TALLY 100))

TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-6-RULES)

(INCLUSION-AMOUNT-RULE002-YR-6
PREMISE
($AND
 (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 870101)
 (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
 (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
 (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 50000)
 (KNOWN B&P-USE-6TH-YEAR)
 ACTION
 (DO-ALL
 (CONCLUDE INCLUSION-AMOUNT-6TH-YEAR
 (TIMES
 (TIMES
 1
 (DOLLAR-AMOUNT-YR-4-6-BEFORE-1987
 (VALUE-OF FMV-AUTOMOBILE-LEASED ()
 6))
 (VALUE-OF B&P-USE-6TH-YEAR ()))
 TALLY 100))

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TRANSLATION "The inclusion amount for automobiles with a FMV or $50,000 or less is determined by prorating the dollar amount (from the Table referenced in Reg Section 1.280-5(e)(1)) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-6-RULES

(INCLUSION-AMOUNT-RULE003-YR-6
PREMISE
($AND
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
  (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
  (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
  (KNOWN B&P-USE-6TH-YEAR)
  (EQUAL* (VALUE-OF YEAR-OF-COMPUTATION ())
    (VALUE-OF YEAR-DISPOSED ()))))
ACTION
(DO-ALL
  (CONCLUDE INCLUSION-AMOUNT-6TH-YEAR
    (TIMES
      (TIMES
        (FQUOTIENT (VALUE-OF DAYS-LEASED-LAST-YEAR ()) 365)
        (DOLLAR-AMOUNT-AFTER-1986
          (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 5))
        (VALUE-OF B&P-USE-6TH-YEAR ())
        TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-6-RULES

(INCLUSION-AMOUNT-RULE004-YR-6
PREMISE
($AND
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 861231)
  (GREATERP* (VALUE-OF FMV-AUTOMOBILE-LEASED) 11250)
  (LESSEQ* (VALUE-OF FMV-AUTOMOBILE-LEASED) 60000)
  (KNOWN B&P-USE-6TH-YEAR))
ACTION
(Do-All
  (Conclude INCLUSION-AMOUNT-6TH-YEAR
    (Times
      (Times
        1
        (DOLLAR-AMOUNT-AFTER-1986
          (VALUE-OF FMV-AUTOMOBILE-LEASED ()) 6))
        (VALUE-OF B&P-USE-6TH-YEAR ())
        TALLY 100))
TRANSLATION "The inclusion amount for automobiles with a FMV or $60,000 or less is determined by prorating the dollar amount (from the Table III in Publication 917) by the number of days in the lease for the year and adjusting that amount by the business/investment use percentage."

SUBJECT YEAR-6-RULES

166
(BUSINESS-USE-RULE001-YR-6)
PREMISE ($AND)
(SAME BUSINESS-USE-METHOD-YR-6 MILEAGE)
(KNOWN TOTAL-MILEAGE-YR-6)
(KNOWN TOTAL-B&P-MILEAGE-YR-6)
(KNOWN BUSINESS-MILEAGE-YR-6))
ACTION
(DO-ALL)
(CONCLUDE BUSINESS-USE-6TH-YEAR)
(FQUOTIENT (VALUE-OF BUSINESS-MILEAGE-YR-6 ())
(VALUE-OF TOTAL-MILEAGE-YR-6 ())
TALLY 100)
(CONCLUDE B&P-USE-6TH-YEAR)
(FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE-YR-6 ())
(VALUE-OF TOTAL-MILEAGE-YR-6 ())
TALLY 100))
SUBJECT YEAR-6-RULES)

(BUSINESS-USE-RULE002-YR-6)
PREMISE ($AND)
(SAME BUSINESS-USE-METHOD-YR-6 BUSINESS-USE-100%))
ACTION
(Do-ALL)
(CONCLUDE BUSINESS-USE-6TH-YEAR 1 TALLY 100)
(CONCLUDE B&P-USE-6TH-YEAR 1 TALLY 100))
SUBJECT YEAR-6-RULES)

