Dalworth Database Documentation

Primary Order Tables

The system uses a series of order header and order detail files, one set for each of the four Service Types. This was done so that each service type could accommodate somewhat different data. The tables are:

Residential Carpet Cleaning:	hresi_cc.dbf	(header)
	dresi_cc.dbf	(detail)
Commercial Carpet Cleaning:	hcomm_cc.dbf	(header)
	dcomm_cc.dbf	(detail)
Duct Cleaning:	hduct.dbf	(header)
	dduct.dbf	(detail)
Deflood:	hdeflood.dbf	(header)
	ddeflood.dbf	(detail)

Restoration has never been implemented...

Each of the header tables is similar to hresi_cc.dbf, whose structure is shown below:

hresi_cc.dbf table structure:

Field Name	Type	Width	Dec	Comment
TICKET_NUM	Character	6		Foreign key to h_order.dbf
CUST_ID	Character	6		Foreign key to custmast.dbf
REJECTED	Logical	1		Set to .T. if rejected (job redone)
TRANS_NUM	Character	6		Ticket_num of rework
CSR_ID	Character	3		Foreign key to rights.dbf (user table)
AD_SOURCE	Character	3		Foreign key to ad_src.dbf (id_code)
ALT_ADDR	Logical	1		Set to .T. if m_alt_ad.dbf contains link
TECH_REFER	Character	3		Tech req - foreign key to techmast.dbf
D_1ST_CALL	Date	8		Original order date
T_1ST_CALL	Character	4		Original order time
D_SCHEDULE	Date	8		Service date
T_SCHEDULE	Character	20		Service time - from desc in timeslot.dbf
D_DISPATCH	Date	8		Date dispatched
T_DISPATCH	Character	4		Time dispatched
D_COMPLETE	Date	8		Date complete
T_COMPLETE	Character	4		Time complete
TRAN_TYPE	Numeric	2		See 'Transaction Fields' below
TRAN_STAT	Numeric	2		See 'Transaction Fields' below
COMP_TYPE	Numeric	2		See 'Transaction Fields' below
CANC_TYPE	Numeric	1		See 'Transaction Fields' below
MOP	Numeric	2		Foreign key to mop.dbf (type_id)
AMOUNT	Numeric	9	2	Job total (before tax)
RESCHD_NUM	Numeric	1		Number of times rescheduled, init to zero
COMPANY	Character	3		Contractor who did job: cont_id in contmast.dbf
TECH_ID	Character	3		Tecnician who did job: tech_id in techmast.dbf
B_PERSON	Character	3		userid (rights.dbf) who booked job
L_PERSON	Character	3		userid (rights.dbf) who last modified job
C_PERSON	Character	3		userid (rights.dbf) who cancelled job
NOTE	Memo	10		Notes to technician - print on ticket
SPECIAL1	Character	3		? Doesn't appear to be used

GRADE	Numeric	3		Technician grade used for QA
TAX_PERC	Numeric	5	2	Posted from city_tax.dbf
SPEC_ID	Numeric	4		Foreign key to spec_hd.dbf (spec_id)
SD_NAME	Character	10		Schedule discount name - not sure where this comes from…
SD_AMT	Numeric	4	1	Schedule discount in percentage
MIN_PRC	Numeric	6	2	Minimum price from area.dbf
MP_USED	Logical	1		Set to .T. if min price used
BTID	Numeric	4		?
COMPANYID	Numeric	2		Foreign key to company.dbf
COMP_REFER	Numeric	3		?
REPEAT	Logical	1		?
CC_NUM	Character	16		Credit card number
CC_EXPDATE	Character	4		Credit card expiration date
DL_NUM	Character	16		Drivers license number
DL_DOB	Date	8		Drivers license DOB
AUTH_CODE	Character	10		Credit card auth code
T_ARRIVAL	Character	4		Time of arrival

Each of the order detail files is similar to dresi_cc, whose structure is shown below:

Field Name	Type	Width	Dec	Comment
TICKET_NUM	Character	6		Foreign key to hresi_cc.dbf
SERV_TYPE	Character	2		See 'Detail service type' below
ITEM_NUM	Numeric	2		Order item number (1..n)
NOTE	Character	40		Description of item; unit priced items use abbr from unitspec.dbf
AMOUNT	Numeric	9	2	Line item amount. Because of order level discounts, items may not total to hresi_cc.amount
EXEMPT	Logical	1		? tax-exempt ?
INFRAN	Logical	1		Set to .T. if in franchise
ORIG_BOOK	Logical	1		?
COMMISSION	Numeric	1		?
ENTER_BY	Character	1		?
AUTO_PRC	Logical	1		Set to .T. if detail service is auto-priced
PRC_TYPE	Character	1		'U' for unit priced, 'I' for item priced
NUM_UNITS	Numeric	4	2	Number of units, if unit priced
UNIT_PRC	Numeric	5	2	Price per unit
BASE_PRC	Numeric	9	2	Price if item priced
USER_ADJ	Memo	10		Comma delimited string, each entry is a foreign key to adjust.dbf
MANU_TYPE	Numeric	1		?
MANU_AMT	Numeric	8	2	?
PART_UNITS	Numeric	4	2	Sum of unit priced items which were less than 1 unit - not sure how this is used…
APPLY2MP	Logical	1		Set to .T. if line item applies toward minimum price
SCHDDISC	Logical	1		Set to .T. if scheduling discount applies

Another important order table is h_order.dbf. This table is used to help accommodate 4 sets of header/detail tables by recording every order entered into the header tables into h_order.dbf. The structure of this table is:

h_order.dbf table structure:

Field Name	Type	Width	Dec	Comments
TICKET_NUM	Character	6		Primary key
CUST_ID	Character	6		Foreign key to custmast.dbf
ALT_ADDR	Logical	1		Set to .T. if m_alt_ad.dbf contains link
CONTACT	Character	40		Contact name for job
DATE	Date	8		Service date
TIME	Character	20		Service time
PAGE	Character	4		MAPSCO page from mapsco.dbf
GRID	Character	2		MAPSCO grid from mapsco.dbf
AREA_ID	Character	5		Foreign key to area.dbf
SERV_TYPE	Numeric	2		See 'Service Groups' below
TRAN_TYPE	Numeric	2		See 'Transaction Fields' below
COMP_TYPE	Numeric	2		See 'Transaction Fields' below
COMPANY	Character	3		Contractor who did job: cont_id in contmast.dbf
TECH_ID	Character	3		Tecnician who did job: tech_id in techmast.dbf
AMOUNT	Numeric	9	2	Job total (before tax)
TRAN_STAT	Numeric	2		See explanation below
CLOSER_ID	Character	3		? Isn't used on residential orders
RECVE_AMT	Numeric	9	2	Received amount
PR_DATE	Date	8		Payroll date
ZIP	Character	5		Zipcode
BOOKBY	Character	40		? Not sure what this is for…
MAPBOOK	Character	2		Posted from zip_data.dbf
REMCALL	Numeric	1		Reminder call code
COMPANYID	Numeric	2		Foreign key to company.dbf

As you can see, some of the same fields are duplicated from the order header files.