(BUSINESS-USE-RULE004-YR-6)
PREMISE ($AND)
(SAME BUSINESS-USE-METHOD-YR-6 OTHER)
(KNOWN OTHER-%-YR-6))
ACTION
(Do-ALL)
(CONCLUDE BUSINESS-USE-6TH-YEAR)
(FQUOTIENT (VALUE-OF OTHER-%-YR-6 ()) 100) TALLY 100)
(CONCLUDE B&P-USE-6TH-YEAR)
(FQUOTIENT (VALUE-OF OTHER-%-YR-6 ()) 100) TALLY 100))
SUBJECT YEAR-6-RULES)

(BUSINESS-USE-RULE003-YR-6)
PREMISE ($AND)
(KNOWN PRODUCTION-OF-INCOME-MILEAGE-YR-6)
(KNOWN BUSINESS-MILEAGE-YR-6))
ACTION
(Do-ALL)
(CONCLUDE TOTAL-B&P-MILEAGE-YR-6)
(PLUS (VALUE-OF BUSINESS-MILEAGE-YR-6 ()
(VALUE-OF PRODUCTION-OF-INCOME-MILEAGE-YR-6))
TALLY 100))
SUBJECT YEAR-6-RULES)

(BUSINESS-USE-RULE005-YR-6)
PREMISE ($AND)
(SAME BUSINESS-USE-METHOD-YR-6 DAYS-OF-THE-WEEK)
(KNOWN BUSINESS-USE-DAYS-YR-6))
ACTION
(DO-ALL
 (CONCLUDE BUSINESS-USE-6TH-YEAR
   (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-6 () 7)
   TALLY 100)
 (CONCLUDE B&P-USE-6TH-YEAR
   (FQUOTIENT (VALUE-OF BUSINESS-USE-DAYS-YR-6 () 7)
   TALLY 100))
SUBJECT YEAR-6-RULES)

(COMPUTE-YR-7
PREMISE ($AND
   (SAME YEAR-7-? YES))
ACTION
(DO-ALL
 (CONCLUDE YEAR-OF-COMPUTATION
   (PLUS
    (VALUE-OF YEAR-OF-COMPUTATION ()
    1)
   TALLY 100))
SUBJECT YEAR-6-RULES)

50000)
(KNOWN B&P-USE-6TH-YEAR))
ACTION
(DO-ALL
(CON

B.4 Standard Mileage Rates (KB)

Definition of context structure for the standard mileage rate issue
(define elem-table '((STD-MILEAGE-RATE-FRAME)))

(DOMAIN VALUE "Standard Mileage Rate Calculations ")

Definition of context for std-rate calculations

(STD-MILEAGE-RATE-FRAME
 DISPLAYRESULTS #TTRUE
 GOALS (ITC COST-RECOVERY-DEDUCTION-1ST-YEAR)
 INITIALDATA (AUTOMOBILE-EXPENSE-METHOD AUTOMOBILE-DATE-
 ACQUIRED))

Definition of parameters for std-rate calculations

(AUTOMOBILE-BASIS UPDATED-BY (RULE005 RULE006 RULE007))
(AUTOMOBILE-COST
PROMPT (What is the cost of the automobile?))

(AUTOMOBILE-DATE-ACQUIRED
PROMPT (Enter the date the automobile was acquired! (NEWLINE W3) For example: If the date is April 3, 1985 : enter -> 850403))

(TOTAL-MILEAGE
PROMPT (Enter the TOTAL MILEAGE)
HELP "When using the standard mileage rate, the total business mileage for all cars must be combined to figure the 15,000 mile annual limit on the 22.5 cent or 21 cent mileage rate. If the car is fully depreciated (driven more than 60,000 business miles in the life of the car at the maximum rate) the mileage rate is limited to 11 cents for each mile of business use. If the car is fully depreciated enter 60,000 miles. For example, if the car was driven AT LEAST 15000 in the past four tax years, the car would be fully depreciated."