Transaction Fields

In the order transaction process, from the time the order is taken until the order is closed by accounting, several transaction fields are used to track the order's state. These are documented below:

```
tran_type (Transaction Type)
1 = 'ORDER'
2 = 'REWORK'
3 = 'LOST APPT'
4 = 'ESTIMATE'

tran_stat (Transaction Status)
1 = 'PENDING'
2 = 'ASSIGNED'
3 = 'DISPATCHED'
4 = 'CALLBACK'
5 = 'COMPLETED'  (service complete)
6 = 'ACCOUNTING'
7 = 'CLOSED'
```

```
comp_type (Completion Type)
1 = not completed
2 = 'NORMAL'
3 = 'CANCELED'
4 = 'CONVERTED'
5 = 'EXPIRED'

canc_type (Cancellation Type)
0 = Not cancelled
1 = Not cancelled
2 = 'TECHNICIAN'
3 = 'CUSTOMER'
```

Detail Service Type

Each order detail item has a detail service type referenced by the serv_type field in the respective order detail table (e.g., dresi_cc.dbf). Serv_type is a foreign key into one of 4 detail service type tables:

Residential Carpet Cleaning:	rcc_dt.dbf
Duct Cleaning:	dc_dt.dbf
Deflood:	df_dt.dbf
Commercial Carpet Cleaning:	ccc_dt.dbf

Service Type and Service Group:

Each order has a service type. These are shown below:

```
serv_type (Service Type)
1 = 'RESIDENTIAL CARPET CLEANING'
2 = 'DUCT CLEANING'
3 = 'RESTORATION' (Has not been implemented)
4 = 'DEFLOOD'
5 = 'COMMERCIAL CARPET CLEANING'
```

Service groups are collections of service type/area combinations which allow assignment of resources to jobs. Service Groups are defined in serv_grp.dbf. In D/FW, each service type belongs to a different service group because there are separate crews that are specialized in each service type. In Houston, all service types belong to the same service group, because all crews perform all services.

Sectors and Zones:

Each Area/Service Group (servgrp.servgrpid) is divided into sectors (sectors.dbf) for scheduling and capacity management purposes. Each sector is further divided into zones (zones.dbf) with their relationship specified in sectzone.dbf. The geographical basis for sectors and zones is zip codes. Each zip code can belong to one zone for each service group, specified in zip_data.dbf by fields sg1zoneid - sg5zoneid. These fields allow for 5 service group associations, but currently, only 4 are used (the 5th was reserved for restoration).

Capacity Management

Capacity is specified at the area level , sector level, and zone level. Order bookings may exceed zone capacity if sector capacity remains, and may exceed sector capacity if area capacity remains. The following talbes are used:

Area Default Capacity:	adefcap.dbf
Area Actual Capacity:	aactcap.dbf
Sector Default Capacity:	stsdcap.dbf
Sector Actual Capacity:	stsacap.dbf

Zone Default Capacity:	tsdefcap.dbf
Zone Actual Capacity:	tsactcap.dbf

Zone and sector capacities are managed by timeslot (timeslot.dbf); area capacity is managed by day.

Actual capacities are derived from techschd.dbf, and represent the jobs that can actually be done based on commitments by the crews who promise to do so many jobs each day. Default capacities are used if actual capacities are unavailable for a given day.

Companies, Contractors, and Technicians

Companies are specified in the table company.dbf. This association with the order is used primarily for reporting purposes.

Contractors are specified in the table contmast.dbf. Each contractor is associated with an area and with a company. This table contains an entry for Dalworth Carpet Cleaning for the Dalworth company crews.

Technicians are specified in techmast.dbf. Each technician works for a contractor.

Ad Source and Ad Tracking

Each order has an advertising source that relates to ad_src.dbf. These ad sources are further aggregated into ad groups in ad_group.dbf for tracking and reporting purposes. Advertising costs are manually entered into ad_cost.dbf.

The table ad_summ.dbf is updated during all order transactions to maintain an online summary of results for reporting purposes.

The Dispatch Queue

The dispatch queue is contained in the table disp_que.dbf. Jobs are added to the queue on a daily basis for the next working day, in a process called building the queue. This process transfers relevant information about the job from the order talbes to disp_que.dbf. Once a day has been added to the queue, the queue is updated by order transactions for that date.

Once in the queue, jobs are assigned to technicians. The jobs may also be confirmed by calling the customer. The field time_stat is used to record the confirmation status and may have the following values:

```
"" - Not yet contacted
OK - Confirmed
NA - No answer
SN - See Notes
```

If an order is cancelled or rescheduled to another day after the queue is built, it is removed from the queue. Orders taken after the queue is built are added to the queue and show up as unassigned so that they can be assigned to a technician.

PRICING

Serviceman pricing is based on area (area_id) and is calculated for each line item based on its detail service type and the rules in a set of tables that control pricing. Here are the main elements of pricing:

- Each major service type (e.g., Residential Carpet Cleaning, Duct Cleaning, etc.) has multiple detail service types (e.g., Carpet Cleaning, Protectant, Repair, etc.). These detail service types and the area of the job determine the price.
- Detail service types may be auto-priced or manually priced.
- Auto-priced services may be item priced (e.g., Air Conditioning Duct is $20.00) or unit priced (e.g., Living Room is 1.0 units – unit price is applied to determine the price).
- Specials (also called packages) are chosen to determine what pricing is applied to an order. A special may include discounts, minimum units, minimum price, and pricing for additional units. A special typically covers only one detail service type but may include more than one type to provide bundled services (e.g., carpet cleaning and upholstery cleaning).
- Adjustments may be defined for auto-priced services to add or subtract certain items that may be included in a special (e.g., Add Furniture Moving).
- Scheduling discounts are provided and may be allowed or disallowed in the selected special.
- Minimum prices may be applied at the service level or disregarded if the selected special so specifies.
- Pricing criteria as well as the total price are stored in the order tables for the corresponding service (e.g., hresi_cc.dbf and dresi_cc.dbf for residential carpet cleaning).

Area Based Pricing

Many of the pricing tables are area based to allow a different pricing scheme to be implemented for each area. The area.dbf table includes certain specifications that affect pricing:

Area.dbf table structure:

Field Name	Type	Width	Dec	Comments
AREA_ID	Character	5		Primary key
AREA_NAME	Character	24		Long name of area
H_SCALE	Numeric	7	3	Used for mapsco distance calculations
V_SCALE	Numeric	7	3	Used for mapsco distance calculations
RCC_MIN	Numeric	6	2	Minimum price for residential carpet cleaning
DC_MIN	Numeric	6	2	Minimum price for duct cleaning
DF_MIN	Numeric	6	2	Minimum price for deflood
CCC_MIN	Numeric	6	2	Minimum price for commercial carpet cleaning
MAXDISCJOB	Numeric	3		Maximum discount (%) per job (I don't believe that this is used)
AREA_NUM	Character	5		Area number
DEALER_AD	Character	3		Ad source used for dealer booked jobs

Detail Service Types

Detail service type specifications, including some pricing specifications, are contained in 4 tables, one for each top-level service type. These tables are:

Residential carpet cleaning:	rcc_dt.dbf
Commercial carpet cleaning:	ccc_dt.dbf
Duct Cleaning:	cd_dt.dbf
Deflood:	df_dt.dbf

The rcc_dt.dbf is documented below. Other detail service tables are similar.

Rcc_dt.dbf table structure:

Field Name	Type	Width	Dec	Comments
TYPE	Character	30		Menu name for detail service type
TYPE_ID	Character	2		Primary key
BOOK	Logical	1		Not sure - has to do with commissions
ACTIVE	Logical	1		Boolean for active or inactive
REVENUE	Logical	1		Not sure - has to do with commissions
APPLY2MP	Logical	1		Boolean, applies toward minimum price
EXTRASALE	Logical	1		Boolean, counted as extra sale item
SERVCHARGE	Logical	1		Boolean, counted as service charge
DEFCOMM	Character	1		B for base, O for oversale, N for none
INVPICKUP	Logical	1		Boolean for inventory pickup
CF_SPOTCLN	Logical	1		Boolean for keep it clean service
CF_FILTER	Logical	1		Boolean for keep it clean (?)
GROUP_ID	Numeric	3		(?)
SCHDDISC	Logical	1		Qualifies for schedule discounts
INTERNET	Logical	1		Shows on internet pricing
VISIBLE	Logical	1		Visible in user GUI
DEF_DESC	Memo	10		Default description, used if spec_dt.dbf Refers to service and has no description
NOTES	Memo	10		Other notes, rarely used
DISP_NAME	Character	30		Name of service used in GUI.