(AUTOMOBILE-EXPENSE-METHOD
EXPECT (STANDARD-MILEAGE-RATE-BUSINESS
STANDARD-MILEAGE-RATE-CHARITABLE
STANDARD-MILEAGE-RATE-MEDICAL
STANDARD-MILEAGE-RATE-MOVING)
PROMPT (Enter the method used to calculate the automobile expense)
HELP "Instead of figuring actual operating and fixed expenses, you may use a standard mileage rate. If you do not choose the standard mileage rate in the first year, you may not use it for that car in any year. In later years you may use the standard mileage rate or actual expenses. The standard mileage rate for 1986 and 1987 is 21 cents and 22.5 cents respectively"

(BUSINESS-MILEAGE
PROMPT (Enter the BUSINESS MILEAGE)
HELP "Temp. Reg. Section 1.274-5T requires the taxpayer to make a separate entry in a log, diary, or similar record to support the business use."

(MEDICAL-MILEAGE
PROMPT (Enter the MEDICAL MILEAGE)
HELP "In lieu of a deduction based on the actual expenses incurred in using an automobile for transportation, the IRS allows a standard mileage rate of 9 cents a mile (plus parking and tolls) where the transportation expenses are deductible as a medical expense"

(MOVING-MILEAGE
PROMPT (Enter the MOVING MILEAGE)
HELP "Where an automobile is used in making the move, a taxpayer may deduct either (1) the actual out-of-pocket expenses (gasoline, repairs, etc.) or (@) a standard mileage allowance of 9 cents per mile"

(CHARITABLE-MILEAGE
PROMPT (Enter the CHARITABLE MILEAGE)
HELP "In lieu of a deduction based upon the actual expenses incurred in using an automobile, the taxpayer may use the statutory standard mileage rate of 12 cents per mile. Parking and tolls are deductible in addition to the standard rate. Depreciation and insurance are not."

(PRODUCTION-OF-INCOME-MILEAGE
PROMPT (Enter label [PRODUCTION] [OF] [INCOME] [MILEAGE]:)
HELP "The mileage driven in an activity for the production of income is used to calculate the business deduction, but is not used in the determination of the 50% business use test"

(BUSINESS-USE-1ST-YEAR
UPDATED-BY (RULE006))

(B&P-USE-1ST-YEAR
UPDATED-BY (RULE03))

(TOTAL-B&P-MILEAGE
UPDATED-BY (RULE008))

(RATE-15000-UNDER
UPDATED-BY (RULE009))

(RATE-OVER-15000
UPDATED-BY (RULE009))

(COST-RECOVERY-DEDUCTION-1ST-YEAR
UPDATED-BY (RULE007 RULE011 RULE012 RULE013 RULE014 RULE015))

(ITC
UPDATED-BY (RULE001 RULE002 RULE003 RULE004 RULE005 RULE010))

(CALC-ITC-FLAG
PROMPT (Do you want to calculate the ITC for this automobile?!) EXPECT (YES NO))

(ITC-ELECTION
PROMPT (Please indicate taxpayer's election for ITC?)
TYPE SINGLEVALUED
EXPECT (REDUCED-ITC BASIS-ADJUSTMENT)
HELP "Where an election is made to claim a reduced credit for an automobile instead of reducing the basis by one-half of the ITC amount, the ceiling is 2/3 of the applicable ceiling amount. ($667 or $450)."

Definition of rules for std-rate calculations

(RULE001
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850403)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
(GREATERP*
(VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
(SAME ITC-ELECTION REDUCED-ITC))
ACTION (DO-ALL
(CONCLUDE ITC (TIMES

170
(VALUE-OF BUSINESS-USE-1ST-YEAR ())
(MIN*
(TIMES
(VALUE-OF AUTOMOBILE-COST ())
.04)
667))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(VALUE-OF AUTOMOBILE-COST ()) TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE002
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850402)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 851231)
(GREATERP* 
(VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
(SAME ITC-ELECTION REDUCED-ITC))
ACTION (DO-ALL
(CONCLUDE ITC (TIMES
(VALUE-OF BUSINESS-USE-1ST-YEAR ())
(MIN*
(TIMES
(VALUE-OF AUTOMOBILE-COST ())
.04)
450))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(VALUE-OF AUTOMOBILE-COST ()) TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE003
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
(LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 850403)
(GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ()) 841231)
(GREATERP* 
(VALUE-OF BUSINESS-USE-1ST-YEAR ()) 0.5)
(SAME ITC-ELECTION BASIS-ADJUSTMENT))
ACTION (DO-ALL
(CONCLUDE ITC (TIMES
(VALUE-OF BUSINESS-USE-1ST-YEAR ())
(MIN*
(TIMES
(VALUE-OF AUTOMOBILE-COST ())
.06)
1000))
TALLY 100)
(CONCLUDE AUTOMOBILE-BASIS
(DIFFERENCE
(VALUE-OF AUTOMOBILE-COST ())
(FQUOTIENT (VALUE-OF ITC ())
2))
TALLY 100))

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SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE004
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 850402)
  (LESSP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 851231)
  (GREATERP*
    (VALUE-OF BUSINESS-USE-1ST-YEAR () 0.5)
    (SAME ITC-ELECTION BASIS-ADJUSTMENT))
ACTION (DO-ALL
  (CONCLUDE ITC (TIMES
    (VALUE-OF BUSINESS-USE-1ST-YEAR ())
    (MIN*
      (TIMES
        (VALUE-OF AUTOMOBILE-COST ())
        0.06)
        675))
      TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (DIFFERENCE
      (VALUE-OF AUTOMOBILE-COST ())
      (FQUOTIENT (VALUE-OF ITC ())
      2))
    TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE005
SUBJECT STD-MILEAGE-RATE-FRAME-RULES
PREMISE ($AND (SAME CALC-ITC-FLAG YES)
  (GREATERP* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED () 1985)
  (LESSEQ* (VALUE-OF BUSINESS-USE-1ST-YEAR () 0.5))
ACTION (DO-ALL (CONCLUDE ITC 0 TALLY 100)
  (CONCLUDE AUTOMOBILE-BASIS
    (VALUE-OF AUTOMOBILE-COST ()) TALLY 100)))

(RULE010
PREMISE ($AND (SAME CALC-ITC-FLAG NO))
ACTION (DO-ALL
  (CONCLUDE ITC 0 TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

EXPENSE RULES
(RULE006
PREMISE ($AND
  (KNOWN TOTAL-MILEAGE)
  (KNOWN TOTAL-B&P-MILEAGE)
  (KNOWN BUSINESS-MILEAGE))
ACTION (DO-ALL
  (CONCLUDE BUSINESS-USE-1ST-YEAR