Auto Pricing

Detail service types may be auto-priced (e.g., carpet cleaning) or manually priced (e.g, repairs). Auto-priced services may be item-priced (fixed cost per item) or unit-priced (fixed cost per unit). The auto_prc.dbf table identifies those detail service types which are auto priced. All others are manually priced.

Auto_prc.dbf table structure:

Field Name	Type	Width	Dec	Comments
SERVTYPE	Numeric	2		Service type
DTSERVTYPE	Numeric	2		Detail service type

There is a related table called prc_spec.dbf, which specifies additional information by area.

Prc_spec.dbf table structure:

Field Name	Type	Width	Dec	Comments
SERVTYPE	Numeric	2		Service type
DTSERVTYPE	Numeric	2		Detail service type
AREA_ID	Character	5		Foreign key to area.dbf
DESC	Character	40		Name of unit (e.g., Room) if unit priced
PRICE	Numeric	5	2	Unit price or zero if item priced

Services which are auto-priced must have item specifications in a table called unit_spec.dbf. The items are defined by area for each auto-priced detail service type.

Unit_spec.dbf table structure:

Field Name	Type	Width	Dec	Comments
SERVTYPE	Numeric	2		Service type
DTSERVTYPE	Numeric	2		Detail service type
AREA_ID	Character	5		Foreign key to area.dbf
ABBR	Character	3		Abbreviation for item used in GUI
DESC	Character	40		Long name for item
UNIT_SIZE	Numeric	4	2	If item is unit priced, specifies number of units for item; otherwise zero
UNIT_PRICE	Numeric	6	2	Item is misnamed. It's really the item price if item is item priced; the field is zero if the item is unit priced
INTERNET	Logical	1		Shows in list for internet
NOTE	Memo	10		Describes size of unit (13 stairs=1 unit)
ORDER	Numeric	2		Display order within detail service type

Specials (Package) Based Pricing

Pricing is calculated from the order detail items and a selected special chosen from the spec_hd.dbf table. This table and the related spec_dt.dbf contain criteria which allow the job to be priced according to the rules contained in the special. The spec_hd.dbf table:

Spec_hd.dbf table structure:

Field Name	Type	Width	Dec	Comments
SPEC_ID	Numeric	4		Primary key
NAME	Character	30		Name of special used for GUI display
SERVTYPE	Numeric	2		Service Type (see servtype.dbf)
AREA_ID	Character	5		Foreign key to the area.dbf table
DISPLAY	Logical	1		Determines whether special is displayed in GUI
START	Date	8		Effective date special begins
END	Date	8		Effective date special ends
SCHED1	Numeric	1		1 = allow; 2 = disallow; see schddisc.dbf
SCHED2	Numeric	1		1 = allow; 2 = disallow; see schddisc.dbf
SCHED3	Numeric	1		1 = allow; 2 = disallow; see schddisc.dbf
ACTIVE	Logical	1		Boolean for whether special is available
REPLACED	Logical	1		Boolean for special replaced by another
P_ORDER	Numeric	4		Order of display of specials in GUI
USE_MP	Logical	1		Boolean: area minimum price applies
CAREFREE	Logical	1		Boolean: specials for carefree service
INTERNET	Logical	1		Boolean: available on Internet
IMAGEFILE	Memo	10		Don't remember - seems unused…
DESC	Memo	10		Unused - see desc in spec_dt.dbt

Spec_dt.dbf table structure:

Field Name	Type	Width	Dec	Comments
SPEC_ID	Numeric	4		Foreign key, link to spec_hd.dbf
DTSERVTYPE	Numeric	2		Detail service type
NUM_UNITS	Numeric	2		Units included for price
MIN_PRICE	Numeric	6	2	Minimum price for detail item
UNIT_FREE	Numeric	3	1	Number of units free
PERC_OFF	Numeric	5	1	Used to specify percentage off

A_OFF_PRC	Numeric	7	2	Amount off of total regular price
A_OFF_UNIT	Numeric	5	2	Amount off regular unit price
FIX_PRICE	Numeric	6	2	Fixed price for included units
IN_ADJ	Character	80		Adjustments included in special
APPLY_ADJ	Character	80		Adjustments applied to special (?)
ALLOW_ADJ	Character	80		Allowed adjustments
CONDITIONS	Memo	10		Text describing any conditions
ADD_AMT	Numeric	5	2	Amount for additional units
ADD_PERC	Numeric	5	1	Percentage off additional units
DESC	Memo	10		Describes the special item

More than one special detail record can be associated with a special header, allowing for example, carpeting cleaning to be combined with upholstery cleaning in a package deal. This capability has rarely been used. If a special is chosen that does not include a detail record for the selected detail service type, then the default pricing for the service is used. The default pricing is specified in the prc_spec.dbf or in the unitspec.dbf table.

Adjustments

Adjustments can be used to adjust the price of a special during the order entry process if they are allowed. Adjustments can also be included or applied automatically. Adjustments are area based and are stored in the adjust.dbf table. Adjustments can be positive or negative in value. Adjustments have effectively been replaced by detail service types.

Adjust.dbf table structure:

Field Name	Type	Width	Dec	Comments
ADJUST_ID	Numeric	5		Primary key
AREA_ID	Character	5		Foreign key to the area.dbf table
SERVTYPE	Numeric	2		Foreign key to servtype.dbf table
DTSERVTYPE	Numeric	2		Identifies detail service type
DESC	Character	30		Description of adjustment
ADJ_TYPE	Numeric	2		1 = adj_amt is percent OFF 2 = Adjust total price by adj_amt 3 = Adjust unit amount by adj_amt 4 = User entered adjustment
ADJ_AMT	Numeric	6	2	Amount of adjustment (see type)
ACTIVE	Logical	1		Boolean for active or inactive
REPLACED	Logical	1		Adjustment replaced by another adjustment
APPLY_TO	Numeric	1		1 = Apply to partial units 2 = Apply only to items >= 1.0 unit
ADJUSTTYPE	Numeric	3		Not sure what this is used for…

Scheduling Discounts

ServiceMan provides for 3 levels of scheduling discounts. The discounts are specified in a table called schddisc.dbf:

Schddisc.dbf table structure:

Field Name	Type	Width	Dec	Comments
AREA_ID	Character	5		Foreign key to area.dbf
SCHED1	Numeric	4	1	Percentage discount for 1st sched discount
SCHED2	Numeric	4	1	Percentage discount for 2nd sched discount
SCHED3	Numeric	4	1	Percentage discount for 3rd sched discount
INETDISC1	Numeric	4	1	Internet percentage discount #1
INETDISC2	Numeric	4	1	Internet percentage discount #2

INETDISC3	Numeric	4	1	Internet percentage discount #3
DAYSADV1	Numeric	2		Advance days req'd to qualify for disc #1
DAYSADV2	Numeric	2		Advance days req'd to qualify for disc #2
DAYSADV3	Numeric	2		Advance days req'd to qualify for disc #3

The titles used for the scheduling discounts are contained in the sys_data.dbf table.

Minimum Price

Minimum price is determined from the area.dbf table, which has fields to specify minimums for each service type in each area. For example, in D/FW, a residential carpet cleaning job might have a minimum price of $69.95. The special selected for the job determines whether the minimum price for the service applies. It may not apply for certain detail service types, such as spot cleaning.