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(FQUOTIENT (VALUE-OF BUSINESS-MILEAGE ())
 (VALUE-OF TOTAL-MILEAGE ()))
TALLY 100)
CONCLUDE B&P-USE-1ST-YEAR
(FQUOTIENT (VALUE-OF TOTAL-B&P-MILEAGE ())
 (VALUE-OF TOTAL-MILEAGE ()))
TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE007
PREMISE
($AND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-
 BUSINESS)
 (LESSEQ* (VALUE-OF TOTAL-MILEAGE ()) 60000)
 (LESSEQ* (VALUE-OF TOTAL-B&P-MILEAGE ()) 15000)
 (KNOWN RATE-15000-UNDER))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
 (TIMES (VALUE-OF TOTAL-B&P-MILEAGE ())
 (VALUE-OF RATE-15000-UNDER ()))
TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE008
PREMISE ($AND
 (KNOWN PRODUCTION-OF-INCOME-MILEAGE)
 (KNOWN BUSINESS-MILEAGE))
ACTION
(DO-ALL
 (CONCLUDE TOTAL-B&P-MILEAGE
 (PLUS (VALUE-OF BUSINESS-MILEAGE ())
 (VALUE-OF PRODUCTION-OF-INCOME-MILEAGE))
TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE009
PREMISE ($AND (LESSEQ* (VALUE-OF AUTOMOBILE-DATE-ACQUIRED ())
851231))
ACTION
(DO-ALL
 (CONCLUDE RATE-15000-UNDER .21 TALLY 100)
 (CONCLUDE RATE-OVER-15000 .11 TALLY 100))
ELSE
(DO-ALL
 (CONCLUDE RATE-15000-UNDER .225 TALLY 100)
 (CONCLUDE RATE-OVER-15000 .11 TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)
(RULE011
PREMISE
($AND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-
BUSINESS)
   (LESSEQ* (VALUE-OF TOTAL-MILEAGE ()) 60000)
   (GREATERP* (VALUE-OF TOTAL-B&P-MILEAGE ()) 15000)
   (KNOWN RATE-15000-UNDER)
   (KNOWN RATE-OVER-15000))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
   (PLUS
    (TIMES (VALUE-OF RATE-15000-UNDER ()) 15000)
    (TIMES (VALUE-OF RATE-OVER-15000 ())
     (DIFFERENCE (VALUE-OF TOTAL-B&P-MILEAGE ())
                  15000))))
 TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE012
PREMISE
($AND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-
BUSINESS)
   (GREATERP* (VALUE-OF TOTAL-MILEAGE ()) 60000)
   (KNOWN TOTAL-B&P-MILEAGE)
   (KNOWN RATE-15000-UNDER)
   (KNOWN RATE-OVER-15000))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
   (PLUS
    (TIMES (VALUE-OF RATE-15000-UNDER ()) 15000)
    (TIMES (VALUE-OF RATE-OVER-15000 ())
     (DIFFERENCE (VALUE-OF TOTAL-B&P-MILEAGE ())
                  15000))))
 TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE013
PREMISE
($AND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-
CHARITABLE)
   (KNOWN CHARITABLE-MILEAGE))
ACTION
(DO-ALL
 (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
   (TIMES (VALUE-OF CHARITABLE-MILEAGE ()) .12) TALLY 100)
 (CONCLUDE ITC 0 TALLY 100)
 (CONCLUDE ITC-ACRS-2-FLAG YES TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)
(RULE014
PREMISE
(SAND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-MEDICAL)
  (KNOWN MEDICAL-MILEAGE))
ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
    (TIMES (VALUE-OF MEDICAL-MILEAGE () .09) TALLY 100)
  (CONCLUDE ITC 0 TALLY 100)
  (CONCLUDE ITC-ACRS-2-FLAG YES TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)

(RULE015
PREMISE
(SAND (SAME AUTOMOBILE-EXPENSE-METHOD STANDARD-MILEAGE-RATE-MOVING)
  (KNOWN MOVING-MILEAGE))
ACTION
(DO-ALL
  (CONCLUDE COST-RECOVERY-DEDUCTION-1ST-YEAR
    (TIMES (VALUE-OF MOVING-MILEAGE () .09) TALLY 100)
  (CONCLUDE ITC 0 TALLY 100)
  (CONCLUDE ITC-ACRS-2-FLAG YES TALLY 100))
SUBJECT STD-MILEAGE-RATE-FRAME-RULES)
Appendix C.
Special Functions

C.1 Date Reformating Functions

(DEFINE (REFORMAT-DATE exp cf)
(let ((date (m-eval (first exp) cf)))
(LET ((X-DATE (EXPLODE DATE)))
(define (loop date lst)
(cond
  ((null? date)
   (+ (* (string->number (first lst)) 100000)
    (* (string->number (second lst)) 10000)
    (* (string->number (third lst)) 100)
    (* (string->number (fourth lst)) 10)
    (* (string->number (fifth lst)))))
  ((not (number? (string->number (car date))))
   999999)
  ((equal? (caddr date) '/')
   (loop (cdddr date) (append (list (car date) (cadr date))
    lst)))
  ((equal? (cadr date) '/)
   (loop (cdddr date) (append (list '0l (car date)) lst)))
  (else
   (loop () (append (list (car date) (cadr date)) lst)))))
(loop x-date ()))))

(DEFINE (REFORMAT-MONTH exp cf)
(let ((date (m-eval (first exp) cf)))
(LET ((X-DATE (EXPLODE DATE)))
(cond
  ((not (number? (string->number (car x-date))))
   99)
  (else
   (+ (* (string->number (third x-date)) 10)
    (* (string->number (fourth x-date)) 1)))))

(DEFINE (REFORMAT-YEAR exp cf)
(let ((date (m-eval (first exp) cf)))
(LET ((X-DATE (EXPLODE DATE)))
(cond
  ((not (number? (string->number (car x-date))))
   99)
  (else
   (+ (* (string->number (first x-date)) 10)
    (* (string->number (second x-date)))))

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(DEFINE (NUMBER-OF-DAYS exp cf)
  (let ((exp (CADAR exp)))
    (cond ((equal? exp 'acquired)
           (let ((month (caar (getprop 'month-acquired 'parm-values)))
                 (year (caar (getprop 'year-acquired 'parm-values)))
                 (day (reformat-day 'automobile-date-acquired)))
                 (+ 1 (- 365 (count-days month day))))))
    ((equal? exp 'disposed)
     (let ((month (caar (getprop 'month-acquired 'parm-values)))
           (day (reformat-day 'automobile-date-disposed)))
      (count-days month day))))))

(DEFINE (COUNT-DAYS MONTHS DAYS)
  (DEFINE (LOOP MONTHS DAYS CTR TOTAL LST)
    (COND ((= CTR MONTHS) (+ TOTAL DAYS))
      (ELSE (LOOP MONTHS DAYS
                (+ CTR 1) (+ TOTAL (CAR LST)) (CDR LST))))))
  (LOOP MONTHS DAYS 1 0 '(31 28 31 30 31 30 31 31 30 31 30 31))
)

(DEFINE (REFORMAT-DAY date)
  (let ((date (CAAR (getprop date 'parm-values))))
    (LET ((X-DATE (EXPLODE DATE)))
      (cond
        ((not (number? (string->number (car x-date)))) 99)
        (else
         (+ (* (string->number (fifth x-date)) 10)
            (* (string->number (sixth x-date)) 1)))))))
C.2 Table Look-Up Functions

(DEFINE (FIND-MID-QUARTER-RATE exp cf)
  (let ((month (m-eval (first exp) cf)))
    (DEFINE (LOOP month lst)
      (cond ((null? lst) nil)
            ((EQUAL? month (first (first lst)))
              (second (first lst)))
            (else (loop month (cdr lst)))))))

(loop month '((1 .875) (2 .875) (3 .875)
              (4 .625) (5 .625) (6 .625)
              (7 .375) (8 .375) (9 .375)
              (10 .125) (11 .125) (12 .125) (0 .875))))

(DEFINE (FIND-AUTOMOBILE-LEASE-VALUE exp cf)
  (let ((fmv-automobile (m-eval (first exp) cf)))
    (DEFINE (LOOP X LST)
      (COND ((NULL? LST) (QUOTE NO-MATCH-IN-TABLE))
            ((AND (> X (CAAR LST))
                (< X (CADAR LST))) (CADAR LST))
            ((> X 60000) (+ (* 0.25 X) 500))
            (ELSE (LOOP X (CDR LST))))))

(LOOP FMV-AUTOMOBILE
  (QUOTE ((0 999 600)
           (1000 1999 850)
           (2000 2999 1100)
           (3000 3999 1350)
           (4000 4999 1600)
           (5000 5999 1850)
           (6000 6999 2100)
           (7000 7999 2350)
           (8000 8999 2600)
           (9000 9999 2850)
           (10000 10999 3100)
           (11000 11999 3350)
           (12000 12999 3600)
           (13000 13999 3850)
           (14000 14999 4100)
           (15000 15999 4350)
           (16000 16999 4600)
           (17000 17999 4850)
           (18000 18999 5100)
           (19000 19999 5350)
           (20000 20999 5600)
           (21000 21999 5850)
           (22000 22999 6100)
           (23000 23999 6350)
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(38000 39999 10250)
(40000 41999 10750)
(42000 43999 11250)
(44000 45999 11750)
(46000 47999 12250)
(48000 49999 12750)
(50000 51999 13250)
(52000 53999 13750)
(54000 55999 14250)
(56000 57999 14750)
(58000 59999 15250))}))

(DEFINE (FIND-AUTOMOBILE-LEASE-VALUE exp cf)
  (let ((fmv-automobile (m-eval (first exp) cf)))
    (DEFINE (LOOP X LST)
      (COND ((NULL? LST) (QUOTE NO-MATCH-IN-TABLE))
        ((AND (> X (CAAR LST))
          (< X (CADAR LST)))
         (CADDAR LST))
        ((> X 60000) (+ (* 0.25 X) 500))
        (ELSE (LOOP X (CDR LST)))))
    (LOOP FMV-AUTOMOBILE
      (QUOTE ((0 999 600) (1000 1999 850) (2000 2999 1100)
        (3000 3999 1350) (4000 4999 1600) (5000 9999 2850)
        (10000 19999 4350) (20000 39999 10750)
        (40000 60000 15250)))))

(DEFINE (FIND-QUARTER MONTH)
  (COND (((< MONTH 4) FOURTH)
    ((AND (< MONTH 7)
      (> MONTH 3)) THIRD)
    ((AND (< MONTH 10)
      (> MONTH 6)) SECOND)
    (ELSE FIRST)))

(DEFINE (FIND-YEAR YEAR)
  (COND ( (= YEAR 4) FIRST)
    ( (= YEAR 5) SECOND)
    ( (= YEAR 6) THIRD)))

(DEFINE (FIND-YEAR-OF-LEASE YEAR)
  (COND ((= YEAR 1) FIRST)
    ((= YEAR 2) SECOND)
    ((= YEAR 3) THIRD)
    ((= YEAR 3) FOURTH)
    (ELSE FIFTH)))

DOLLAR-AMOUNT-YR-1-3-BEFORE-1987
  11250 11500 (8 7 6 6)
  11500 11750 24 21 19 17))
11750 12000 40 35 32 29))
12000 12250 56 49 44 40))
12250 12500 72 64 57 52))
12500 12750 88 78 70 63))
12750 13000 104 92 83 75))
13000 13250 120 106 95 86))
13250 13500 144 128 115 104))
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34000 35000 2516 2232 2003 1819))
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36000 37000 2741 2431 2182 1982))
37000 38000 2853 2530 2271 2063))
38000 39000 2965 2630 2361 2144))
39000 40000 3078 2730 2450 2225))
40000 41000 3190 2829 2540 2307))
41000 42000 3302 2929 2629 2388))
42000 43000 3415 3028 2718 2469))
43000 44000 3527 3128 2808 2550))
44000 45000 3639 3228 2897 2631))
(DEFINE DOLLAR-AMOUNT-YR-1-3-BEFORE-1987-ITC exp cf)
  (let ((fmv (m-eval (first exp) cf))
            (quarter (find-quarter (m-eval (second exp) cf))))
    (DEFINE (LOOP FMV MONTH LST)
      (COND ((NULL? LST) (QUOTE NO-MATCH-IN-TABLE))
            ((AND (> FMV (CAAR LST))
                 (<= FMV (CADAR LST))) (QUARTER (CADDAR LST)))
            (ELSE (LOOP FMV MONTH (CDR LST)))))
(LOOP FMV QUARTER
  '(((11250 11500 (0 0 0 0))
    (11500 11750 (0 0 0 0))
    (11750 12000 (0 0 0 0))
    (12000 12250 (0 0 0 0))
    (12250 12500 (0 0 0 0))
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    (13000 13250 (0 0 0 0))
    (13250 13500 (9 8 7 6))
    (13500 13750 (21 18 16 15))
    (13750 14000 (33 29 26 24))
    (14000 14250 (45 40 36 32))
    (14250 14500 (57 51 45 41))
    (14500 14750 (69 61 55 50))
    (14750 15000 (81 72 65 59))
    (15000 15250 (94 83 74 68))
    (15250 15500 (106 94 84 76))
    (15500 15750 (118 105 94 85))
    (15750 16000 (130 115 103 94))
    (16000 16250 (142 126 113 103))
    (16250 16500 (154 137 123 111))
    (16500 16750 (166 148 132 120))
    (16750 17000 (179 158 142 129))
    (17000 17500 (197 175 156 142))
    (17500 18000 (221 196 176 160))
    (18000 18500 (245 218 195 177))
    (18500 19000 (270 239 214 195))
    (19000 19500 (294 261 234 212))
    (19500 20000 (318 282 253 230))
    (20000 20500 (343 304 272 247))
    (20500 21000 (367 325 291 265))
    (21000 21500 (391 347 311 283))
    (21500 22000 (416 369 330 300))
    (22000 23000 (454 401 359 326))
    (23000 24000 (501 444 398 362))
    (24000 25000 (549 487 436 397))
    (25000 26000 (598 530 475 432))
  )
(DEFINE \textbf{DOLLAR-AMOUNT-YR-4-6-BEFORE-1987} \textit{exp cf})
(let ((fmv (m-eval (first exp) cf))
    (YEAR (find-YEAR (m-eval (second exp) cf))))
(DEFINE (LOOP FMV YEAR LST)
  (COND ((NULL? LST) (QUOTE NO-MATCH-IN-TABLE))
    ((AND (> FMV (CAAR LST)) (<= FMV (CADAR LST))) (YEAR (CADDAR LST))))
  (ELSE (LOOP FMV YEAR (CDR LST)))))

(LOOP FMV YEAR
  '((18000 18500 (15 0 0))
    (18500 19000 (45 0 0))
    (19000 19500 (75 0 0))
    (19500 20000 (105 0 0))
    (20000 20500 (135 0 0))
    (20500 21000 (165 0 0))
    (21000 21500 (195 0 0))
    (21500 22000 (225 0 0))
    (22000 23000 (270 0 0))
    (23000 24000 (330 42 0))
    (24000 25000 (390 102 0))
    (25000 26000 (450 162 0))
    (26000 27000 (510 222 0))
    (27000 28000 (570 282 0))
    (28000 29000 (630 342 54))
    (29000 30000 (690 402 114))
    (30000 31000 (750 462 174))
    (31000 32000 (810 522 234))
    (32000 33000 (870 582 294))
))
(DEFINE (DOLLAR-AMOUNT-AFTER-1986 exp cf)
  (let ((fmv (m-eval (first exp) cf))
  (YEAR (FIND-YEAR-OF-LEASE (m-eval (second exp) cf))))
  (DEFINE (LOOP FMV YEAR LST)
    (COND ((NULL? LST) (QUOTE NO-MATCH-IN-TABLE))
          ((AND (> FMV (CAAR LST))
               (<= FMV (CADAR LST)))
           (YEAR (CADDAR LST)))
          (ELSE (LOOP FMV YEAR (CDR LST)))))
  (LOOP FMV YEAR
    '((12800 13100 (2 5 7 8 9))
      (13100 13400 (6 14 20 24 28))
      (13400 13700 (10 23 34 41 47))
      (13700 14000 (15 32 47 57 65))
      (14000 14300 (19 41 61 73 84))
      (14300 14600 (23 50 74 89 103))
      (14600 14900 (27 59 88 105 122))
      (14900 15200 (31 68 101 122 140))
      (15200 15500 (35 77 115 138 159))
      (15500 15800 (40 87 128 154 178))
      (15800 16100 (44 96 142 170 196))
      (16100 16400 (48 105 155 186 215))
      (16400 16700 (52 114 169 203 234))
      (16700 17000 (56 123 182 219 253))
      (17000 17500 (62 135 200 240 277))
      (17500 18000 (69 150 223 267 309))
      (18000 18500 (76 166 246 294 340))
      (18500 19000 (83 181 268 321 371))
      (19000 19500 (90 196 291 348 402))
      (19500 20000 (97 211 313 375 433))
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